



Lucent Gateway Platform Maintenance and Troubleshooting User Guide

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Mandatory customer information

Safety

Always observe the Safety Instructions when operating the system.

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Manual Contents

1. Contents of this Manual

This document provides a listing of the tabs and documents of this manual. Documents are listed by name followed with its section number and its issue number and date on the same line. The names, issue and dates of Maintenance Level Procedures (MLPs), Trouble Analysis Procedures (TAPs) and Detailed Level Procedures (DLPs) can be found in the Plexus 9000 Checklist located at the rear of this manual.

2. Reason for Reissue

This manual was updated to edit selected DLP-512, 515, 535 554 and MLP-700, to add DLP-667 and to add the appendix with a listing of alarms and messages.

Safety and Regulations	160-000-200	Issue 1, July 25, 2003
Using this Guide	160-000-300	Issue 1, July 25, 2003
Maintenance		
1. Maintenance Overview	160-100-000	Issue 2, May 28, 2004
Maintenance Procedures		
2.0 Maintenance Task Index List Maintenance Level Procedures	160-100-001	Issue 3, May 28, 2004
Troubleshooting		
3. Troubleshooting Overview	160-200-000	Issue 1, July 25, 2003
Trouble Analysis Procedures		
4.0 Trouble Clearing Task Index List (TAP-IXL-001) TAP Procedures	160-200-001	Issue 4, May 28, 2004
Detailed Level Procedures		
5.1 DLPs in Numerical Order (DLP-TOC1)	160-700-500	Issue 3, May 28, 2004
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Checklist		
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Safety and Regulations

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1. Safety Instructions

1.1 Admonishments

This manual contains admonishments in the form of **DANGERs**, **Cautions**, and **Warnings**. These admonishments have the following definitions:



DANGER: indicates the presence of a hazard that will cause death or severe personal injury if the hazard is not avoided.



Caution: indicates possibility of causing service interruption if precautionary measures are not taken.



Warning: indicates possibility of equipment damage if precautionary measures are not taken.

1.2 Important Safety Instructions

The following list of safety instructions should be observed when working with and around the Plexus 9000:

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage.
4. Slots and openings in the cage are provided for ventilation. To protect the product from overheating, these openings must not be blocked or covered. This product should not be placed in a built-in installation unless proper ventilation is provided.
5. Operate this product from the type of power source indicated on the marking label. For information on proper electrical and power requirements, refer to the Specifications subsection of the Chassis Detailed Description in the Hardware Description section of this manual.
6. Never push objects of any kind into this product through cabinet slots. Objects inserted into the cage may touch dangerous voltage points or short out parts, increasing the risk of fire or electrical shock.
7. Never spill liquid of any kind on the product.
8. To reduce the risk of electrical shock, do not disassemble this product. Only trained personnel should perform service. Removing covers and/or circuit cards may expose you to dangerous voltages or other risks. Incorrect assembly can cause electrical shock when the unit is used.
9. Use only Telica circuit cards in this system.

2. Electrostatic Discharge (ESD)



Warning: All integrated circuit cards can be damaged by static electricity that builds up on work surfaces and personnel. The static charges are produced by various charging effects of movement and contact with other objects. Dry air allows greater static charges to accumulate. Higher static electricity is present in areas with low relative humidity, but static electricity can cause damage anywhere.

The following list of precautions should be observed when handling circuit cards in order to prevent damage by electrostatic discharge:

- Assume all circuit cards contain solid-state components that can be damaged by ESD.
- When handling circuit cards (storing, inserting, removing, etc.) or when working on the backplane, always wear a grounded wrist strap or wear a heel strap and stand on a grounded, anti-static floor mat.
- Handle all circuit cards by the extractor handle and top or bottom edges. Never touch the components, conductors or connector pins.
- Observe warning labels on bags and cartons. Do not remove circuit cards from anti-static packaging until ready to insert them into slots.
- If possible, open all circuit cards at a static-safe work position, using properly grounded wrist straps and anti-static tablemats.
- Always store and transport circuit cards in anti-static packaging. Shielding is not required unless specified.
- Keep all static-generating materials such as food wrappers, plastics, and Styrofoam containers away from all circuit cards. Upon removal from bay, immediately put circuit cards into anti-static packages.
- Whenever possible, maintain relative humidity above 20 percent.

To eliminate the possibility of ESD damage, units are equipped with grounding jacks to enable personnel to ground themselves using wrist straps while handling circuit cards or working on a unit. An alligator clip adaptor enables connection to bay frame ground when grounding jacks are not provided.

3. Laser Safety Notice

This product uses a semiconductor laser system and is classified as an AEL (Accessible Emission Limit) Class 1 Laser Product according to U.S. FDA CDRH Regulations and IEC 60825-1. This product meets Class 1 Laser Safety Requirements of 21 CFR 1040.10 and 1040.11. This product meets the Class 1 Laser Safety Requirements of IEC 60825-1 and IEC 60825-2. To meet laser safety requirements this product must be operated within the Data Sheet Limits. It is eye safe when used within the Data Sheet Limits per FDA CDRH. It is also eye safe under normal operating conditions and under all reasonably foreseeable single fault conditions per IEC 60825-1 and IEC 60825-2.



Warning: Do not look at the laser beam projection area (e.g. end of optical connector) with naked eyes or through optical equipment while the power is supplied to this product. Otherwise, your eyes may be injured.



Caution: If this product is used under conditions not recommended in the specification or this product is used with unauthorized revision, classification for laser product safety standard is invalid. Classify the product again at your responsibility and take appropriate actions.

4. Exemption

The Plexus 9000 is intended for tandem switching applications and as such is exempt from CALEA requirements. The Plexus may not be lawfully used in any application involving terminations directly to individual subscriber stations without a waiver from the FCC. Applications involving terminations to PBXs, channel banks or other similar equipment, where calls to or from individual stations behind the equipment can be uniquely identified, require a similar waiver.

Such waivers may be obtained by applying to the FBI's Flexible Deployment Program Manager, CALEA Implementation Section, at 800-555-0336 or 703-814-4700. The CALEA implementation group of the FBI has informed Telica that trunks to a PBX that do not provide DID capability or pass station ID to the Plexus are exempt from CALEA requirements. A CALEA enhancement package will be available for the Plexus in the last quarter of 2003.

5. Regulatory Compliance Notices

5.1 Federal Communications Commission Notice

5.1.1 FCC Part 15 Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

5.1.2 Modifications

The FCC requires you to be notified that any changes or modifications made to this device that are not expressly approved by Telica, Inc. may void your authority to operate the equipment.

5.1.3 Cables

Connections to this device must be made with shielded cables in order to maintain compliance with FCC Rules and Regulations.

5.2 Canadian Notice

This Class A digital apparatus complies with Canadian ICES-003.

5.3 Avis Canadien

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

NOTES:

Using this Guide

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1. Overview

The *Maintenance and Troubleshooting Guide* describes procedures to maintain and check switch operation as well as troubleshoot existing alarms or problems. It also includes procedures necessary to upgrade system and IOM software.

2. Scope and Audience

This manual is intended for personnel who service and install the Plexus 9000. These personnel must have a thorough knowledge of telecommunications and the following:

- Experience in configuring and managing telephony switching equipment
- A working knowledge of the Plexus 9000
- Knowledge of TL1 command usage
- An understanding of protocols running on the Plexus system
- Experience in use of test equipment.

3. Maintenance and Troubleshooting Overview

This guide provides procedures for performing periodic maintenance and for troubleshooting problems you may encounter when operating the Plexus 9000, its related hardware, and system software as well as procedures for replacing faulty modules.

- Periodic maintenance
- Upgrade of system and IOM software
- Collection of operation statistics
- Retrieval of various logs
- Retrieval of alarms and conditions
- Methods for preventing a problem
- Fixing a known problem
- Strategies for reducing or preventing further occurrences of a problem

4. Preventing Problems

Taking the proper precautionary measures can help avoid repeat and other problems. Tips for reducing or avoiding problems include the following.

- Read the release notes and related documentation
- Follow proper ESD procedures
- Minimize disruption when installing and upgrading software
- Perform regular system backups
- Perform maintenance procedures

5. Using the CD-ROM

Like many manuals today, this one has a CD-ROM inserted in a pocket on the back of the binder cover. When inserted into a drive, the CD-ROM will automatically open to the main menu page. From this page, you can select the Maintenance and Troubleshooting Guide.

When using this Guide you can move to different areas using the bookmarks on the left side of the page. Clicking on the plus (+) sign in front of a topic will expand it, clicking on the minus (–) sign will minimize it. Table of Contents information in blue font will also move you to that identified topic. Titles in blue font will return to the first page of the Maintenance and Troubleshooting Guide. Clicking on the title of the first page (Manual Contents) will return you to the Main Menu page.

6. Relationship Between Manuals

The *Maintenance and Troubleshooting Guide* provides information to maintain the Plexus and prevent future problems as well as providing procedures to troubleshooting existing problems. Troubleshooting was formerly part of the Installation and Operation Manual. This manual is used in conjunction with other Plexus documentation. Refer to [Table A](#) for a list of Plexus manuals and guides and to [Table B](#) for a list of manual sets and CD-ROMs available.

Table A. Plexus 9000 Manuals and Part Numbers

Product	Number	Product Description
Plexus 9000 Installation and Operations Manual	79-6002	Contains Plexus 9000 installation and provisioning procedures.
Plexus 9000 TL1 Commands Reference Guide	79-6003	Provides a listing and description of all the TL1 commands needed to provision the Plexus 9000.
Plexus 9000 Planning and Engineering Guide	79-6004	Provides information regarding the items necessary for planning a Plexus 9000 installation as well as a description of modules.
PlexView Pro Billing System User Guide	79-6008	Explains the procedures necessary to operate, administer, and maintain the Billing System.
PlexView Element Management System (EMS) User Guide	79-6010	Explains how to use the EMS to provision and control the Plexus 9000.
PlexView Element Management System Installation Guide	79-6011	Provides procedures for installing the EMS software on a Sun workstation. In printed form, is bound with the PlexView EMS User Guide.
Billing and Traffic Collection Guide	79-6021	Provides descriptions of billing and traffic collection applications and procedures for installing and upgrading.
Maintenance and Troubleshooting Guide	79-6022	Provides procedures for maintaining and troubleshooting alarms of the Plexus.

Table B. Manual Sets and CD-ROMs

Product	Number	Product Description
Plexus 9000 Core Documentation Set	79-6005	Consists of the Installation and Operations Manual, PN 79-6002; the TL1 Commands Reference Guide, PN 79-6003; and the Planning and Engineering Guide, PN 79-6004.
Plexus 9000 Install and TL1 Documentation Set	79-6006	Consists of the Installation and Operations Manual (79-6002) and the TL1 Commands Reference Guide (79-6003).
Plexus 9000 Customer Documentation CD-ROM	79-6007	Contains the manuals and release notes in Adobe Acrobat PDF format.
PlexView Pro Billing System User Guide CD-ROM	79-6009	Contains the Billing System manual in Adobe Acrobat PDF format.
PlexView EMS Documentation CD-ROM	79-6012	Consists of the PlexView EMS User Guide (79-6010), the PlexView EMS Installation Guide (79-6011), and the PlexView EMS Release Notes.
Billing and Traffic Collection CD-ROM	79-6026	Contains the Billing and Traffic Collection Guide and release notes in Adobe Acrobat PDF format.

1. Maintenance Overview

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1.1 Overview of Maintenance

The Maintenance section provides strategies for monitoring and maintaining the system to prevent future problems with the Plexus 9000, its related hardware, and system software.

1.1.1 Maintenance Topics

In this section, maintenance covers:

- Performing period preventive maintenance
- Monitoring equipment and circuits to prevent service degradation
- Retrieving status and statistics
- Setting thresholds and registers
- Retrieving performance monitored data
- Backing up system configuration
- Scheduling backups and failovers
- Performing loopbacks
- Upgrading system software
- Installing patches for software versions

1.1.2 Maintenance Assumptions

It is assumed you have:

- Experience in configuring and managing telephony switching equipment
- A working knowledge of the Plexus 9000
- An understanding of protocols running on the Plexus system
- Knowledge of using TL1 commands to provision and retrieve equipment information
- Knowledge of the use of test equipment and tools

1.2 Preventive Maintenance

Preventive maintenance consists of performing routine tests, and monitoring equipment and circuits to prevent service degradation. By monitoring the performance of the switch, maintenance personnel can recognize less than optimal operating conditions before they become alarm-generating troubles.

[Table A](#) list the tasks that must be performed on a monthly basis. These tasks are performed in MLP-700.

Table A. Monthly Maintenance

Task
Change fan filter.
Check for disconnected or loose cables.
Check for excessive bends or pinching of fiber optic cables.
Ensure front plate is installed on all empty slots.
Listen for irregular noises.
Check LEDs.
Retrieve current status, statistics and performance monitored data

1.3 Monitoring the Plexus

By retrieving status and statistics of the switch, you can recognize less than optimal operating conditions before they become alarm-generating troubles. You can then determine the cause of these conditions and fix them so that the Plexus is operating properly.

The Maintenance Task Index List (IXL) identifies tasks that retrieve status or statistics and performance monitored data. These are performed as determined by company policy and need. The system software determines which commands can be used.

1.4 Backups and Failovers

1.4.1 Backing up system configuration

Backing up the system configuration should be done frequently in case of database corruption. It is recommended that it always be done before an upgrade of system software or the installation of patch software and after major configuration changes.

1.4.2 Scheduling backups

Backups can be scheduled using TL1 commands or the Element Management System (EMS). This insures that backups are done periodically.

1.4.3 Scheduling failovers

Failovers can be scheduled as well using TL1 commands or the EMS. Failovers can be scheduled for SPs and IOMs. Intervals can be by hours or by days and can be specified to occur at a specified time. All failovers can be reported or only failures can be reported. Failover schedules can be different for SPs and individual IOMs. Failovers are scheduled using the **SCHED-EX-EQPT** command.

If you want to check IOMs by failing them over, Telica's recommendation is that each week one TDM (DS1 or DS3) IOM be switched to the protection and then restored. Each week a different IOM should be switched to protection and restored. If the Plexus had ten working DS1 and DS3 IOMs, then an IOM would be switched to protection every tenth week. If there are four or less TDM IOMs, you can schedule the failovers using the **SCHED-EX-EQPT** command. If there are more than four TDM IOMs, you can perform MLP-710 weekly with a different IOM.

1.5 Loopbacks

Loopbacks are useful to determine line problems. Loopbacks are used during the installation process to verify that wiring and cabling is correct and must be done before an IOM is provisioned for service.

Loopbacks can be performed as part of troubleshooting, but remember that service is disrupted while performing loopbacks so loopbacks should be used with caution.

Before executing a loopback command, loopbacks must be allowed using the **ALW-LPBK** command, and then the appropriate loopback command can be issued. Loopbacks can also be inhibited using the **INH-LPBK** command.

1.6 Upgrading System Software and Installing Patches

System software for the system processor and for the IOMs is periodically updated to add features as well as to correct problems. Patches are issued to correct known problems before a new revision of software is issued.

System software can be upgraded and patches can be installed locally or remotely. At the current time, Telica technical services personnel do upgrades and installation of patches, typically during a maintenance window.

2. Maintenance Task Index List

SUMMARY: This task index list provides a list of procedures that can be performed for preventative maintenance and performance checks to determine the current status of the Plexus 9000 and determine less than optimal operating conditions before they become alarm-generating troubles, to replace or upgrade modules or to run tests such as loopbacks. Detailed Level Procedures (DLPs) are listed by grouping and then in alphabetical order.

If you are using documentation on CD ROM, use the bookmarks on the left of the screen to move to the desired procedure.

FIND YOUR JOB IN THE LIST BELOW THEN GO TO
Maintenance Level Procedures (MLPs)
Required Procedures
Periodic Maintenance MLP-700
Optional Procedures To Check Performance and Status
Check Call Control Information MLP-701
Check ISDN Message Information MLP-702
Check ISUP Message Information MLP-703
Check SS7 Signaling Information MLP-704
Check PM Data for Signaling Link Layer 2/3 MLP-705
Check ISDN Status MLP-706
Check GR303 Status MLP-707
Check PM Data and Initialize Registers for SIP Messages MLP-708
Check PM Data and Initialize Registers for T1 and T3 MLP-709
Switch or Schedule A Switch To Protection MLP-710

FIND YOUR JOB IN THE LIST BELOW THEN GO TO

Detailed Level Procedures (DLPs)

DLPs for Installing, Replacing and Upgrading

Change I/O Module Software Version..... **DLP-621**

Install a Patch **DLP-617**

Module Installation or Removal..... **DLP-514**

Remove or Restore Modules **DLP-554**

Replace a Fan Shelf **DLP-507**

Replace a Module, Fan or Fan Filter..... **DLP-535**

Replace an I/O Module **DLP-515**

Replace Switch Fabric Module **DLP-513**

Replace System Processor..... **DLP-512**

Replace the Fan Filter **DLP-508**

Upgrade an I/O Module..... **DLP-511**

DLPs for Testing

Allow or Inhibit Loopbacks **DLP-556**

Allow, Inhibit or Schedule Failovers **DLP-611**

Capturing Calls..... **DLP-615**

Capturing Signaling..... **DLP-606**

Operate a Circuit Query or Validation Test **DLP-612**

Perform Loopbacks **DLP-532**

Switch ISDN D Channel to Protection..... **DLP-613**

Test Using the Monitor Test Jacks..... **DLP-569**

Trace Call **DLP-614**

FIND YOUR JOB IN THE LIST BELOW THEN GO TO

Retrieve Alarms, Conditions, Status, and Performance Monitoring

Generate or Retrieve SECULOG	DLP-616
Provision GMSC Registers and Retrieve PM Data.....	DLP-666
Provision OC Registers and Thresholds and Retrieve PM Data.....	DLP-539
Retrieve Alarms or Conditions.....	DLP-568
Retrieve COT or CFV for a Subscriber.....	DLP-626
Retrieve ENET Stats	DLP-652
Retrieve Failure Conditions or Fraud Call Details, Release a Call and Verify a Translation Plan.....	DLP-672
Retrieve or Delete Alarm Queue.....	DLP-609
Retrieve PM Data and Set/Retrieve Thresholds for VCC.....	DLP-653
Retrieve PM Data and Set/Retrieve Thresholds for Voice Processors	DLP-654
Retrieve PM Data For SS7 Route and Initialize Registers.....	DLP-636
Retrieve RDT Layer 2 and 3 timers	DLP-631
Retrieve Status for CTXT, RTPTERMID or TDMTERMID	DLP-645
Retrieve Status of Media Gateway and Voice Server IOMs.....	DLP-624
Retrieve PM Data and Initialize registers for LAPD Message Statistics.....	DLP673
Retrieve PM Data and Initialize registers for Release Causes.....	DLP-671
Retrieve PM Data and Initialize registers for Voice Mail System.....	DLP-670

Other DLPs

Connect the Plexus 9000 to a Craft Terminal	DLP-516
Log Commands	DLP-555
Provision and Schedule System Backup	DLP-610
Provision PM Day and Schedule.....	DLP-561

NOTES:

MLP-700 - PERIODIC MAINTENANCE

SUMMARY: This procedure provides steps for performing periodic maintenance for the Plexus 9000. This includes replacing the fan filter, checking cables and checking chassis LEDs. Telica recommends that the fan filter be inspected and replaced monthly. The filter is disposable and cleaning is not recommended.



Caution: *Telica recommends changing the fan filter monthly. Failure to do so is done at your own risk.*

If fuses are removed, do not leave fans depowered (fuses removed) for more than 1 minute.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.



Note: The following steps will provide information to inspect and change the fan filter. The fans should be turned off prior to the removal of the fan filter by removing the A and B GMT fuse located on the rear of the chassis. This prevents any loosened debris from being pulled up through the chassis.

2. Inspect the fan filter's shipping container for any visible signs of damage. Claims for damage incurred in shipment should be made to the transportation company involved, in accordance with the company instructions.
3. Open the box containing the filter, carefully remove the fan filter and place it on a bench for easier inspection.
4. Inspect the fan filter for concealed damage. If the fan filter appears to be damaged, then call Telica for an RMA number and shipping instructions.
5. Remove the fan filter grill cover from the front bottom of the chassis as shown in [Figure 1](#).
6. Carefully slide the old fan filter out of the chassis as illustrated in [Figure 1](#). Try to prevent loose debris from being pulled up through the chassis.

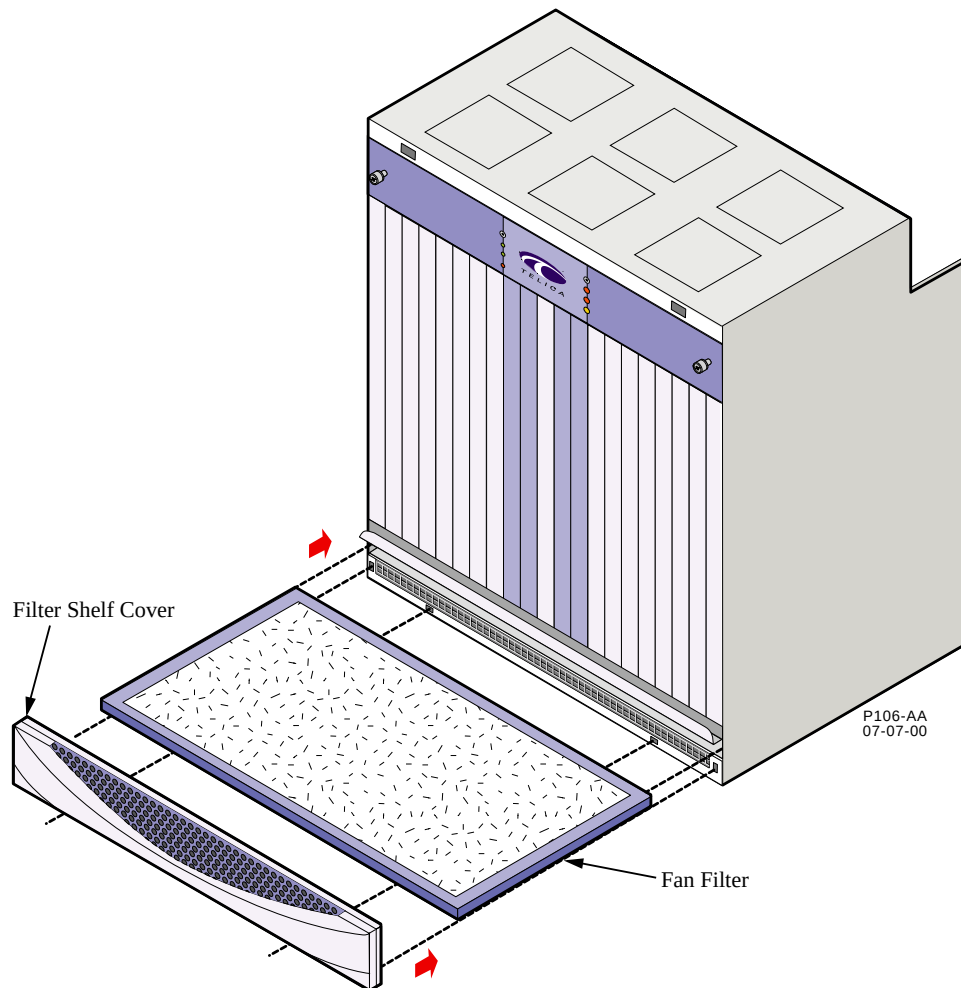


Figure 1. Fan Filter Removal and Replacement (P106-AA)



Caution: *Telica recommends changing the fan filter monthly. Failure to do so is done at your own risk.*

7. If it is your company's policy to replace the filter monthly, then go to [Step 10](#).
8. If it is your company's policy to inspect the fan filter and replace only if necessary, then continue to the next step.
9. Does the fan filter require changing?
If **YES**, then obtain a filter and continue to the next step.
If **NO**, then replace the filter and go to [Step 11](#).
10. Insert the new fan filter into the chassis, as illustrated in [Figure 1](#).

11. Attach the fan filter grill cover to the front bottom of the chassis as shown in [Figure 1](#).
12. Perform a visual inspection of the unit.
 - Ensure all modules are installed properly.
 - Ensure empty slots have a blank panel installed.
 - Ensure all cables are connected properly.
 - Ensure that fiber optic cables do not have excessive bends and have adequate spacing.
13. Press the LED Test button on the top of the chassis. This causes all LEDs on the top of the chassis except the ACO LED and LEDs on the front of the modules to illuminate.
14. Did all the LEDs, except the ACO LED, illuminate?
 - If **YES**, then continue to the next step.
 - If **NO**, call Telica Technical Services at 888-440-8354 or 888-440-TELI and then go to [Step 19](#).
15. Check LEDs on the top front of the chassis. Is the FAN FAIL LED on the front of the chassis illuminated?
 - If **YES**, then continue to the next step.
 - If **NO**, then go to [Step 18](#).
16. Check the fan fuses on the lower rear of the chassis. Is a fuse blown or inserted incorrectly?
 - If **YES**, then replace the blown fuse or insert it correctly and continue.
 - If **NO**, then replace the Fan Shelf.
 - Reference: **DLP-507**
17. Is the FAN FAIL LED still illuminated?
 - If **YES**, call Telica Technical Services at 888-440-8354 or 888-440-TELI and then go to [Step 19](#).
 - If **NO**, then continue to the next step.
18. Are there any red or amber LEDs illuminated on the top of the chassis?
 - If **YES**, then go to the TAP-IXL to determine the problem.
 - If **NO**, then continue to the next step.
19.  **YOU HAVE COMPLETED THIS PROCEDURE.**

NOTES:

MLP-701 - CHECK CALL CONTROL INFORMATION

SUMMARY: This procedure provides steps to retrieve call control information to determine operational status of the Plexus 9000. This is a recommended, but not required, procedure to determine less than optimal conditions before they become problems.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



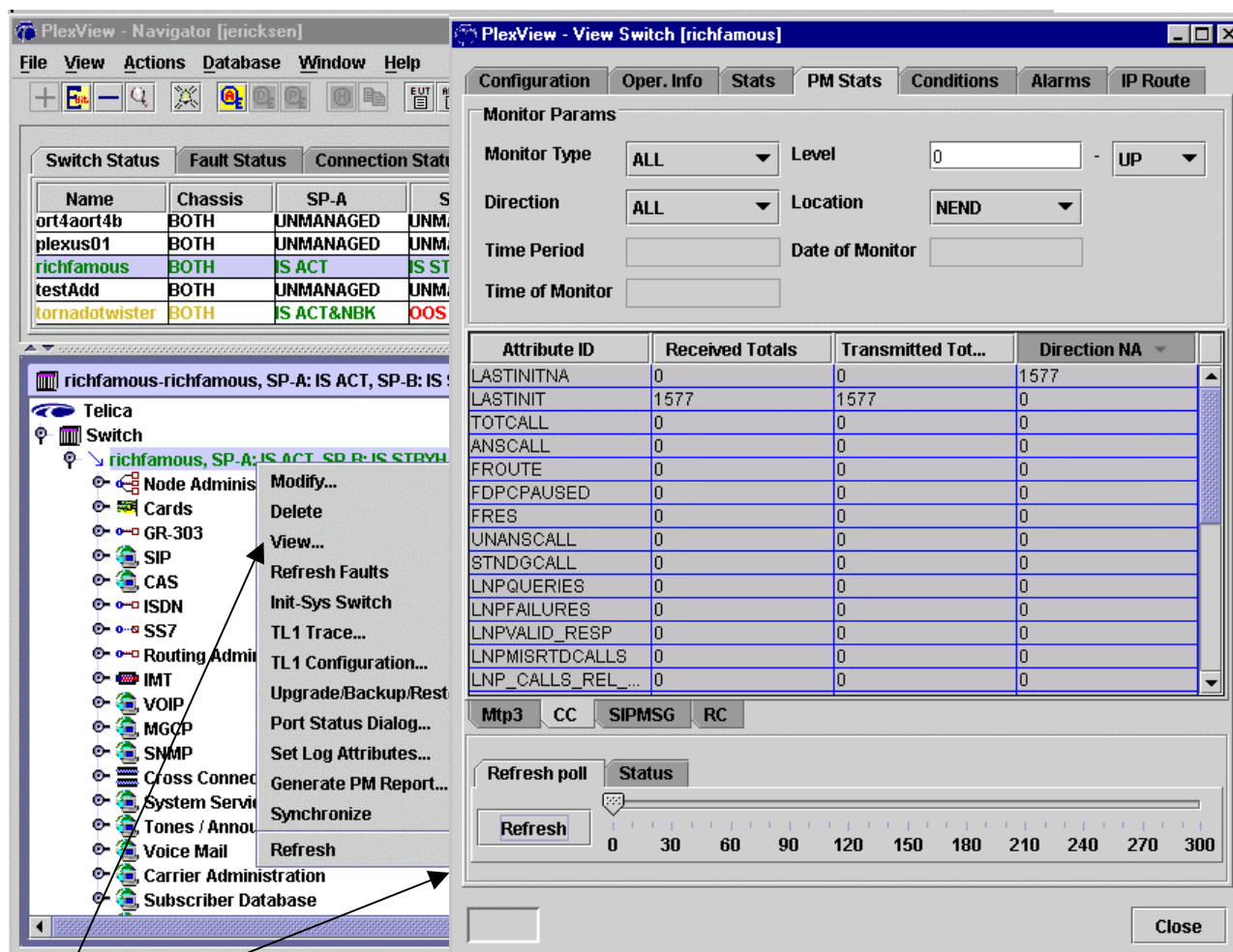
Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Are you going to be using the EMS or TL1 to check call control information?

If using the **EMS**, then continue to the next step.
If using **TL1**, then go to [Step 18](#).
2. Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Select *View, Stats* and click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).
3. Analyze the retrieved information. Are there a large number of route or resource failures reported?

If **YES**, then go to [Step 14](#).
If **NO**, then continue to the next step.
4. Retrieve current and historical performance data for call control in the Plexus by right-clicking the switch name in the switch status panel or double-clicking the switch to select it for the main panel and then right-clicking the switch name. Select *View, PM Stats* and click *CC* and *Refresh* near the bottom of the panel for the latest information. Refer to Chapter 5 of the EMS User Guide for a description of parameters monitored or to **DLP-571** for parameter information of the associated TL1 command. See [Figure 2](#) for sample screens.
5. Analyze the retrieved information. Are there a large number of FROUTE (failure, route unavailable) or FRES (call failure, resources unavailable), LNPFAILURES (LNP failures) or LNPMISRTDCALLS (Misrouted LNP calls) calls reported?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 14](#).



6. Can you obtain an ASCII call detail record (CDR) report from the traffic collection application (TCA) running on a Sun server?

If YES, then continue to the next step.

If NO, then go to [Step 11](#).

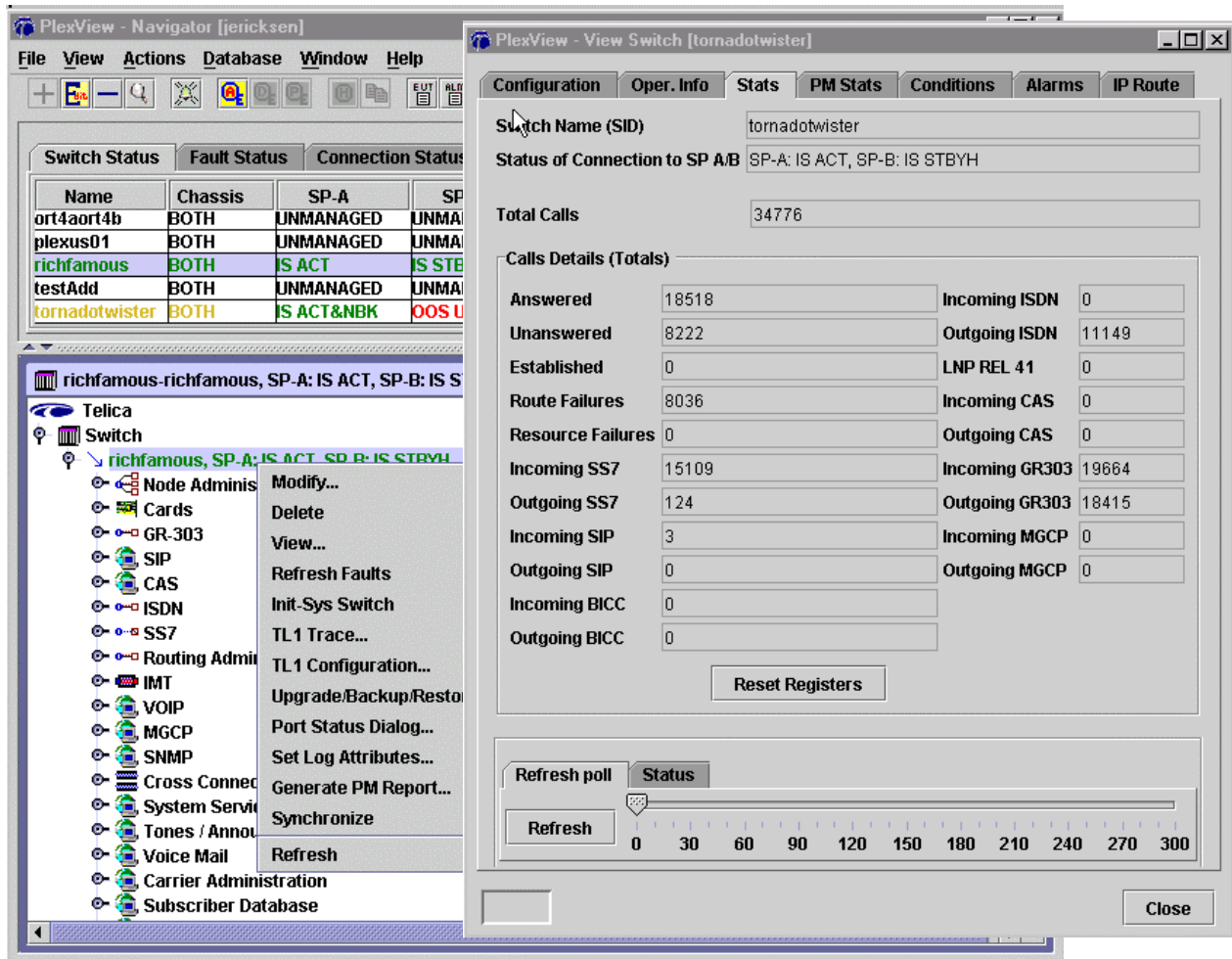


Figure 2. Call Control PM Stats



Note: If CDR generation is turned on, then an ASCII CDR file is created every 5 minutes and CDRs of the calls are written in these files. The naming convention for the file is:

<prefix>_STATS_CDR_yyyymmddhhmm.txt

where *prefix* is the hostname; *yyyy* is the year; *mm* is the month within the year; *dd* is the day of the month; *hh* is the hour of the day; and *mm* is the minute of the hour.

- Refer to the “8. Traffic Statistics Reports” chapter and locate the ASCII CDR Report paragraph for the format. Refer to the “Release Causes” table in the appendix of the *Billing and Traffic Collection Guide*. Look at the release cause fields of the CDRs and look for causes that indicate problems.

8. Do release cause codes indicate problems because of provisioning or lack of provisioning?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

9. Make the required changes to provisioning. Refer to the *EMS Users Guide* for information and procedures.

10.  **YOU HAVE COMPLETED THIS PROCEDURE.**

11. Do release cause codes indicate problems because of external equipment?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 14](#).

12. Determine the cause and correct the problem.

13. Determine the cause of problems with tools available and correct the problem.

14. Do you want to initialize the registers?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 16](#).

15. Clear the counters for call control statistics by right-clicking the switch name in the switch status panel or double-clicking the switch to select it in the main panel and then right-clicking the switch name. Then select *Modify*, *PM Stats* and *CC*. Make the appropriate changes. When finished click *Ok* or *Apply*. Refer to the *EMS Users Guide* for information. See [Figure 3](#).

16. Do you want to check call control statistics again?

If **YES**, then go to [Step 2](#).

If **NO**, then continue to the next step.

17.  **YOU HAVE COMPLETED THIS PROCEDURE.**

The screenshot shows the 'PlexView - View Switch [baitswitch]' window. It has tabs for 'PM Stats', 'Conditions', 'Alarms', and 'IP Route'. Under 'PM Stats', there are sub-tabs for 'Configuration', 'Oper. Info', and 'Stats'. The 'Configuration' sub-tab is active, showing 'Monitor Params' with fields for 'Monitor Type' (ALL), 'Level' (0), 'Direction' (ALL), 'Location' (NEND), 'Time Period', 'Date of Monitor', and 'Time of Monitor'. Below this is a table of statistics:

Attribute ID	Received Totals	Transmitted T...	Direction NA
TOTCALL	0	0	710
ANSCALL	0	0	8
FROUTE	0	0	0
FDPCPAUSED	0	0	0
FRES	0	0	0
UNANSCALL	0	0	702
STNDGCALL	0	0	0
LNPQUERIES	0	0	0
LNPFAILURES	0	0	0
LNPVALID_RESP	0	0	0
LNPMISRTDCALLS	0	0	0
LNP_CALLS_REL...	0	0	0
LNP_CALLS_REL...	0	0	0
LASTINITNA	0	0	200
LASTINIT	200	200	0

Below the table are tabs for 'Mtp3', 'CC', 'SIPMSG', and 'RC'. At the bottom, there is a 'Refresh poll' section with a 'Status' indicator and a 'Refresh' button. A progress bar shows a value of 0 out of 300. A 'Close' button is in the bottom right corner.

Figure 3. Modify PM Stats for Call Control

18. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica:::telica;

19. Retrieve statistics for call control using the RTRV-STATS-CC command. Reference **DLP-571** for detailed information for the command.

Command Syntax: RTRV-STATS-CC:[TID]: [<COM>]:[CTAG];

Output Example:

```
telica 2003-05-16 14:37:49
M 0 COMPLD
"TOTCLS=0,ANSCLS=0,UNANSCLS=0,STNDGCLS=0,CFRTEUN=0,
CFRSRUN=0,INSS7CLS=0,OUTSS7CLS=0,INISDNCLS=0,
OUTISDNCLS=0,LNPCALLSREL41=0,INCASCLS=0,OUTCASCLS=0,
INGR3CLS=0,OUTGR3CLS=0,INSIPCLS=0,OUTSIPCLS=0,
INBICCLS=0,OUTBICCLS=0,INMGCPCLS=0,OUTMGCPCLS=0"
/* RTRV-STATS-CC */
```

20. Analyze the retrieved information. Are there a large number of CFRTEUN (call failure, route unavailable) and/or CFRSRUN (call failure, resources unavailable) reported?

If **YES**, then go to [Step 31](#).

If **NO**, then continue to the next step.

21. Retrieve current and historical performance data for call control in the Plexus 9000 using the RTRV-PM-CC command. Reference **DLP-571** for detailed information for the command.

Command Syntax: RTRV-PM-CC:[TID]: [<src>]:[CTAG]: :
[<montype>], [<monlev>], [<locn>],
[<dirn>];

Command Example: RTRV-PM-CC;

Output Example:

```
telica 2002-09-25 14:37:49
M 0 COMPLD
"COM:TOTCALL,371262,0-UP,NEND,ALL"
"COM:ANSCALL,0,0-UP,NEND,ALL"
"COM:FROUTE,0"
"COM:FDPCPAUSED,0"
"COM:FRES,0"
"COM:UNANSCALL,0"
"COM:STNDGCALL,0"
"COM:LNPQUERIES,0"
"COM:LNPFAILURES,0"
.
.
.
"COM:INISDN,0,0-UP,NEND,ALL"
/* RTRV-PM-CC */
;
```


22. Analyze the retrieved information. Are there a large number of FROUTE (failure, route unavailable) or FRES (call failure, resources unavailable), LNPFAILURES (LNP failures) or LNPMISRTDCALLS (misrouted LNP calls) calls reported?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 31](#).

23. Can you obtain an ASCII CDR report from the TCA running on a Sun server?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 30](#).



Note: If CDR generation is turned on, then an ASCII CDR file is created every 5 minutes and CDRs of the calls are written in these files. The naming convention for the file is:

`<prefix>_STATS_CDR_yyyymmddhhmm.txt`

where `prefix` is the hostname; `yyyy` is the year; `mm` is the month within the year; `dd` is the day of the month; `hh` is the hour of the day; and `mm` is the minute of the hour.

24. Refer to the “8. Traffic Statistics Reports” chapter and locate the ASCII CDR Report paragraph for the format. Refer to the “Release Causes” table in the appendix of the *Billing and Traffic Collection Guide*. Look at the release cause fields of the CDRs and look for causes that indicate problems.

25. Do release cause codes indicate problems because of provisioning or lack of provisioning?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 28](#).

26. Make the required changes to provisioning. Refer to the *Installation and Operation Manual* for information and procedures.

27.  **YOU HAVE COMPLETED THIS PROCEDURE.**

28. Do release cause codes indicate problems because of external equipment?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 31](#).

29. Determine the cause and correct the problem.

30. Determine the cause of problems with tools available and correct the problem.

31. Do you want to initialize the registers?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 34](#).

32. Clear the counters for call control statistics using the **INIT-REG-CC** command.
Reference **DLP-571** for detailed information for the command.

Command Syntax: **INIT-REG-CC:[TID]:[<src>]:[CTAG]::**
<montype>,[<monval>],[<locn>],[<dirn>];

Command Example: **INIT-REG-CC::::ALL;**

33. Do you want to check call control statistics again?

If **YES**, then go to [Step 19](#).
If **NO**, then continue to the next step.

34.  **YOU HAVE COMPLETED THIS PROCEDURE.**

MLP-702 - CHECK ISDN MESSAGE INFORMATION

SUMMARY: This procedure provides steps to retrieve ISDN message information to determine operational status of the Plexus 9000.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Are you going to be using EMS or TL1 to check ISDN message information?
If using **EMS**, then continue to the next step.
If using **TL1**, then go to [Step 18](#).
2. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *ISDN* and then *Interfaces*. Right-click an interface and select *View, Stats* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).
3. Analyze the retrieved information. Are the numbers of the setup, connect, acknowledge and release messages fairly similar or is there a large disparity between them?
If **YES**, there is a similarity in numbers, then go to [Step 14](#).
If **NO**, numbers vary greatly, then continue to the next step.
4. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *ISDN* and then *Interfaces*. Right-click an interface and select *View, PM Stats* and then click *Refresh* near the bottom of the panel for the latest information. See [Figure 2](#).
5. Analyze the retrieved information. Are the numbers of the setup, connect, acknowledge and release messages fairly similar or is there a large disparity between them?
If **YES**, there is a similarity in numbers, then go to [Step 14](#).
If **NO**, numbers vary greatly, then continue to the next step.

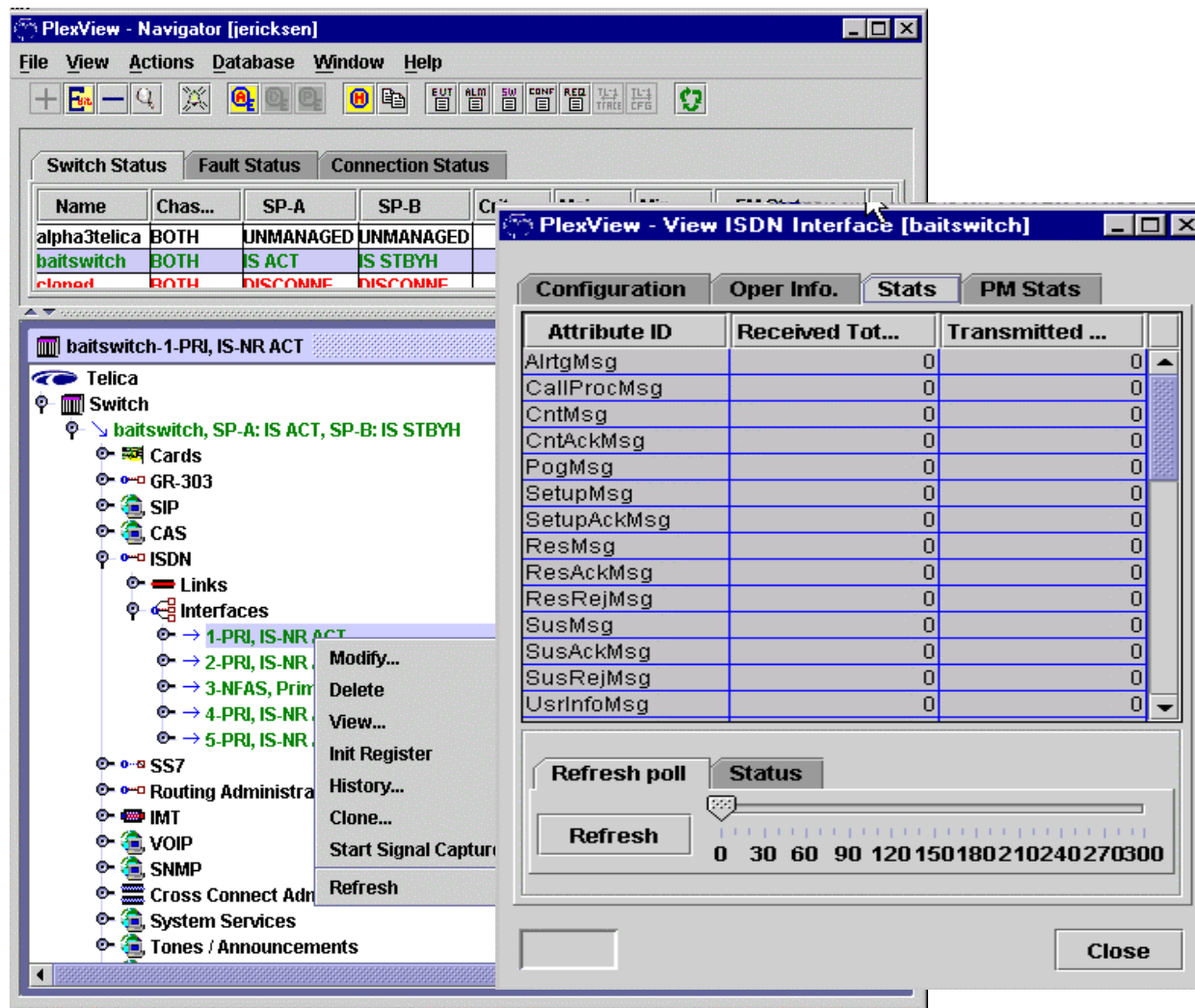


Figure 1. ISDN Interface

6. Can you obtain an ASCII CDR report from the traffic collection application (TCA) running on a Sun server?

If YES, then continue to the next step.

If NO, then go to [Step 14](#).



Note: If CDR generation is turned on, then an ASCII CDR file is created every 5 minutes and CDRs of the calls are written in these files. The naming convention for the file is;

<prefix>_STATS_CDR_yyyymmddhhmm.txt

where **prefix** is the hostname; **yyyy** is the year; **mm** is the month within the year; **dd** is the day of the month; **hh** is the hour of the day; and **mm** is the minute of the hour.

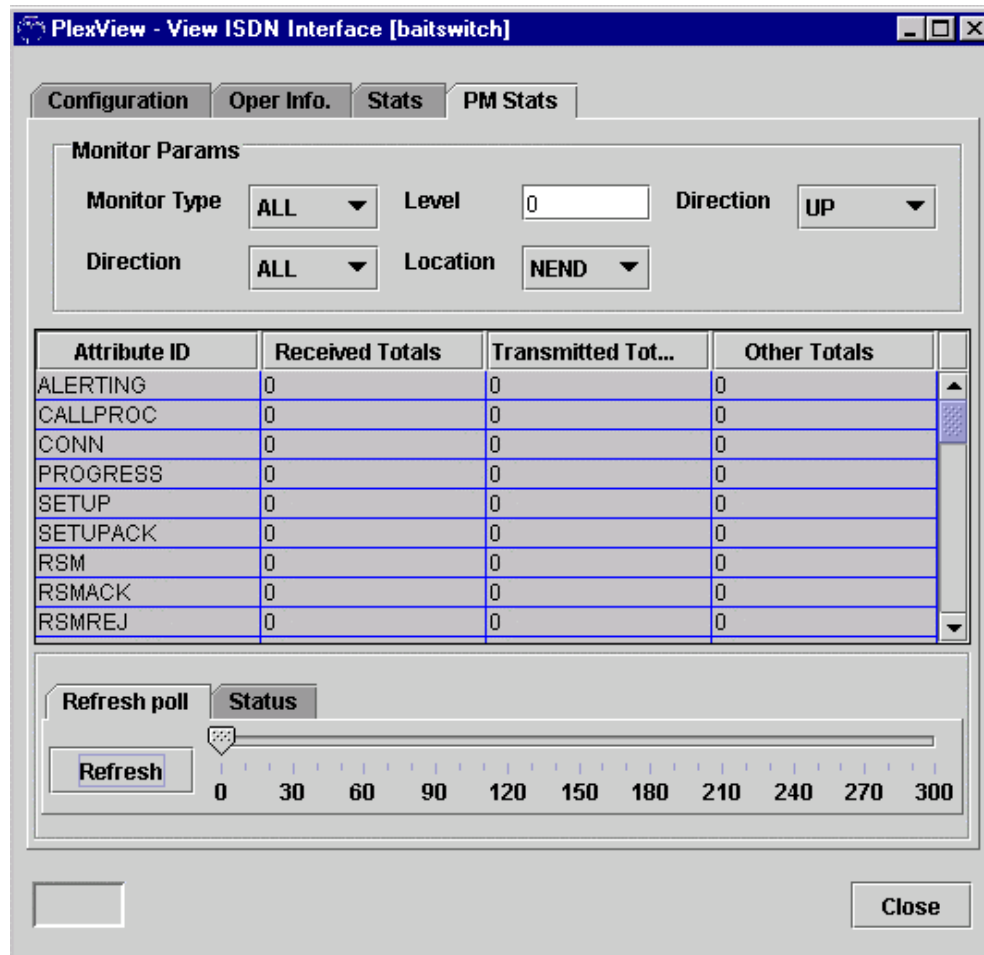


Figure 2. ISDN PM Stats

7. Refer to the “Traffic Statistics Reports” chapter and locate the ASCII CDR Report paragraph for the format. Refer to the “Release Causes” table in the appendix of the *Billing and Traffic Collection Guide*. Look at the release cause fields of the CDRs and look for causes that indicate problems.
8. Do the release cause codes indicate problems because of provisioning or lack of provisioning?
 - If **YES**, then continue to the next step.
 - If **NO**, then go to [Step 11](#).
9. Make the required changes to provisioning. Refer to the *Element Management System User Guide* for information.
10.  **YOU HAVE COMPLETED THIS PROCEDURE.**

11. Do release cause codes indicate problems because of external equipment?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 14](#).
12. Determine the cause and correct the problem.
13. Determine the cause of problems with tools available and correct the problem.
14. Do you want to initialize the registers?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 16](#).
15. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *ISDN* and then *Interfaces*. Right-click an interface and select *Init Register*. Make change and then click *Apply*. See [Figure 3](#).

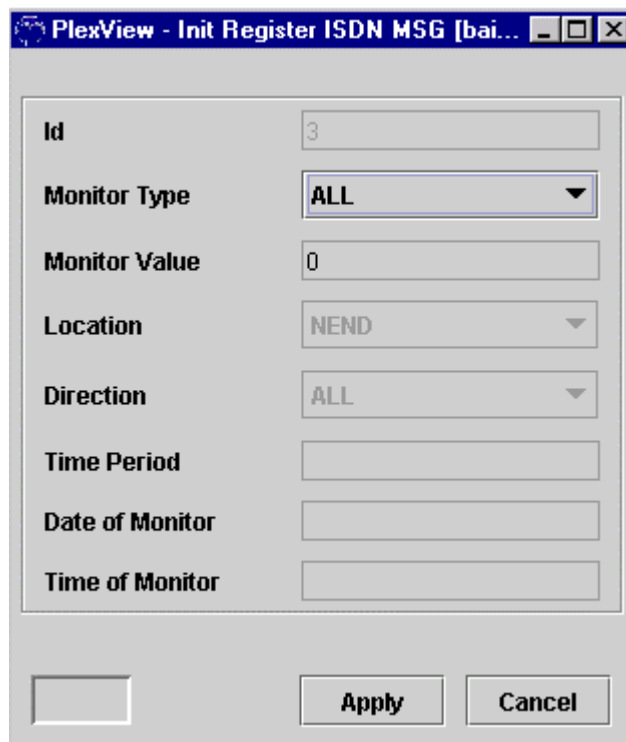


Figure 3. Initialize ISDN Message Registers

16. Do you want to check statistics of ISDN messages?
If **YES**, then go to [Step 2](#).
If **NO**, then continue to the next step.
17.  **YOU HAVE COMPLETED THIS PROCEDURE.**

18. The following information is required in order to complete this procedure:
- ISDN Interface Number
19. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica::telica;

20. Retrieve statistics for ISDN messages using the RTRV-STATS-ISDNMSG command. Reference **DLP-534** for detailed information for the command.

Command Syntax: RTRV-STATS-ISDNMSG:[TID]:<isdnIfNum>:
[CTAG];

Command Example: RTRV-STATS-ISDNMSG::14;;

Output Format:

```
SID DATE TIME
M CTAG COMPLD
  "<isdnIfNum>:ALRTGMSGTX=<alrtgMsgTx>,
CALLPROCMSGTX=<callProcMsgTx>,CNTMSGTX=<cntMsgTx>,
CNTACKMSGTTX=<cntAckMsgTx>,PROGMSGTTX=<progMsgTx>,
SETUPMSGTTX=<setupMsgTx>,SETUPACKMSGTX=<setupAckMsgTx>,
RESMSGTTX=<resMsgTx>,RESACKMSGTTX=<resAckMsgTx>,
RESREJMSGTTX=<resRejMsgTx>,SUSMSGTX=<susMsgTx>,
SUSPACKMSGTX=<susAckMsgTx>,SUSPREJMSGTX=<susRejMsgTx>,
USRINFOMSGTX=<usrInfoMsgTx>,HLDMSGTX=<hldMsgTx>,
HLDACKMSGTX=<hldAckMsgTx>,HLDREJMSGTX=<hldRejMsgTx>,
RTRVMSGTX=<rtrvMsgTx>,RTRVACKMSGTX=<rtrvAckMsgTx>,
RTRVREJMSGTX=<rtrvRejMsgTx>,DSCNTMSGTX=<dscntMsgTx>,
RELMSGTX=<relMsgTx>,RELCMPLMSGTX=<relCmplMsgTx>,
RESTRMSGTX=<restrtMsgTx>,
RESTRACKMSGTX=<restrtAckMsgTx>,SGMTMSGTX=<sgmtMsgTx>,
CNGSTNCTRLMSGTX=<cngstnCtrlMsgTx>,INFOMSGTX=<infoMsgTx>,
NTFYMSGTX=<ntfyMsgTx>,STATUSMSGTX=<statusMsgTx>,
STATUSENQMSGTX=<statusEnqMsgTx>,SRVMSGTX=<srvMsgTx>,
SRVACKMSGTX=<srvAckMsgTx>,FACMSGTX=<facMsgTx>,
FACACKMSGTX=<facAckMsgTx>,FACREJMSGTX=<facRejMsgTx>,
REGMSGTX=<regMsgTx>,ALRTGMSGRX=<alrtgMsgRx>,
CALLPROCMSGRX=<callProcMsgRx>,CNTMSGRX=<cntMsgRx>,
CNTACKMSGRX=<cntAckMsgRx>,PROGMSGRX=<progMsgRx>,
SETUPMSGRX=<setupMsgRx>,SETUPACKMSGRX=<setupAckMsgRx>,
RESMSGRX=<resMsgRx>,RESACKMSGRX=<resAckMsgRx>,
RESREJMSGRX=<resRejMsgRx>,SUSMSGRX=<susMsgRx>,
SUSPACKMSGRX=<susAckMsgRx>,SUSPREJMSGRX=<susRejMsgRx>,
USRINFOMSGRX=<usrInfoMsgRx>,HLDMSGRX=<hldMsgRx>,
HLDACKMSGRX=<hldAckMsgRx>,HLDREJMSGRX=<hldRejMsgRx>,"
```

```
RTRVMSGRX=<rtrvMsgRx>, RTRVACKMSGRX=<rtrvAckMsgRx>,
RTRVREJMSGRX=<rtrvRejMsgRx>, DSCNTMSGRX=<dscntMsgRx>,
RELMSGRX=<relMsgRx>, RELCMPLMSGRX=<relCmplMsgRx>,
RESTRMSGRX=<restrtMsgRx>,
RESTRACKMSGRX=<restrtAckMsgRx>, SGMTMSGRX=<sgmtMsgRx>,
CNGSTNCTRLMSGRX=<cngstnCtrlMsgRx>,
INFOMSGRX=<infoMsgRx>, NTFYMSGRX=<ntfyMsgRx>,
STATUSMSGRX=<statusMsgRx>, STATUSENQMSGRX=<statusEnqMsgRx>,
SRVMSGRX=<srvMsgRx>, SRVACKMSGRX=<srvAckMsgRx>,
FACMSGRX=<facMsgRx>, FACACKMSGRX=<facAckMsgRx>,
FACREJMSGRX=<facRejMsgRx>, REGMSGRX=<regMsgRx>,
CNTS=<cnts>, DISCNTS=<discnts>,
AVGNUMOPENCLS=<avgNumOpenCls>,
LSTTXCAUSECDE=<lstTxCauseCd>, LSTTSDIAGCDE=<lstTxDiagCd>,
LSTRXCAUSECDE=<lstRxCauseCd>, LSTRXDIAGCDE=<lstRxDiagCd>"
```

Output Example:

```
alpha3telica 2003-02-05 13:37:37
M 0 COMPLD
"12001:ALRTGMSGTX=0,CALLPROCMSGTX=0,CNTMSGTX=0,
CNTACKMSGTTX=2243002,PROGMSGTTX=0,SETUPMSGTTX=2246268,SETUP
ACKMSGTX=0,RESMSGTTX=0,RESACKMSGTTX=0,RESREJMSGTTX=0,SUSMSG
TX=0,SUSPACKMSGTX=0,SUSPREJMSGTX=0,USRINFOMSGTX=0,HLDMSGTX=
0,HLDACKMSGTX=0,HLDREJMSGTX=0,RTRVMSGTX=0,RTRVACKMSGTX=0,RT
RVREJMSGTX=0,DSCNTMSGTX=2242735,RELMSGTX=3932,RELCMPLMSGTX=
2243819,RESTRMSGTX=3264,RESTRACKMSGTX=0,SGMTMSGTX=0,CNGST
NCTRLMSGTX=0,INFOMSGTX=0,NTFYMSGTX=0,STATUSMSGTX=5,STATUSEN
QMSGTX=0,SRVMSGTX=1,SRVACKMSGTX=0,FACMSGTX=0,FACACKMSGTX=0,
FACREJMSGTX=0,REGMSGTX=0,ALRTGMSGRX=2243024,CALLPROCMSGRX=0
,CNTMSGRX=2243007,CNTACKMSGRX=0,PROGMSGRX=0,SETUPMSGRX=0,SE
TUPACKMSGRX=0,RESMSGRX=0,RESACKMSGRX=0,RESREJMSGRX=0,SUSMSG
RX=0,SUSPACKMSGRX=0,SUSPREJMSGRX=0,USRINFOMSGRX=0,HLDMSGRX=
0,HLDACKMSGRX=0,HLDREJMSGRX=0,RTRVMSGRX=0,RTRVACKMSGRX=0,RT
RVREJMSGRX=0,DSCNTMSGRX=0,RELMSGRX=2238656,RELCMPLMSGRX=826
,RESTRMSGRX=0,RESTRACKMSGRX=3258,SGMTMSGRX=0,CNGSTNCTRLMS
GRX=0,INFOMSGRX=0,NTFYMSGRX=0,STATUSMSGRX=0,STATUSENQMSGRX=
0,SRVMSGRX=0,SRVACKMSGRX=1,FACMSGRX=0,FACACKMSGRX=0,FACREJM
SGRX=0,REGMSGRX=0,CNTS=2243002,DISCNTS=2242735,AVGNUMOPENCL
S=284,LSTTXCAUSECDE=0,LSTTSDIAGCDE=0,LSTRXCAUSECDE=16,LSTRX
DIAGCDE=0"
/* RTRV-STATS-ISDNMSG */
```

21. Analyze the retrieved information. Are the numbers of the setup, connect, acknowledge and release messages fairly similar or is there a large disparity between them?

If **YES**, there is a similarity in numbers, then go to [Step 32](#).

If **NO**, numbers vary greatly, then continue to the next step.

22. Retrieve current and historical performance data for ISDN messages in the Plexus 9000 using the RTRV-PM-ISDNMSG command. Reference **DLP-534** for detailed information about the command.

Command Syntax: RTRV-PM-ISDNMSG:[TID]:<isdnIfNum>:
[CTAG]:[<montype>],[<monlev>],
[<locn>],[<dirn>];

Command Example: RTRV-PM-ISDNMSG::17003;

Output Example: (partial)

```
telica 2003-02-04 14:37:49
M 0 COMPLD
"12001:ALERTINGTX,0,0-UP,NEND,ALL"
. . . . .
":CONNTX,2264654,0-UP,NEND,ALL"
":SETUPTX,2267920,0-UP,NEND,ALL"
":DISCTX,2264242,0-UP,NEND,ALL"
":RELTX,3946,0-UP,NEND,ALL"
":RELCMPLTTX,2265312,0-UP,NEND,ALL"
":RSTTX,3274,0-UP,NEND,ALL"
":LASTINITTRMT,11261,0-UP,NEND,ALL"
":ALERTINGRX,2264676,0-UP,NEND,ALL"
":CONNRX,2264659,0-UP,NEND,ALL"
":RELRX,2260149,0-UP,NEND,ALL"
":RELCMPLTRX,830,0-UP,NEND,ALL"
":RSTACKRX,3268,0-UP,NEND,ALL"
":SERVACKRX,1,0-UP,NEND,ALL"
":LASTINITRCV,11261,0-UP,NEND,ALL"
":CONS,2264654,0-UP,NEND,ALL"
":DISCS,2264242,0-UP,NEND,ALL"
":AVECALLS,429,0-UP,NEND,ALL"
":LASTINITNA,11261,0-UP,NEND,ALL"
/* RTRV-PM-ISDNMSG */
```

23. Analyze the retrieved information. Are the numbers of the setup, connect, acknowledge and release messages fairly similar or is there a large disparity between them?

If **YES**, there is a similarity in numbers, then go to [Step 32](#).

If **NO**, numbers vary greatly, then continue to the next step.

24. Can you obtain an ASCII CDR report from the TCA running on a Sun server?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 31](#).



Note: If CDR generation is turned on, then an ASCII CDR file is created every 5 minutes and CDRs of the calls are written in these files. The naming convention for the file is:

<prefix>_STATS_CDR_ yyyymmddhhmm.txt

where **prefix** is the hostname; **yyyy** is the year; **mm** is the month within the year; **dd** is the day of the month; **hh** is the hour of the day; and **mm** is the minute of the hour.

25. Refer to the “Traffic Statistics Reports” chapter and locate the ASCII CDR Report paragraph for the format. Refer to the “Release Causes” table in the appendix of the *Billing and Traffic Collection Guide*. Look at the release cause fields of the CDRs and look for causes that indicate problems.
26. Do release cause codes indicate problems because of provisioning or lack of provisioning?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 29](#).
27. Make required changes to provisioning. Refer to the *Installation and Operation Manual* for information and procedures.
28.  **YOU HAVE COMPLETED THIS PROCEDURE.**
29. Do release cause codes indicate problems because of external equipment?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 32](#)
30. Determine the cause and correct the problems.
31. Determine the cause of problems with any tools available and correct the problem.
32. Do you want to initialize the registers?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 34](#).
33. Clear the counters for ISDN message statistics using the **INIT-REG-ISDNMSG** command. Reference **DLP-534** for detailed information about the command.

Command Syntax: **INIT-REG-ISDNMSG:[TID]:<isdnIfNum>:
[CTAG]::<montype>,[<monval>],[<locn>],
[<dirn>];**

Command Example: **INIT-REG-ISDNMSG::17003;**

34. Do you want to check other statistics of ISDN messages?

If **YES**, then go to [Step 20](#).

If **NO**, then continue to the next step.

35.  **YOU HAVE COMPLETED THIS PROCEDURE.**

NOTES:

MLP-703 - CHECK ISUP MESSAGE INFORMATION

SUMMARY: This procedure provides steps to retrieve ISUP message information to determine operational status of the Plexus 9000.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Are you going to be using the EMS or TL1 to check ISUP message information?
If using the **EMS**, then continue to the next step.
If using **TL1**, then go to [Step 18](#).
2. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *SS7* and then *Point Codes*. Right-click an interface and select *View, Stats* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).
3. Analyze the retrieved information. Are the numbers of IAM, ACM, ANM and release messages fairly similar or is there a large disparity between them?
If **YES**, there is a similarity in numbers, then go to [Step 6](#).
If **NO**, numbers vary greatly, then continue to the next step.
4. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *SS7* and then *Point Codes*. Right-click an interface and select *View, PM Stats* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 2](#).
5. Analyze the retrieved information. Are the numbers of IAM, ACM, ANM and release messages fairly similar or is there a large disparity between them??
If **YES**, there is a similarity in numbers, then continue to the next step.
If **NO**, numbers vary greatly, then go to [Step 14](#).

6. Can you obtain an ASCII CDR report from the traffic collection application (TCA) running on a Sun server?

If YES, then continue to the next step.

If NO, then go to [Step 13](#).

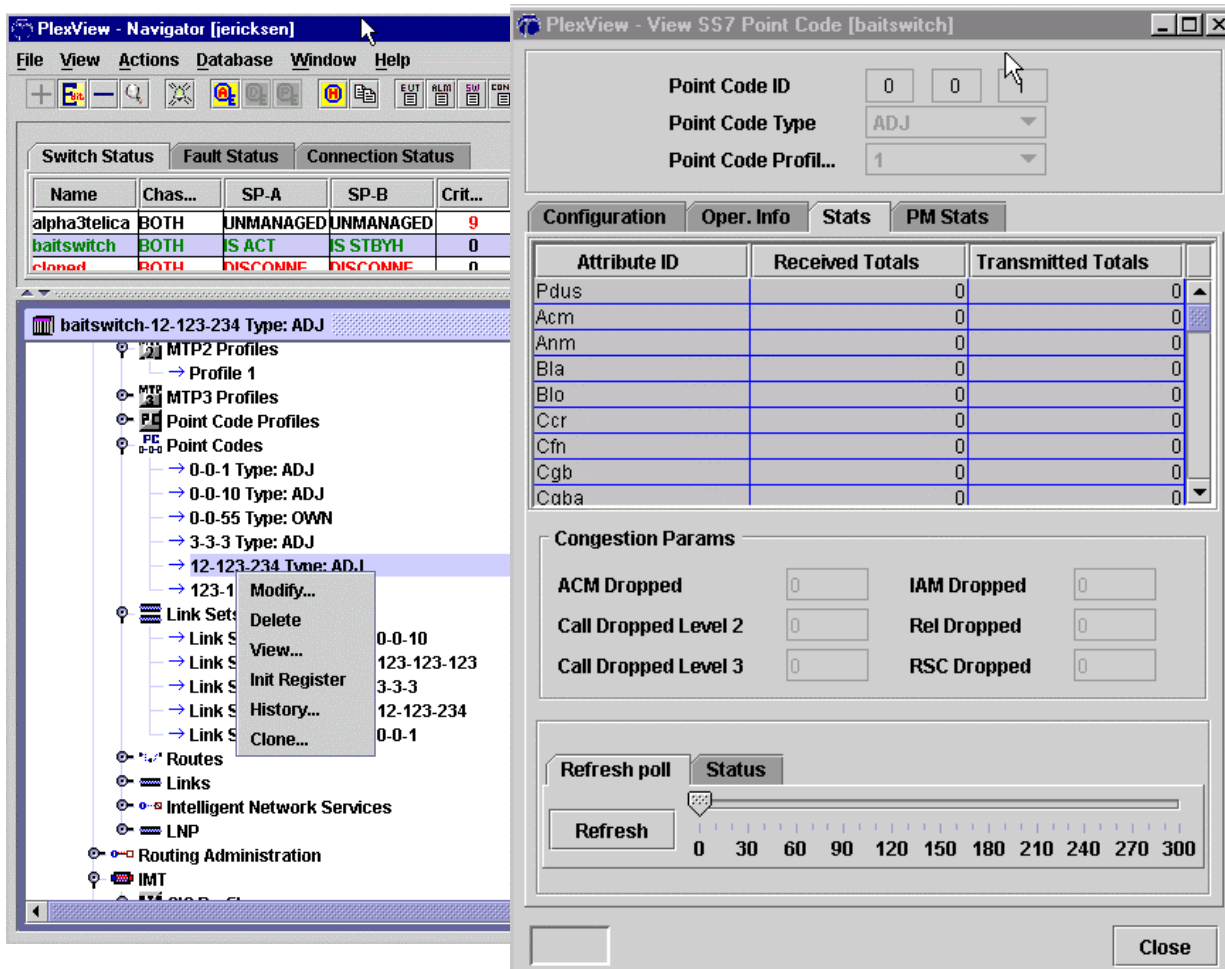


Figure 1. SS7 ISUP Messages Stats



Note: If CDR generation is turned on, then an ASCII CDR file is created every 5 minutes and CDRs of the calls are written in these files. The naming convention for the file is:

<prefix>_STATS_CDR_yyyymmddhhmm.txt

where **prefix** is the hostname; **yyyy** is the year; **mm** is the month within the year; **dd** is the day of the month; **hh** is the hour of the day; and **mm** is the minute of the hour.

7. Refer to the “Traffic Statistics Reports” chapter and locate the ASCII CDR Report paragraph for the format. Refer to the “Release Causes” table in the appendix of the *Billing and Traffic Collection Guide*. Look at the release cause fields of the CDRs and look for causes that indicate problems.

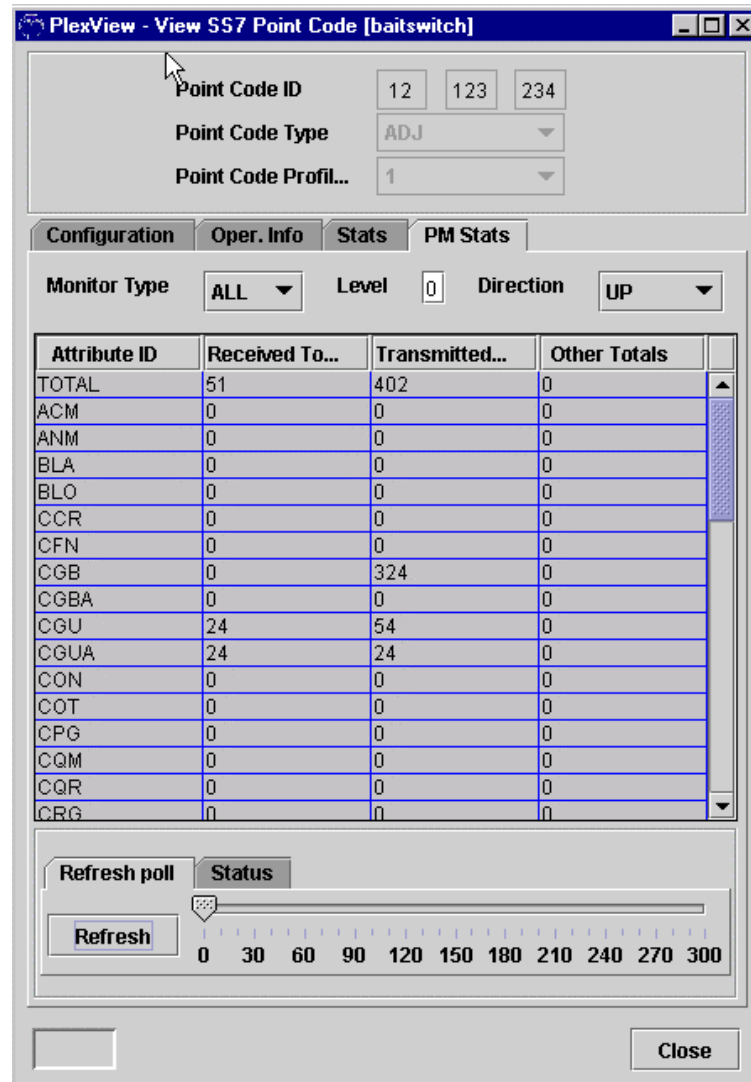
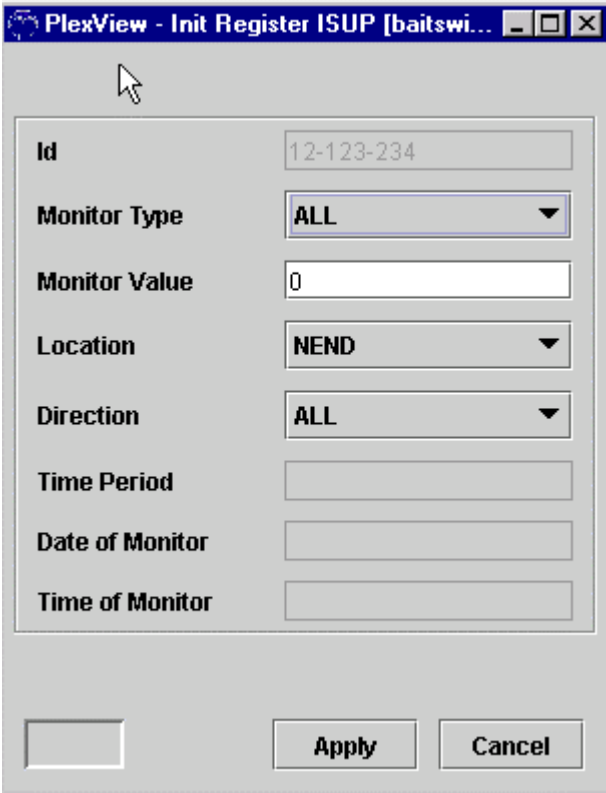


Figure 2. ISUP Messages PM Data

8. Do release cause codes indicate problems because of provisioning or lack of provisioning?
 If **YES**, then continue to the next step.
 If **NO**, then go to [Step 11](#).
9. Make the required changes to provisioning. Refer to the *Installation and Operation Manual* for information and procedures.

10.  **YOU HAVE COMPLETED THIS PROCEDURE.**
11. Do release cause codes indicate problems because of external equipment?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 14](#).
12. Determine the cause of the problem and correct.
13. Determine cause of problems with any tools available and correct.
14. Do you want to initialize the registers?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 17](#).
15. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *SS7* and then *Point Codes*. Right-click an interface and select *Init Register*. Make changes and then click *Apply*. See [Figure 3](#).



The image shows a Windows-style dialog box titled "PlexView - Init Register ISUP [baitswi...". The dialog has a light gray background and a blue title bar. It contains several input fields and dropdown menus. The fields are labeled: "Id" (text box with "12-123-234"), "Monitor Type" (dropdown menu with "ALL"), "Monitor Value" (text box with "0"), "Location" (dropdown menu with "NEND"), "Direction" (dropdown menu with "ALL"), "Time Period" (text box), "Date of Monitor" (text box), and "Time of Monitor" (text box). At the bottom of the dialog, there are three buttons: an empty button on the left, and "Apply" and "Cancel" buttons on the right.

Figure 3. Initialize PM Registers for ISUP Messages

16. Do you want to check ISUP message statistics?

If **YES**, then go to [Step 2](#).

If **NO**, then continue to the next step.

17.  **YOU HAVE COMPLETED THIS PROCEDURE.**

18. The following information is required in order to complete this procedure:

- SS7 Point Codes

19. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica::telica;

20. Retrieve statistics for ISUP messages using the RTRV-STATS-ISUPMSG command.
Reference **DLP-536** for detailed information for the command.

Command Syntax: RTRV-STATS-ISUPMSG:[TID]:<ss7Pc>:
[CTAG];

Output Example:

```
telica 2001-02-16 14:37:49
M 0 COMPLD
"001-001-001:PDUSTX=48911645,PDUSRX=32314615,ACMRX=0,
ANMRX=0,BLARX=0,BLORX=0,CCRXX=0,CFNRX=0,CGBRX=0,CGBARX=314,
CGURX=0,CGUARX=294,CONRX=0,COTRX=0,CPGRX=0,CQMRX=0,CQRRX=0,
CRGRX=0,FAARX=0,FACRX=0,FARMSGRX=0,FOTRX=0,FRJRX=0,GRARX=0,
GRSRX=0,IAMRX=16093278,IDRRX=0,INFRX=0,INRRX=0,IRSRX=0,
LOPRX=0,LPARX=0,NRMXX=0,OLMRX=0,PAMRX=0,RELX=16071924,
RESRX=0,RLCRX=148805,RSCRX=0,SAMRX=0,SGMRX=0,SUSRX=0,
UBARX=0,UBLRX=0,UCICRX=0,UPARX=0,UPTRX=0,USRRX=0,CRARX=0,
CRMXX=0,CVRRX=0,CVTRX=0,EXMRX=0,ACMTX=15940308,
ANMTX=15940130,BLATX=0,BLOTX=0,CCRTX=0,CFNTX=0,CGBTX=2744,
CGBATX=0,CGUTX=196,CGUATX=0,CONTX=0,COTTX=0,CPGTX=0,
CQMTX=0,CQRTX=0,CRGTX=0,FAATX=0,FACTX=0,FARMSGTX=0,FOTTX=0,
FRJTX=0,GRATX=0,GRSTX=0,IAMTX=0,IDRTX=0,INFTX=0,INRTX=0,
IRSTX=0,LOPTX=0,LPATX=0,NRMTX=0,OLMTX=0,PAMTX=0,
RELTX=814368,RESTX=0,RLCTX=16071924,RSCTX=141975,SAMTX=0,
SGMTX=0,SUSTX=0,UBATX=0,UBLTX=0,UCICTX=0,UPATX=0,UPTTX=0,
USRTX=0,CRATX=0,CRMTX=0,CVRTX=0,CVTTX=0,EXMTX=0,
ACMDROPPED=15940308,CALLDROPPED2=0,CALLDROPPED3=0,
IAMDROPPED=0,RELDROPPED=0,RSCDROPPED=0"
/* RTRV-STATS-ISUPMSG */
;
```

21. Analyze the retrieved information. Are the numbers of IAM,ACM, ANM and release messages fairly similar or is there a large disparity between them?

If **YES**, there is a similarity in numbers, then go to [Step 34](#).

If **NO**, numbers vary greatly, then continue to the next step.

22. Retrieve current and historical performance data for ISUP messages in the Plexus 9000 using the RTRV-PM-ISUPMSG command. Reference **DLP-536** for detailed information for the command.

Command Syntax: RTRV-PM-ISUPMSG:[TID]:<ss7pc>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>];

Command Example: RTRV-PM-ISUPMSG::8-8-8;

Output Example: (partial)

```
telica 2003-02-05 15:03:19
M 0 RTRV
"001-001-001:TOTALTX,48983724,0-UP,NEND,ALL"
"001-001-001:ACMTX,15964308,0-UP,NEND,ALL"
"001-001-001:ANMTX,15964130,0-UP,NEND,ALL"
"001-001-001:CFNTX,0,0-UP,NEND,ALL"
"001-001-001:CGBTX,2744,0-UP,NEND,ALL"
"001-001-001:CGUTX,196,0-UP,NEND,ALL"
"001-001-001:RLCTX,16095935,0-UP,NEND,ALL"
"001-001-001:RSCTX,141975,0-UP,NEND,ALL"
"001-001-001:LASTINITRMT,11297,0-UP,NEND,ALL"
"001-001-001:TOTALRX,32362762,0-UP,NEND,ALL"
"001-001-001:CGBARX,314,0-UP,NEND,ALL"
"001-001-001:CGUARX,294,0-UP,NEND,ALL"
"001-001-001:IAMRX,16117346,0-UP,NEND,ALL"
"001-001-001:RELTX,16095935,0-UP,NEND,ALL"
"001-001-001:RLCRX,148873,0-UP,NEND,ALL"
"001-001-001:LASTINITRCV,11297,0-UP,NEND,ALL"
"001-001-001:UPDTHRSHLD,50,0-UP,NEND,ALL"
"008-008-008:LASTINITRCV,5254,0-UP,NEND,ALL"
"008-008-008:UPDTHRSHLD,50,0-UP,NEND,ALL"
/* RTRV-PM-ISUPMSG */
;
```

23. Analyze the retrieved information. Are the numbers of IAM,ACM, ANM and release messages fairly similar or is there a large disparity between them??

If **YES**, they are fairly similar, then go to [Step 32](#).

If **NO**, then continue to the next step.

24. Can you obtain an ASCII CDR report from the traffic collection application (TCA) running on a Sun server?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 31](#).



Note: If CDR generation is turned on, then an ASCII CDR file is created every 5 minutes and CDRs of the calls are written in these files. The naming convention for the file is:

<prefix>_ STATS_CDR_ yyyymmddhhmm .txt

where **prefix** is the hostname; **yyyy** is the year; **mm** is the month within the year; **dd** is the day of the month; **hh** is the hour of the day; and **mm** is the minute of the hour.

25. Refer to the “Traffic Statistics Reports” chapter and locate the ASCII CDR Report paragraph for the format. Refer to the “Release Causes” table in the appendix of the *Billing and Traffic Collection Guide*. Look at the release cause fields of the CDRs and look for causes that indicate problems.
26. Do release cause codes indicate problems because of provisioning or lack of provisioning?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 29](#).

27. Make the required changes to provisioning. Refer to the *Installation and Operation Manual* for information and procedures.

28.  **YOU HAVE COMPLETED THIS PROCEDURE.**

29. Do release cause codes indicate problems because of external equipment?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 31](#).

30. Determine the cause and correct the problem.
31. Determine the cause of problems with any tools available and correct.
32. Do you want to initialize the registers?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 34](#).

33. Clear the counters for ISUP messages using the **INIT-REG-ISUPMSG** command. Reference **DLP-536** for detailed information for the command.

Command Syntax: **INIT-REG-ISUPMSG:[TID]:<ss7Pc>:[CTAG]:<montype>,[<monval>],[<locn>],[<dirn>;**

Command Example: **INIT-REG-ISUPMSG:::::8-8-8;**

34. Do you want to check other ISUP message statistics?

If **YES**, then go to [Step 20](#).

If **NO**, then continue to the next step.

35.  **YOU HAVE COMPLETED THIS PROCEDURE.**

MLP-704 - CHECK SS7 SIGNALING INFORMATION

SUMMARY: This procedure provides steps to retrieve status and performance monitored data for SS7 link sets, signaling links and routes as well as initializing their registers.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Ensure you have the following necessary information to complete this procedure:

- SS7 Point Codes
- Link set ID

2. Are you going to be using the EMS or TL1 to check SS7 signaling information?

If using the **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 47](#).

3. Select your task from the following and go to the indicated step.

- Retrieve status of a point code [Step 5](#)
- Retrieve status of a link set [Step 10](#)
- Retrieve PM data of a link set [Step 15](#)
- Clear the counters for statistics gathered from a link set [Step 20](#)
- Retrieve the status of a signaling link [Step 23](#)
- Retrieve PM data of a signaling link [Step 28](#)
- Clear the counters for statistics gathered from a signaling link .. [Step 33](#)
- Retrieve status for an SS7 route [Step 36](#)
- Retrieve PM data of an SS7 route [Step 41](#)
- Clear the counters for statistics gathered from a link set [Step 45](#).
- Finished, no other task in the above list..... continue to the next step.

4.



YOU HAVE COMPLETED THIS PROCEDURE.

5. Retrieve status of a point code. Double-click *SS7* and *Point Codes*. Right-click the desired point code, select *View* and then *Oper. Info*. Click *Refresh* near the bottom to get latest information. See [Figure 1](#).

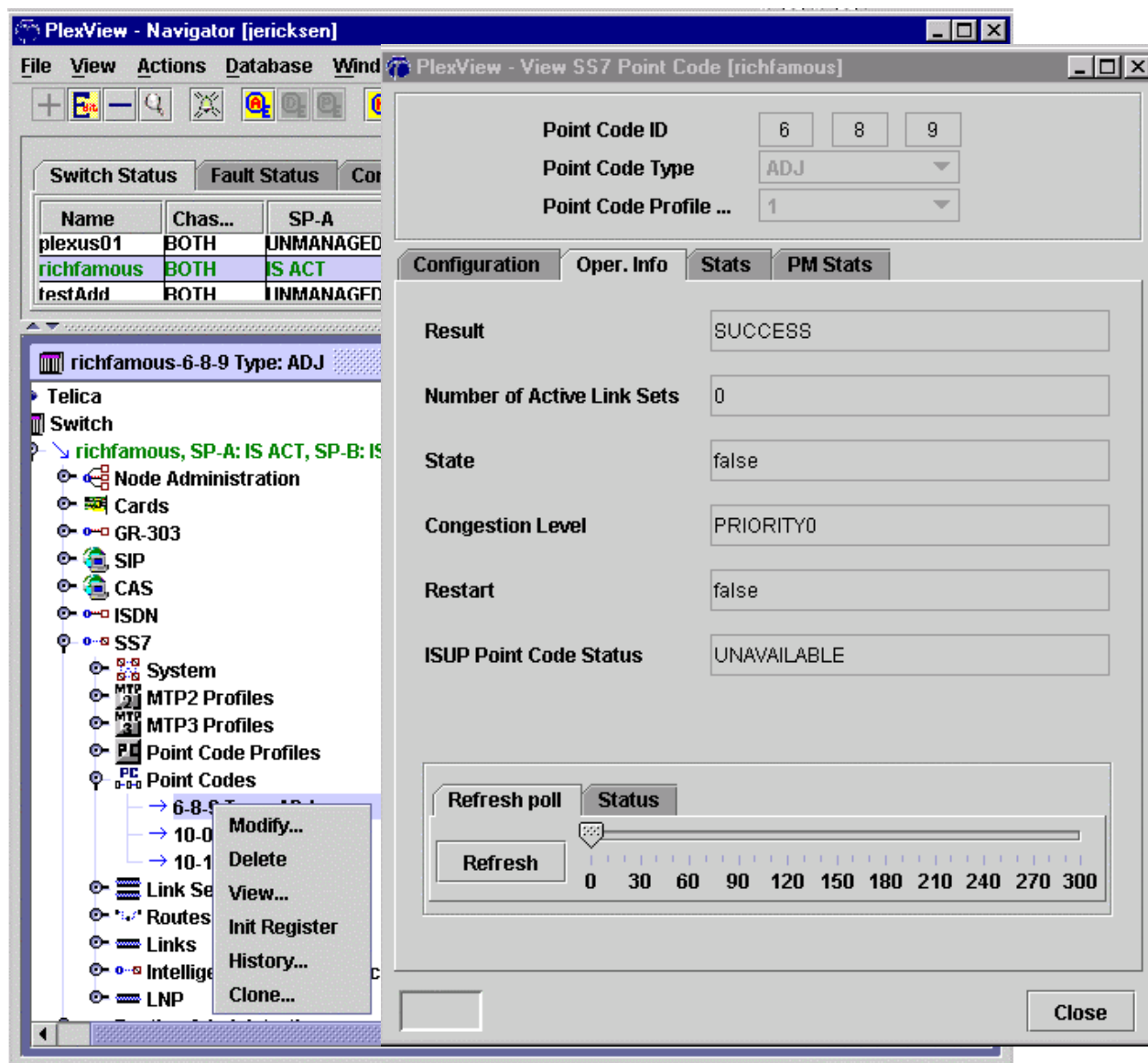


Figure 1. SS7 Operational Information

6. Analyze the retrieved information. Is the MTP layer 3 test on the point code (Result) equal to “success”, the point code (State) equal to “true” (active) and the congestion of PC (Congestion Level) equal to “PRIORITY0” (uncongested)?

 If **YES**, then go to [Step 8](#).
 If **NO**, then continue to the next step.
7. Determine why the PC test was unsuccessful or the PC is inactive or congested and correct.
8. Do you want to retrieve the status of another point code?

 If **YES**, then go to [Step 5](#).
 If **NO**, then continue to the next step.
9. Do you want to retrieve the status of a link set?

 If **YES**, then continue to the next step.
 If **NO**, then go to [Step 3](#).
10. Double-click the switch name in the switch status panel to select it for the main panel. Double-click SS7 and then *Link Sets*. Right-click a link set and select *View, Oper. Info* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 2](#).
11. Analyze the retrieved information. Are the MTP layer 3 tests on the link set (Result) equal to “success” and the current state of a link set (State) equal to “active”?

 If **YES**, then go to [Step 13](#).
 If **NO**, then continue to the next step.
12. Determine why the link set test was unsuccessful or the link is inactive and correct the problem.
13. Do you want to retrieve the status of another link set?

 If **YES**, then go to [Step 10](#).
 If **NO**, then continue to the next step.
14. Do you want to retrieve performance data of a link set?

 If **YES**, then continue to the next step.
 If **NO**, then go to [Step 3](#).

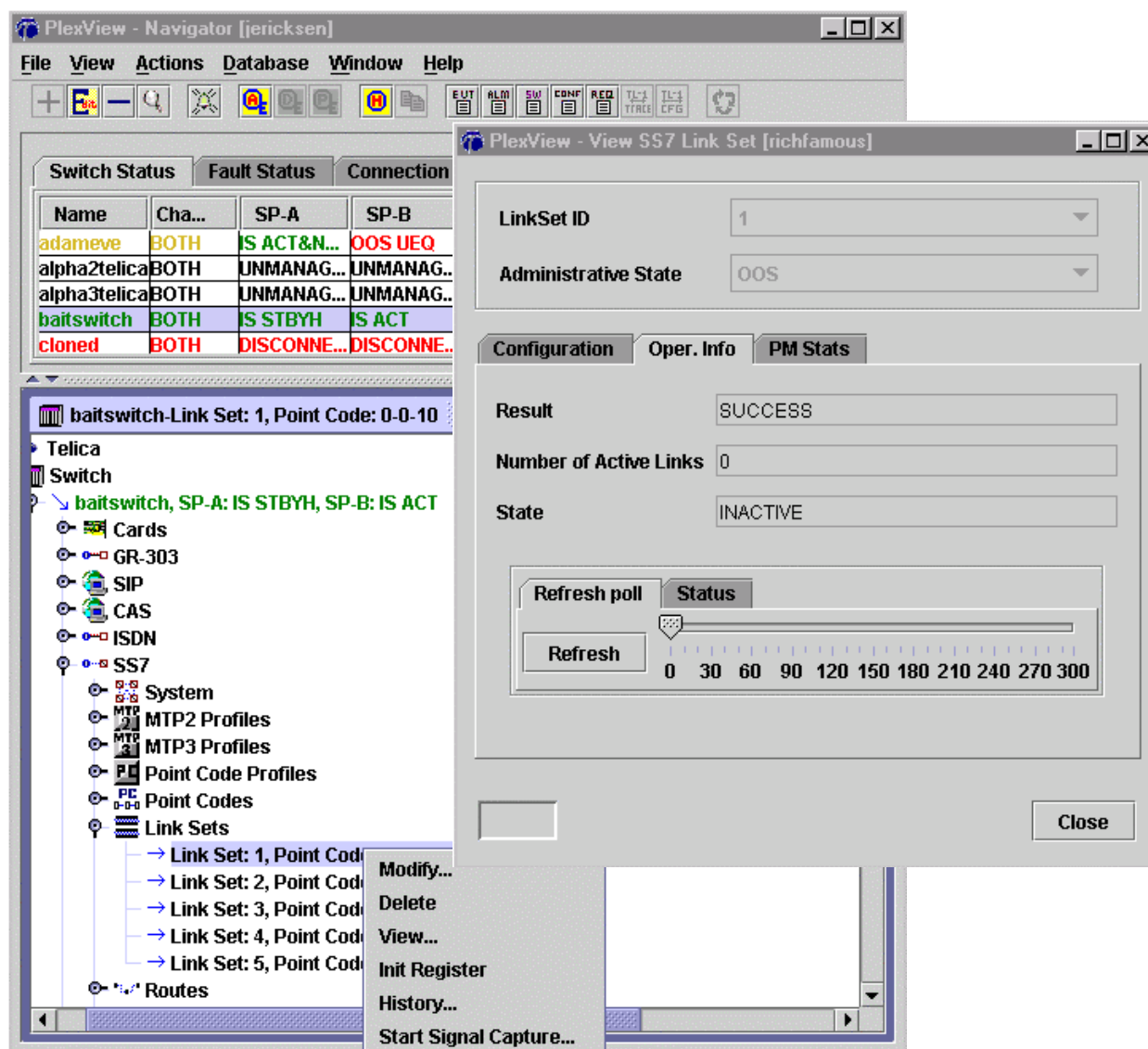
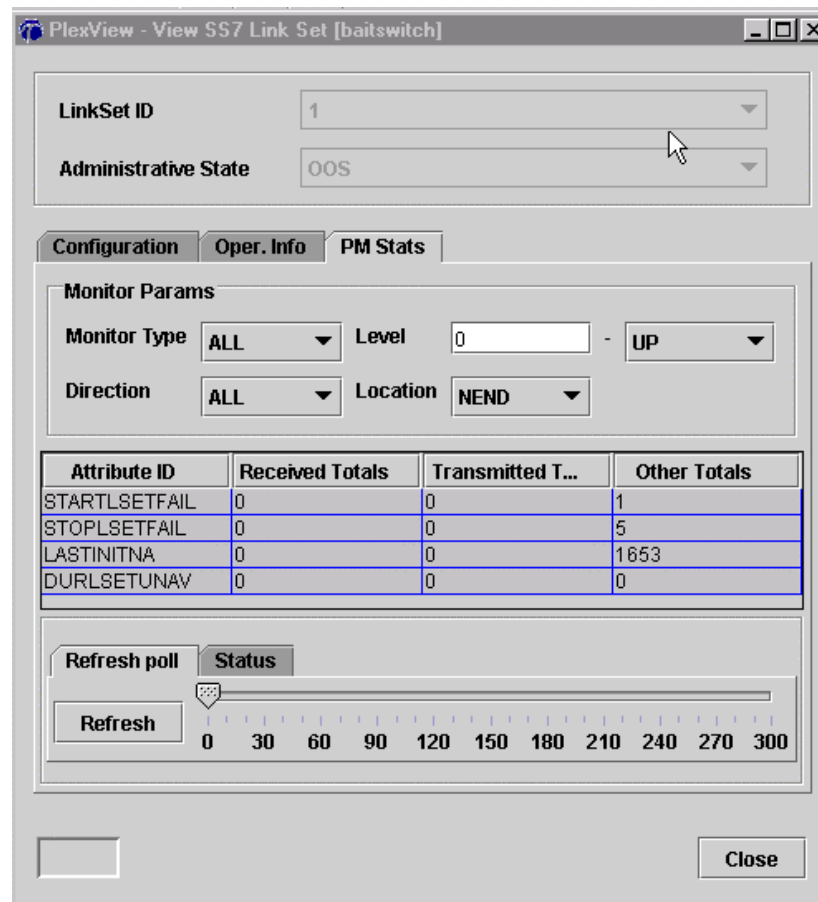


Figure 2. Status of Link Set

15. Retrieve current and historical performance data for a link set. Double-click SS7 and then *Link Sets*. Right-click a link set and select *View*, *PM Stats* and then click *Refresh* near the bottom of the panel for the latest information. See [Figure 3](#).
16. Analyze the retrieved information. Are there a large number of failures?
 If **YES**, then continue to the next step.
 If **NO**, then go to [Step 18](#).
17. Determine the cause for failures and correct.



PlexView - View SS7 Link Set [baitswitch]

LinkSet ID: 1

Administrative State: OOS

Configuration | Oper. Info | PM Stats

Monitor Params

Monitor Type: ALL Level: 0 - UP

Direction: ALL Location: NEND

Attribute ID	Received Totals	Transmitted T...	Other Totals
STARTLSETFAIL	0	0	1
STOPLSETFAIL	0	0	5
LASTINITNA	0	0	1653
DURLSETUNAV	0	0	0

Refresh poll Status

Refresh

0 30 60 90 120 150 180 210 240 270 300

Close

Figure 3. PM Status of Link Set

18. Do you want to retrieve PM data of another link set?
If **YES**, then go to [Step 15](#).
If **NO**, then continue to the next step.
19. Do you want to initialize registers for a link set?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
20. To clear the counters for statistics gathered from a link set, double-click SS7 and then *Link Sets*. Right-click a link set and select *Modify*, *PM Stats* and then click *Refresh* near the bottom of the panel for the latest information. Make changes and then click *Ok* or *Apply*. See [Figure 4](#).

PlexView - Modify SS7 Link Set [richfamous]

LinkSet ID: 2

Administrative State: OOS

Configuration | Oper. Info | PM Stats

Monitor Params

Monitor Type: ALL Level: 0 - UP

Direction: ALL Location: NEND

Attribute ID	Received T...	Transmitted...	Other Totals
STARTLSETFAIL	0	0	0
STOPLSETFAIL	0	0	0
LASTINITNA	0	0	4243
DURLSETUNAV	0	0	0

Refresh poll Status

Refresh

0 30 60 90 120 150 180 210 240 270 300

Ok Cancel Apply

Figure 4. Modify PM Status of Link Set

21. Do you want to initialize registers for a link set?
If **YES**, then go to [Step 20](#).
If **NO**, then continue to the next step.
22. Do you want to retrieve status of a signaling link?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
23. Retrieve status of signaling link. Double-click *SS7* and then *Link Sets*. Right-click a link set and select *View, PM Stats* and then click *Refresh* near the bottom of the panel for the latest information. See [Figure 5](#).

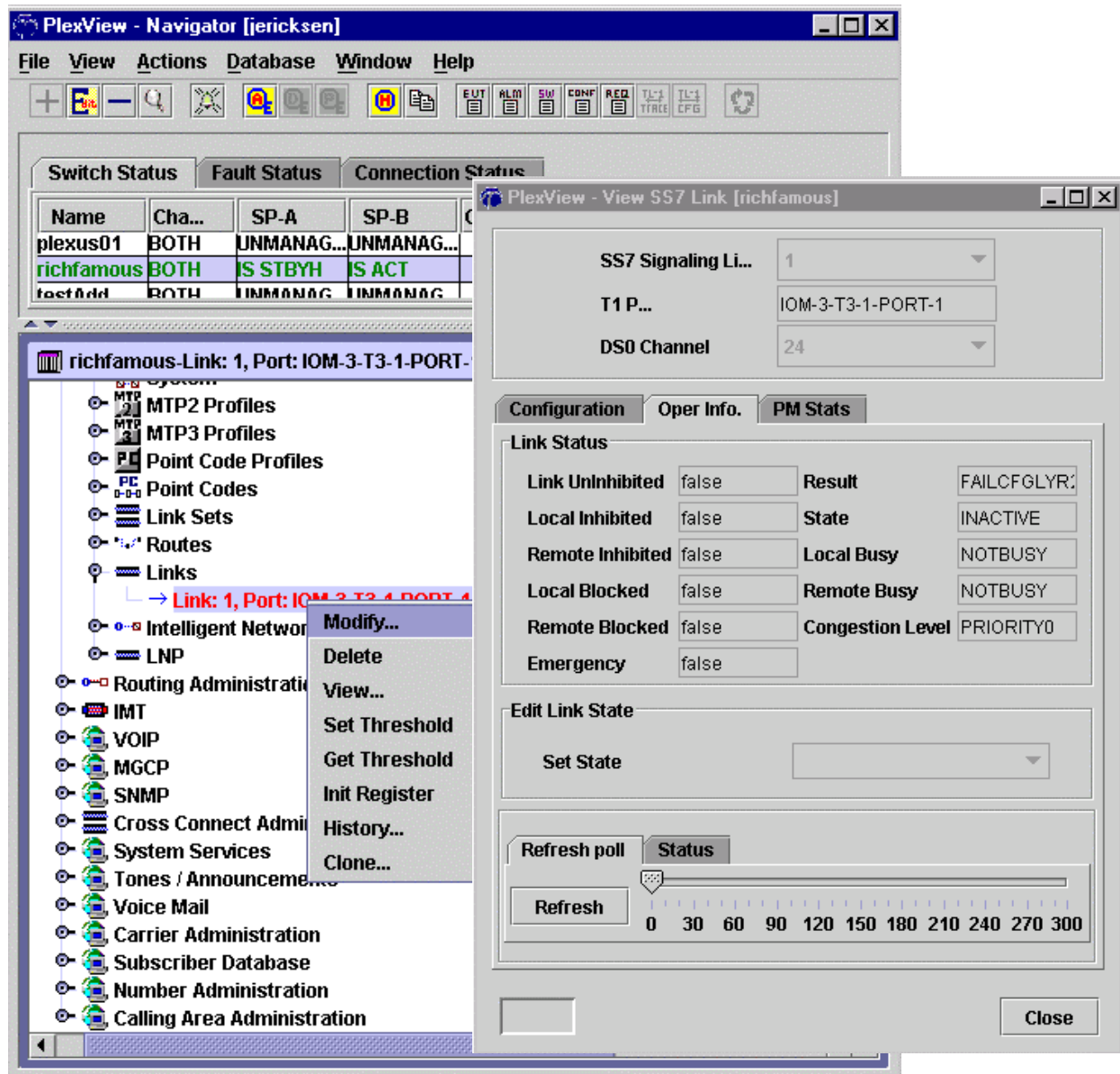


Figure 5. Status of Link

24. Analyze the retrieved information. Are the status request operation on the signaling link (Result) equal to “success”, the current state of a link set (State) equal to “active”, and the signaling links not blocked or inhibited?
 If YES, then go to [Step 26](#).
 If NO, then continue to the next step.
25. Determine why the signaling link test was unsuccessful, the signaling link is inactive or the signaling link is inhibited or blocked and correct the problem.

26. Do you want to check or retrieve the status for another signaling link?

If **YES**, then go to [Step 23](#).

If **NO**, then continue to the next step.



Note: The RTRV-PM-SLK and INIT-REG-SLK commands are not valid commands for some software versions. Type **RTRV-PM-SLK?** to determine if it is a valid command.

27. Do you want to retrieve the performance data of a signaling link?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

28. To retrieve current and historical performance data for a signaling link, double-click *SS7* and then *Link*. Right-click a link and select *Modify*, *PM Stats* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 6](#).

PlexView - View SS7 Link [richfamous]

SS7 Signaling Link ID: 1
T1 Port ID: IOM-3-T3-1-PORT-1
DSO Channel: 24

Configuration Oper Info PM Stats

Monitor Params

Monitor Type: ALL Level: 0 - UP
Direction: ALL Location: NEND

Attribute ID	Received Tot...	Transmitted T...	Direction NA
HWM1MINCFG	0	0	0
HWM5MINCFG	0	0	0
HWM15MINCFG	0	0	0

SLK SLK2 SLK3

Refresh poll Status

Refresh

0 30 60 90 120 150 180 210 240 270 300

Close

Figure 6. Modify PM Status of a Link

29. Analyze the retrieved information. Are there a large number of failures?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 31](#).
30. Determine the cause and correct.
31. Do you want to retrieve the performance data of another signaling link?
If **YES**, then go to [Step 28](#).
If **NO**, then continue to the next step.
32. Do you want to initialize registers for a signaling link?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
33. To clear or initialize the signaling link counters, double-click *SS7* and then *Link*. Right-click a link and select *Modify, PM Stats*. Make required changes and then click *Ok* or *Apply*. See [Figure 6](#).
34. Do you want to initialize signaling link registers for another signaling link?
If **YES**, then go to [Step 33](#).
If **NO**, then go to [Step 3](#).
35. Do you want to check or retrieve status for an SS7 route?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
36. Retrieve the status of an SS7 route. Double-click *SS7* and then *Routes*. Right-click a route and select *View, Oper. Info* and then click *Refresh* near the bottom of the panel for the latest information. See [Figure 7](#).
37. Analyze the retrieved information. Is the status request operation on the SS7 route (Result) equal to “success” and the current state of a route (State) equal to “allowed”?
If **YES**, then go to [Step 39](#).
If **NO**, then continue to the next step.
38. Determine why the SS7 route test was unsuccessful and the current state of the route is prohibited or restricted.
39. Do you want to check or retrieve the status for another SS7 route?
If **YES**, then go to [Step 36](#).
If **NO**, then continue to the next step.

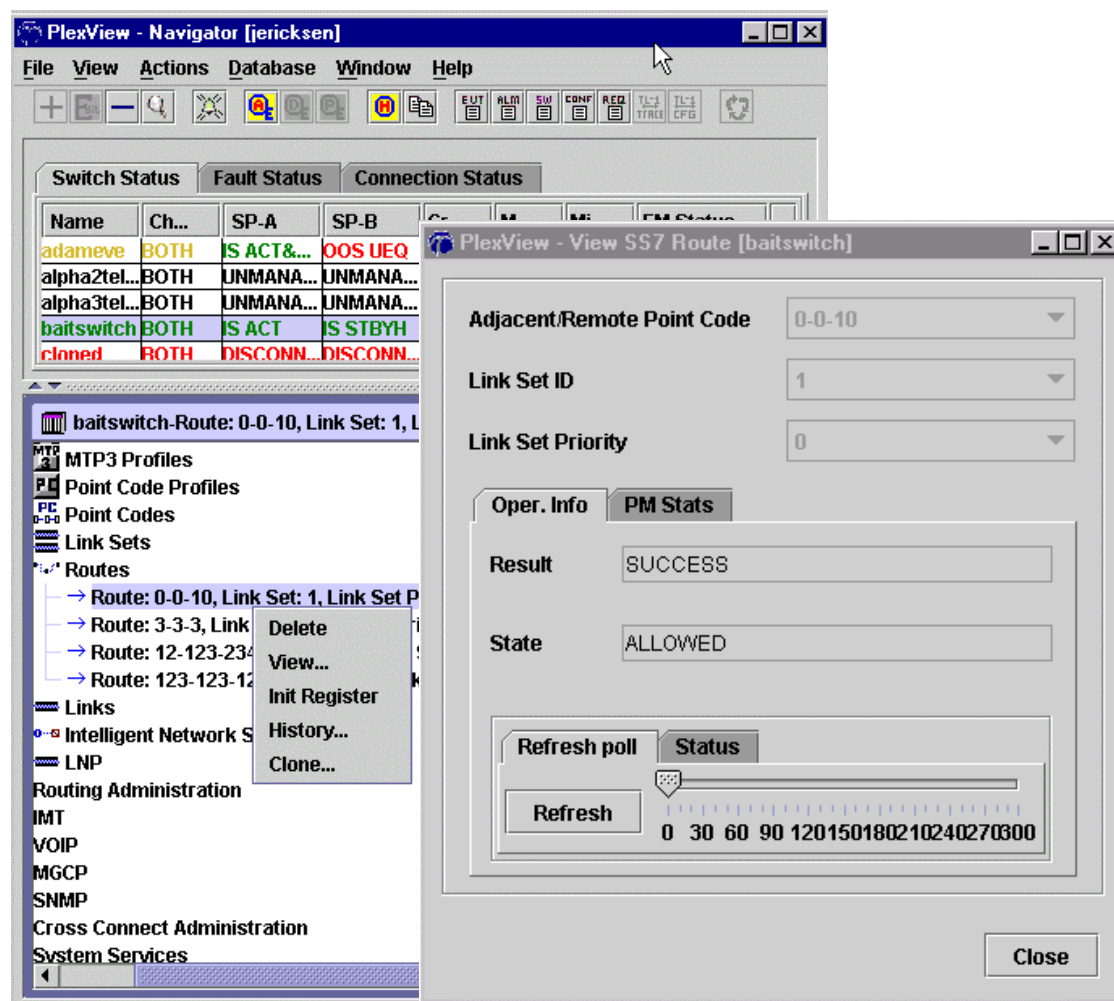


Figure 7. SS7 Route Status

40. Do you want to retrieve the performance data of an SS7 route?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
41. To retrieve current and historical performance data for an SS7 route, double-click SS7 and then *Routes*. Right-click a route and select *Modify*, *PM Stats* and then click *Refresh* near the bottom of the panel for the latest information. See [Figure 8](#).
42. Analyze the retrieved information. Are there a large number of failures?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 44](#).
43. Determine the cause and correct.

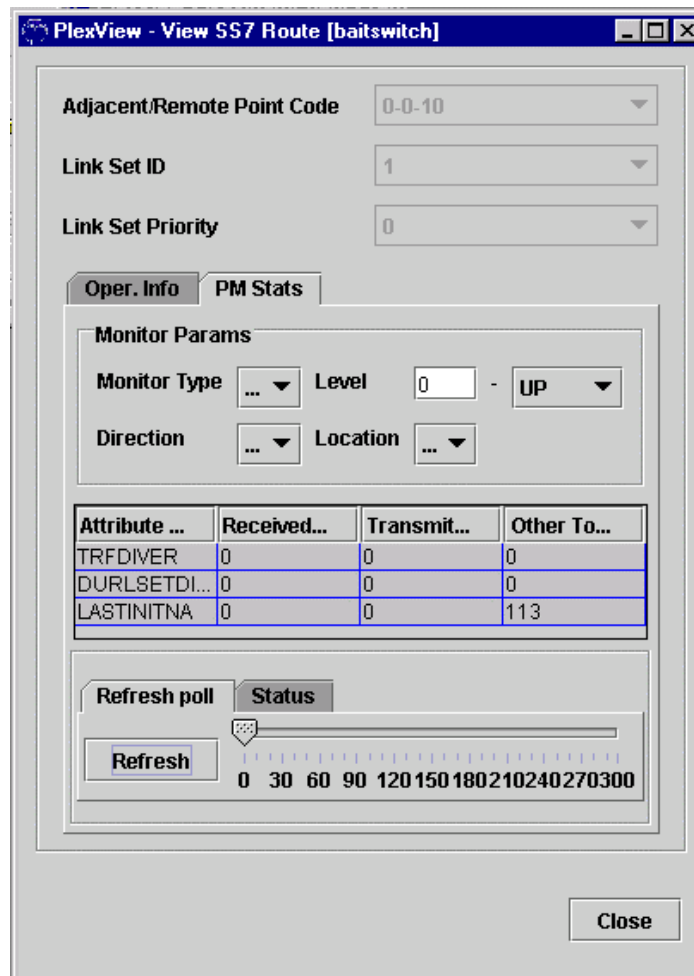


Figure 8. SS7 Route PM Data

44. Do you want to retrieve the performance data of another SS7 route?
If **YES**, then go to [Step 41](#).
If **NO**, then go to [Step 3](#).
45. To clear or initialize the SS7 route counters, double-click *SS7* and then *Routes*. Right-click a route and select *Init Register*. Make required changes and then click *Apply*. See [Figure 9](#).

The screenshot shows a Windows-style dialog box titled "PlexView - Init Register SS7 Route [baitswitch]". It contains several input fields and dropdown menus. The "Id" field is set to "0-0-10-1". The "Monitor Type" dropdown is set to "ALL". The "Monitor Value" field is set to "0". The "Location" dropdown is set to "NEND". The "Direction" dropdown is set to "ALL". There are empty fields for "Time Period", "Date of Monitor", and "Time of Monitor". At the bottom, there are "Apply" and "Cancel" buttons.

Figure 9. Initialization of SS7 Route Registers

46. Do you want to initialize registers for another SS7 route?
- If **YES**, then go to [Step 45](#).
If **NO**, then go to [Step 3](#).
47. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.
- Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;
Command Example: ACT-USER::telica::telica;
48. Select your task from the following and go to the indicated step.
- Retrieve status of point code [Step 50](#)
 - Retrieve PM data for a destination point code [Step 55](#)
 - Initialize DPC registers [Step 60](#)
 - Retrieve status of a link set [Step 63](#)
 - Retrieve PM data of a link set [Step 68](#)
 - Clear the counters for statistics gathered from a link set [Step 73](#)
 - Retrieve status of a signaling link [Step 76](#)
 - Retrieve PM data of a signaling link [Step 81](#)

- Clear the counters for statistics gathered from a signaling link .. [Step 86](#)
- Retrieve status for a SS7 route [Step 89](#)
- Retrieve PM data of an SS7 route [Step 94](#)
- Clear the counters for statistics gathered from a link set [Step 98](#)
- Finished, no other task in the above list..... continue to the next step.

49. **YOU HAVE COMPLETED THIS PROCEDURE.**

50. Retrieve the status of a point code using the RTRV-STATUS-PC command. Reference **DLP-641** for detailed information for the command.

Command Syntax: RTRV-STATUS-PC : [TID] : [<pcId>] : [CTAG] ;

Command Example: RTRV-STATUS-PC : : 2 - 2 - 2 ;

Output Example:

```
telica 2001-02-16 14:37:49
M 0 COMPLD
"002-002-002:SS7PCSTARSLT=SUCCESS,
SS7PCSTANMBACTVLNKSETS=1, SS7PCSTASTATE=Y,
SS7PCSTACONG=PRIORITY0, SS7PCSTARSTFLG=N,
SS7PCSTAISUPSTAT=AVAILABLE"
/* RTRV-STATUS-PC */
;
```

51. Analyze the retrieved information. Are the MTP layer 3 tests on the point code (SS7PCSTARSLT) equal to “success”, the point code (SS7PCSTASTATE) equal to “Y” (active) and the congestion of PC (SS7PCSTACONG) equal to “PRIORITY0” (uncongested)?

If **YES**, then go to [Step 53](#).

If **NO**, then continue to the next step.

52. Determine why the PC test was unsuccessful or the PC is inactive or congested and correct the problem.

53. Do you want to retrieve the status of another point code?

If **YES**, then go to [Step 50](#).

If **NO**, then continue to the next step.

54. Do you want to retrieve the performance data of a destination point code?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

55. Retrieve current and historical performance data for a destination point code using the RTRV-PM-DPC command. Reference **DLP-641** for detailed information for the command.

Command Syntax: RTRV-PM-DPC:[TID]:<ss7Pc>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>]

Command Example: RTRV-PM-DPC::1-1-1;

Output Example:

```
telica 2003-02-13 14:30:37
M 0 COMPLD
"001-001-001:RTETSTTX,0,0-UP,NEND,ALL"
"001-001-001:RTECONGTSTTX,0,0-UP,NEND,ALL"
"001-001-001:TXPROHIBTX,0,0-UP,NEND,ALL"
"001-001-001:TXRESTRICTTX,0,0-UP,NEND,ALL"
"001-001-001:TXALLWTX,0,0-UP,NEND,ALL"
"001-001-001:SIFOCTPRTEX,156184279,0-UP,NEND,ALL"
"001-001-001:SI0OCTPRTEX,13780196,0-UP,NEND,ALL"
"001-001-001:LASTINITRMT,5705,0-UP,NEND,ALL"
"001-001-001:RTETSTRX,0,0-UP,NEND,ALL"
"001-001-001:RTECONGTSTRX,0,0-UP,NEND,ALL"
"001-001-001:TXPROHIBRX,0,0-UP,NEND,ALL"
"001-001-001:TXRESTRICTRX,0,0-UP,NEND,ALL"
"001-001-001:TXALLWRX,0,0-UP,NEND,ALL"
"001-001-001:LASTINITRCV,5705,0-UP,NEND,ALL"
"001-001-001:RTEUNAV,5,0-UP,NEND,ALL"
"001-001-001:DURRTEUNAV,12,0-UP,NEND,ALL"
"001-001-001:LASTINITNA,5705,0-UP,NEND,ALL"
/* RTRV-PM-DPC */
;
```

56. Analyze the retrieved information. Are there a large number of routes unavailable (DURRTEUNAV) or (RTEUNAV) messages or congestion messages (RTECONGTST)?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 58](#).

57. Determine the cause and correct.

58. Do you want to retrieve the performance data of another destination point code?

If **YES**, then go to [Step 55](#).

If **NO**, then continue to the next step.

59. Do you want to initialize or clear DPC registers?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

60. Clear or initialize the destination point code counters using the INIT-REG-DPC command.

Command Syntax: INIT-REG-DPC:[TID]:<ss7Pc>:[CTAG]::
<montype>,[<monval>],[<locn>],[<dirn>];

Command Example: INIT-REG-DPC::1-1-1;

61. Do you want to initialize registers for another destination point code?

If **YES**, then go to [Step 60](#).

If **NO**, then continue to the next step.

62. Do you want to retrieve the status of a link set?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

63. Retrieve the status of a link set using the RTRV-STATUS-LSET command. Reference **DLP-596** for detailed information for the command.

Command Syntax: RTRV-STATUS-LSET:[TID]:<ss7LsetStaId>:
[CTAG];

Command Example: RTRV-STATUS-LSET::1-1-1-1;

Output Example:

```
telica 2003-02-08 12:27:42
M 0 COMPLD
"1-1-1-1:LSETSTARSLT=SUCCESS,
SS7LSETSTANMBACTLNKS=2, SS7LSETSTASTATE=ACTIVE"
/* RTRV-STATUS-LSET */
```

64. Analyze the retrieved information. Are the MTP layer 3 tests on the link set (LSETSTARSLT) equal to “success” and the current state of a link set (SS7LSETSTASTATE) equal to “active”?

If **YES**, then go to [Step 66](#).

If **NO**, then continue to the next step.

65. Determine why the link set test was unsuccessful or the link is inactive and correct the problem.

66. Do you want to retrieve the status of another link set?

If **YES**, then go to [Step 63](#).

If **NO**, then continue to the next step.

67. Do you want to retrieve performance data of a link set?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

68. Retrieve current and historical performance data for a link set using the RTRV-PM-LSET command. Reference **DLP-596** for detailed information for the command.

Command Syntax: RTRV-PM-LSET:[TID]:<lsetId>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>;

Command Example: RTRV-PM-lset::1-1-1;

Output Example:

```
telica 2003-02-10 09:33:09
M 0 COMPLD
"1:STARTLSETFAIL,5,0-UP,NEND,ALL"
"1:STOPLSETFAIL,5,0-UP,NEND,ALL"
"1:LASTINITNA,5762,0-UP,NEND,ALL"
"1:DURLSETUNAV,12,0-UP,NEND,ALL"
/* RTRV-PM-LSET */
;
```

69. Analyze the retrieved information. Are there a large number of failures?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 71](#).

70. Determine the cause for failures and correct.

71. Do you want to retrieve PM data of another link set?

If **YES**, then go to [Step 68](#)

If **NO**, then continue to the next step.

72. Do you want to initialize registers for a link set?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

73. Clear the counters for statistics gathered from a link set using the INIT-REG-LSET command.

Command Syntax: INIT-REG-LSET:[TID]:<lsetId>:[CTAG]::
<montype>,[<monval>],[<locn>],[<dirn>;

Command Example: INIT-REG-LSET::1:::ALL;

74. Do you want to initialize registers for a link set?

If **YES**, then go to [Step 73](#).
If **NO**, then continue to the next step.

75. Do you want to retrieve the status of a signaling link?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 48](#).

76. Retrieve the status of signaling link using the RTRV-STATUS-SLK command.
Reference
DLP-635 for detailed information for the command.

Command Syntax: RTRV-STATUS-SLK: [TID]:<ss7LnkId>:
[CTAG];

Command Example: RTRV-STATUS-SLK::1;

Output Format:

```
leftright 2003-02-08 12:37:49
M 0 COMPLD
"1:SS7LNKSTARSLT=SUCCESS, LOCALBUSY=NOTBUSY,
REMOTEBUSY=NOTBUSY, SS7LNKSTASTATE=ACTIVE,
SS7LNKSTALOCBLKD=N, SS7LNKSTAREMBLKD=N,
SS7LNKSTALOCINHBT=N, SS7LNKSTARMTINHBT=N,
SS7LNKSTAUNINHBT=N, SS7LNKSTACONG=PRIORITY0,
SS7LNKSTAEMRG=N"
/* RTRV-STATUS-SLK */
;
```

77. Analyze the retrieved information. Are the status request operations on the signaling link (SS7LNKSTARSLT) equal to “success”, the current state of a link set (SS7LNKSTASTATE) equal to “active”, and the signaling links not blocked or inhibited?

If **YES**, then go to [Step 79](#).
If **NO**, then continue to the next step.

78. Determine why the signaling link test was unsuccessful, the signaling link is inactive or the signaling link is inhibited or blocked and correct.

79. Do you want to check or retrieve status for another signaling link?

If **YES**, then go to [Step 76](#).
If **NO**, then continue to the next step.



Note: The RTRV-PM-SLK and INIT-REG-SLK commands are not valid commands for some software versions. Type **RTRV-PM-SLK?** to determine if it is a valid command.

80. Do you want to retrieve the performance data of a signaling link?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

81. Retrieve current and historical performance data for a signaling link using the RTRV-PM-SLK command. Reference **DLP-635** for detailed information for the command.

Command Syntax: RTRV-PM-SLK:[TID]:<ss7LnkId>:[CTAG]::
[<montype>];

Command Example: RTRV-PM-SLK::1;

Output Example:

```
telica 2003-02-10 09:44:08
M 0 COMPLD
  "1:HWM1MINCFG,0"
  "1:HWM5MINCFG,0"
  "1:HWM15MINCFG,0"
/* RTRV-PM-SLK */
;
```

82. Analyze the retrieved information. Are there a large number of failures?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 84](#).

83. Determine the cause and correct.

84. Do you want to retrieve the performance data of another signaling link?

If **YES**, then go to [Step 81](#).

If **NO**, then continue to the next step.

85. Do you want to initialize registers for a signaling link?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

86. Clear or initialize the signaling link counters using the INIT-REG-SLK command.

Command Syntax: INIT-REG-SLK:[TID]:<ss7LnkId>:[CTAG]::
<montype>,<monval>;

Command Example: INIT-REG-SLK::1;

87. Do you want to initialize signaling link registers for another signaling link?

If **YES**, then go to [Step 86](#).

If **NO**, then go to [Step 48](#).

88. Do you want to check or retrieve the status for an SS7 route?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

89. Retrieve the status of SS7 routes using the RTRV-STATUS-ROUTE^{SS7} command.
Reference **DLP-640** for detailed information for the command.

Command Syntax: RTRV-STATUS-ROUTE^{SS7}:[TID]:
[<routeSs7Aid>]:[CTAG];

Command Example: RTRV-STATUS-ROUTE^{SS7};

Output Example:

```
Telica 2003-02-08 13:33:01
M 0 COMPLD
"1-1-1-1:ROUTESTARSLT=SUCCESS,
SS7ROUTESTASTATE=ALLOWED"
/* RTRV-STATUS-ROUTESS7 */
;
```

90. Analyze the retrieved information. Is the status request operation on the SS7 route (ROUTESTARSLT) equal to “success” and the current state of a route (SS7ROUTESTASTATE) equal to “allowed”?

If **YES**, then go to [Step 92](#).

If **NO**, then continue to the next step.

91. Determine why the SS7 route test was unsuccessful and the current state of the route is prohibited or restricted.

92. Do you want to check or retrieve status for another SS7 route?

If **YES**, then go to [Step 89](#).

If **NO**, then continue to the next step.

93. Do you want to retrieve the performance data of an SS7 route?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 48](#).

94. Retrieve current and historical performance data for an SS7 route using the RTRV-PM-SS7ROUTE command. Reference **DLP-640** for detailed information for the command.

Command Syntax: RTRV-PM-SS7ROUTE:[TID]:<routeSs7>:
[CTAG]:[:<montype>],[<monlev>],
[<locn>],[<dirn>];

Command Example: RTRV-PM-SS7ROUTE::<routeSs7>;

Output Example:

```
telica 2003-02-10 10:19:54
M 0 COMPLD
  "1-1-1-1:TRFDIVER,0,0-UP,NEND,ALL"
  "1-1-1-1:DURLSETDIVER,0,0-UP,NEND,ALL"
  "1-1-1-1:LASTINITNA,5809,0-UP,NEND,ALL"
/* RTRV-PM-SS7ROUTE */
;
```

95. Analyze the retrieved information. Are there a large number of failures?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 97](#).

96. Determine the cause and correct.

97. Do you want to retrieve the performance data of another SS7 route?

If **YES**, then go to [Step 94](#).

If **NO**, then go to [Step 48](#).

98. Clear or initialize the SS7 route counters using the INIT-REG-SS7ROUTE command.

Command Syntax: INIT-REG-SS7ROUTE:[TID]:<routeSs7>:
[CTAG]::<montype>,<monval>,<locn>,<dirn>;

Command Example: INIT-REG-SS7ROUTE::1-1-1-1;

99. Do you want to initialize registers for another SS7 route?

If **YES**, then go to [Step 98](#).

If **NO**, then go to [Step 48](#).

MLP-705 - CHECK PM DATA FOR SIGNALING LINK LAYER 2/3

SUMMARY: This procedure provides steps to retrieve performance monitored data for signaling link layer 2 and 3 and MTP3 signaling points as well as initializing their registers.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Ensure you have the following necessary information to complete this procedure:
 - SS7 Point Codes
2. Are you going to be using the EMS or TL1 to check PM data for signaling link layer 2 or 3?

If using **EMS**, then continue to the next step.
If using **TL1**, then go to [Step 27](#).

3. Select your task from the following and go to the indicated step.
 - Retrieve PM data for signaling link layer 2 [Step 5](#)
 - Initialize signaling link layer 2 registers [Step 10](#)
 - Retrieve PM data for signaling link layer 3 [Step 13](#)
 - Clear the counters data for signaling link layer 2..... [Step 18](#)
 - Retrieve PM data for MTP3 signaling points..... [Step 21](#)
 - Clear the counters for MTP3 signaling points [Step 26](#)
 - Finished, no other task in the above list..... continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve current and historical performance data for signaling link layer 2 by double-clicking the switch, *SS7* and *Links*. Right-click the *link*, click *View* and then select the *PM Stats* tab at the top and the *SLK2* tab toward the bottom. See [Figure 1](#).

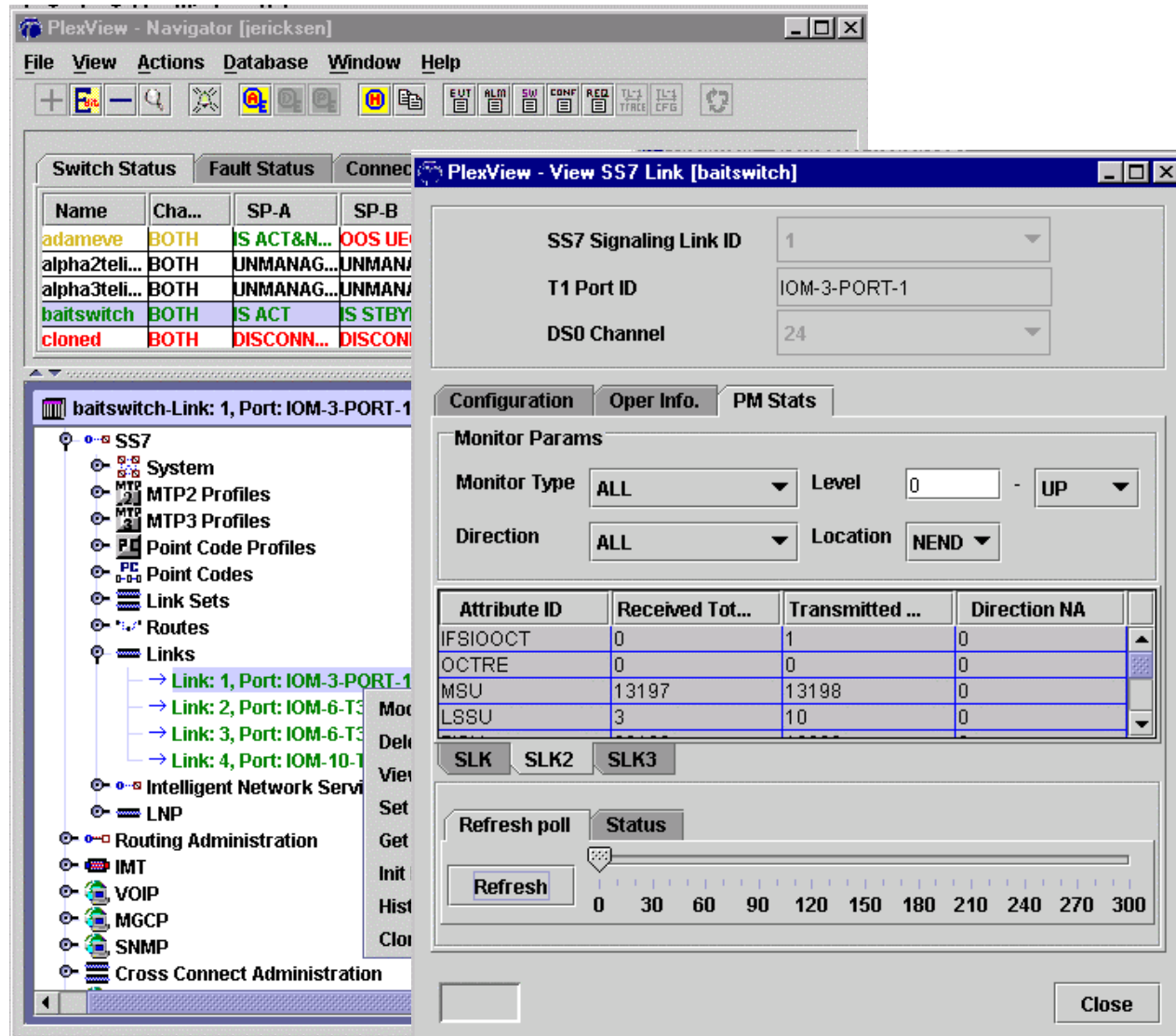


Figure 1. Signaling Link Layer 2 PM Status

6. Analyze the retrieved information. Are there a large number of minutes that the link has been congested (DURLNKLOCCONG) or number of times a link has failed (LNKFAIL*)? Reference **DLP-635** for detailed information for the command.

If **YES**, then go to [Step 8](#).

If **NO**, then continue to the next step.

7. Determine why the link has been congested or failed and correct the problem.

8. Do you want to retrieve the PM data for another signaling link layer 2?
If **YES**, then go to [Step 5](#).
If **NO**, then continue to the next step.
9. Do you want to initialize or clear registers for signaling link layer 2?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
10. Clear or initialize the signaling link layer 2 counters by double-clicking the switch, *SS7* and *Links*. Right-click the *link*, click *Modify* and then select the *PM Stats* tab at the top and the *SLK2* tab toward the bottom. Make desired changes and then click *Ok* or *Apply*. See [Figure 1](#).
11. Do you want to initialize registers for another signaling link layer 2?
If **YES**, then go to [Step 10](#).
If **NO**, then continue to the next step.
12. Do you want to retrieve the PM data for a signaling link layer 3?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).
13. Retrieve current and historical performance data for signaling link layer 3 by double-clicking the switch, *SS7* and *Links*. Right-click the *link*, click *View* and then select the *PM Stats* tab at the top and the *SLK3* tab toward the bottom. See [Figure 2](#).
14. Analyze the retrieved information. Are there a large number of reports due to congestion? Reference **DLP-635** for detailed information for the command.
If **YES**, then continue to the next step.
If **NO**, then go to [Step 16](#).
15. Determine the cause for failures and correct.
16. Do you want to retrieve PM data of another signaling link layer 3?
If **YES**, then go to [Step 13](#).
If **NO**, then continue to the next step.
17. Do you want to initialize registers for a link set?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 3](#).

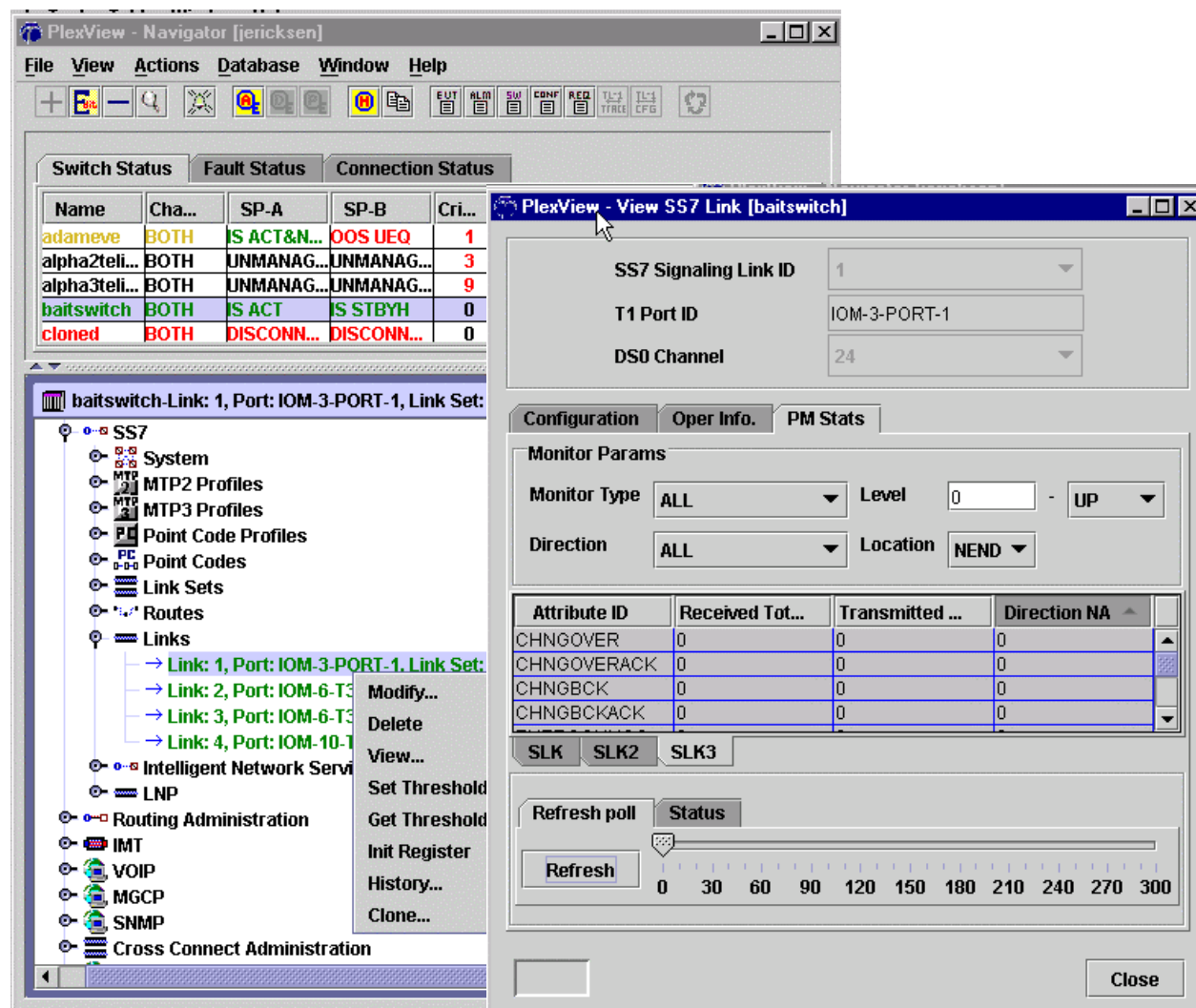


Figure 2. Signaling Link Layer 3 Status

18. Clear or initialize the signaling link layer 3 counters by double-clicking the switch, SS7 and *Links*. Right-click the *link*, click *Modify* and then select the *PM Stats* tab at the top and the *SLK3* tab toward the bottom. Make the desired changes and then click *Ok* or *Apply*. See Figure 2.
19. Do you want to initialize registers for another signaling link layer 3?
 - If **YES**, then go to [Step 18](#).
 - If **NO**, then continue to the next step.



Note: For some software versions, you may not be able to do the following steps because the commands may not be available for that version.

20. Do you want to retrieve the performance data for MTP3 signaling points?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

21. Retrieve current and historical performance data for MTP3 signaling points by right-clicking to select the Switch, and *Modify*. Click the *PM Stats* tab and then click *Refresh* near the bottom of the panel for latest information. See [Figure 3](#).

Switch Status

Name	Chassis	SP-A	SP-B
ort4aort4b	BOTH	UNMANAGED	UNMANAGED
plexus01	BOTH	UNMANAGED	UNMANAGED
richfamous	BOTH	IS ACT	IS STB
testAdd	BOTH	UNMANAGED	UNMANAGED
tornadotwister	BOTH	IS ACT&NBK	OOS U

richfamous-richfamous, SP-A: IS ACT, SP-B: IS STB

- Node Administration
 - Modify...
 - Delete
 - View...
- GR-303
- SIP
- CAS
- ISDN
- SS7
- Routing Administration
 - TL1 Trace...
 - TL1 Configuration...
- IMT
- VOIP
- MGCP
- SNMP
- Cross Connection
- System Services
 - Generate PM Report...
 - Synchronize
- Tones / Announcements
- Voice Mail
- Carrier Administration
- Subscriber Database

Modify Switch [baitswitch]

PM Stats | Conditions | Alarms | IP Route

Configuration | Oper. Info | Stats

Monitor Params

Monitor Type: **ALL** | Level: **0** | **UP**

Direction: **ALL** | Location: **NEND**

Time Period: | Date of Monitor: |

Time of Monitor: |

Attribute ID	Received Totals	Transmitted T...	Direction NA
USRUNAV	0	0	0
TRARSTRALLW	0	5	0
TRARSTRWAIT	4	0	0
LASTINIT	235	235	0
MSUDROPRTTEE...	0	0	0
MTPPRESTARTS	0	0	0
LASTINITNA	0	0	235

Mtp3 | CC | SIPMSG | RC

Refresh poll | **Status**

Refresh | 0 | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300

Ok | **Cancel** | **Apply**

Figure 3. MPT3 PM Status

22. Analyze the retrieved information. Are there a large number of failures such as dropped messages (MSUDROP RTEERR) or is the user unavailable (USRUNAV)?
 If **YES**, then continue to the next step.
 If **NO**, then go to [Step 24](#).
23. Determine the cause and correct.
24. Do you want to retrieve the performance data of another signaling link?
 If **YES**, then go to [Step 21](#).
 If **NO**, then continue to the next step.
25. Do you want to initialize registers for MTP3 signaling points?
 If **YES**, then continue to the next step.
 If **NO**, then go to [Step 3](#).
26. Clear or initialize the MTP3 signaling point counters by right-clicking a received status item and then click the *Init Register* block. Make required changes on the Init Register MTP3 screen and then click *Apply*. See [Figure 4](#).

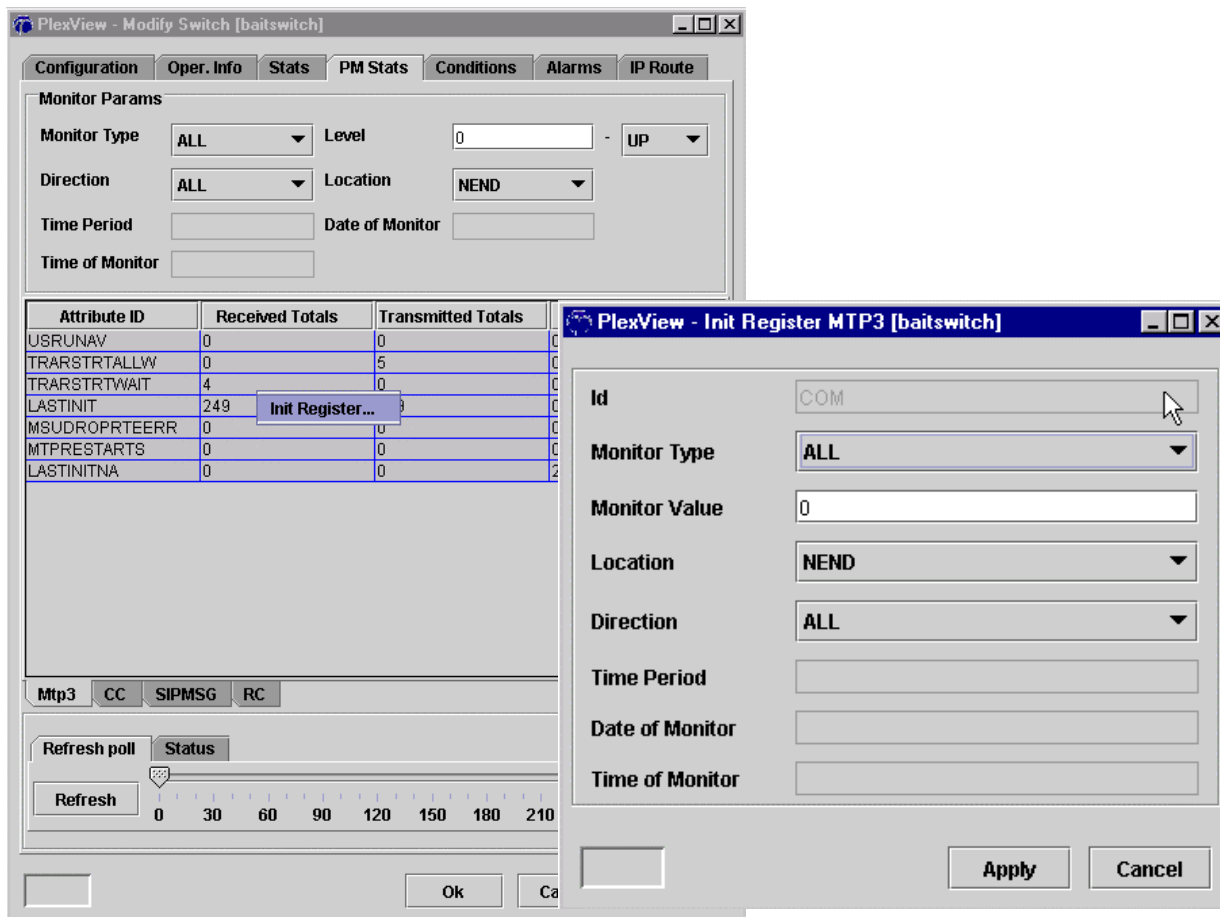


Figure 4. Initialization of Registers

27. Do you want to initialize signaling link registers for another MTP3 signaling point?

If **YES**, then go to [Step 26](#).

If **NO**, then go to [Step 3](#).

28. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica:::telica;

29. Select your task from the following and go to the indicated step.

- Retrieve PM data for signaling link layer 2 [Step 31](#)
- Initialize signaling link layer 2 registers [Step 36](#)
- Retrieve PM data for signaling link layer 3 [Step 39](#)
- Clear the counters data for signaling link layer 2..... [Step 44](#)
- Retrieve PM data for MTP3 signaling points..... [Step 47](#)
- Clear the counters for MTP3 signaling points [Step 52](#)
- Finished, no other task in the above list..... continue to the next step.

30.  **YOU HAVE COMPLETED THIS PROCEDURE.**

31. Retrieve current and historical performance data for signaling link layer 2 using the RTRV-PM-SLKL2 command. Reference **DLP-635** for detailed information for the command.

Command Syntax: RTRV-PM-SLKL2:[TID]:<ss7LnkId>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>;

Command Example: RTRV-PM-ISDNMSG:::3029;

Output Example:

```
telica 2002-11-13 13:38:11
M 0 COMPLD
"1:IFSI00CTTX,1,0-UP,NEND,ALL"
"1:OCTRETX,0,0-UP,NEND,ALL"
"1:MSUTX,12376,0-UP,NEND,ALL"
"1:LSSUTX,3,0-UP,NEND,ALL"
"1:FISUTX,12388,0-UP,NEND,ALL"
"1:LASTINITRMT,109,0-UP,NEND,ALL"
"1:SIGUNITRXERR,0,0-UP,NEND,ALL"
```

```
"1:NEGACKRX,0,0-UP,NEND,ALL"
"1:SIFSIOOCTR,3,0-UP,NEND,ALL"
"1:MSURX,12387,0-UP,NEND,ALL"
"1:LSSURX,8,0-UP,NEND,ALL"
"1:FISURX,49449,0-UP,NEND,ALL"
"1:LASTINITTRCV,109,0-UP,NEND,ALL"
"1:LNKFAILFORALL,0,0-UP,NEND,ALL"
"1:LNKFAILABNRML,0,0-UP,NEND,ALL"
"1:LNKFAILDLYACK,0,0-UP,NEND,ALL"
"1:LNKFAILERR,0,0-UP,NEND,ALL"
"1:LNKFAILCONG,0,0-UP,NEND,ALL"
"1:LNKFAILALIGN,0,0-UP,NEND,ALL"
"1:LASTINITNA,109,0-UP,NEND,ALL"
"1:DURLNKINSRV,4062,0-UP,NEND,ALL"
"1:DURLNKLOCCONG,0,0-UP,NEND,ALL"
/* RTRV-PM-SLKL2 */
```

;

32. Analyze the retrieved information. Are there a large number of minutes that the link has been congested (DURLNKLOCCONG) or number of times a link has failed (LNKFAIL*)?

If **YES**, then go to [Step 34](#).

If **NO**, then continue to the next step.

33. Determine why the link has been congested or failed and correct.

34. Do you want to retrieve the PM data for another signaling link layer 2?

If **YES**, then go to [Step 31](#).

If **NO**, then continue to the next step.

35. Do you want to initialize or clear registers for signaling link layer 2?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 29](#).

36. Clear or initialize the signaling link layer 2 counters using the INIT-REG-SLKL2 command.

Command Syntax: INIT-REG-SLKL2:[TID]:<ss7LnkId>:
[CTAG]::<montype>,[<monval>],[<locn>],
[<dirn>;

Command Example: INIT-REG-SLKL2::1;

37. Do you want to initialize registers for another signaling link layer 2?

If **YES**, then go to [Step 36](#).

If **NO**, then continue to the next step.

38. Do you want to retrieve the PM data for a signaling link layer 3?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 29](#).

39. Retrieve current and historical performance data for a link set using the RTRV-PM-SLKL3 command. Reference **DLP-635** for detailed information for the command.

Command Syntax: RTRV-PM-SLKL3:[TID]:<ss7LnkId>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>];

Command Example: RTRV-PM-SLKL3::1;

Output Example:

```
telica 2003-02-10 09:33:09
M 0 COMPLD
"1:CHNGOVERTX,0,0-UP,NEND,ALL"
"1:CHNGOVERACKTX,0,0-UP,NEND,ALL"
"1:CHNGBCKTX,0,0-UP,NEND,ALL"
"1:CHNGBCKACKTX,0,0-UP,NEND,ALL"
"1:EMERGCHNGOVERTX,0,0-UP,NEND,ALL"
"1:EMERGCHNGOVERACKTX,0,0-UP,NEND,ALL"
"1:LNKINHTX,0,0-UP,NEND,ALL"
"1:LNKUNINHTX,0,0-UP,NEND,ALL"
"1:LNKINHACKTX,0,0-UP,NEND,ALL"
"1:LNKUNINHACKTX,0,0-UP,NEND,ALL"
"1:LNKINHDENYTX,0,0-UP,NEND,ALL"
"1:LNKFORCEUNINHTX,0,0-UP,NEND,ALL"
"1:LNKLOCINHTSTTX,0,0-UP,NEND,ALL"
"1:LNKRMTINHTSTTX,0,0-UP,NEND,ALL"
"1:LNKCONORDTX,0,0-UP,NEND,ALL"
"1:LNKCONACKTX,0,0-UP,NEND,ALL"
"1:LNKTSTTX,4088,0-UP,NEND,ALL"
"1:LNKTSTACKTX,8172,0-UP,NEND,ALL"
"1:TXMSGDROP,0,0-UP,NEND,ALL"
"1:TXCONGDROP,0,0-UP,NEND,ALL"
"1:SIFOCTTX,150502,0-UP,NEND,ALL"
"1:SI0OCTTX,12463,0-UP,NEND,ALL"
"1:MSUTX,12463,0-UP,NEND,ALL"
"1:LASTINITTRMT,161,0-UP,NEND,ALL" =
"1:CHNGOVERRX,0,0-UP,NEND,ALL"
"1:CHNGOVERACKRX,0,0-UP,NEND,ALL"
"1:CHNGBCKRX,0,0-UP,NEND,ALL"
"1:CHNGBCKACKRX,1,0-UP,NEND,ALL"
"1:EMERGCHNGOVERRX,0,0-UP,NEND,ALL"
"1:EMERGCHNGOVERACKRX,0,0-UP,NEND,ALL"
```

```
"1:LNKINHRX,0,0-UP,NEND,ALL"  
"1:LNKUNINHRX,0,0-UP,NEND,ALL"  
"1:LNKINHACKRX,0,0-UP,NEND,ALL"  
"1:LNKUNINHACKRX,0,0-UP,NEND,ALL"  
"1:LNKINHDENYRX,0,0-UP,NEND,ALL"  
"1:LNKFORCEUNINHRX,0,0-UP,NEND,ALL"  
"1:LNKLOCINHTSTRX,0,0-UP,NEND,ALL"  
"1:LNKRMTINHTSTRX,0,0-UP,NEND,ALL"  
"1:LNKCONORDRX,0,0-UP,NEND,ALL"  
"1:LNKCONACKRX,0,0-UP,NEND,ALL"  
"1:LNKTSTRX,8172,0-UP,NEND,ALL"  
"1:LNKTSTACKRX,4088,0-UP,NEND,ALL"  
"1:INVPDURX,0,0-UP,NEND,ALL"  
"1:SIFOCTRX,151870,0-UP,NEND,ALL"  
"1:SIOOCTRX,12473,0-UP,NEND,ALL"  
"1:MSURX,12473,0-UP,NEND,ALL"  
"1:LASTINITRCV,161,0-UP,NEND,ALL"  
"1:LNKCONGATTHRSHLD1,0,0-UP,NEND,ALL"  
"1:LNKCONGATTHRSHLD2,0,0-UP,NEND,ALL"  
"1:LNKCONGATTHRSHLD3,0,0-UP,NEND,ALL"  
"1:LASTINITNA,161,0-UP,NEND,ALL"  
"1:DUROFLNKUNAV,0,0-UP,NEND,ALL"  
"1:DUROFLNKCONG,0,0-UP,NEND,ALL"  
"1:UPDSTSTHRSHLD,200,0-UP,NEND,ALL"  
/* RTRV-PM-SLKL3 */
```

;

40. Analyze the retrieved information. Are there a large number of reports due to congestion?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 42](#).

41. Determine the cause for failures and correct.

42. Do you want to retrieve PM data of another signaling link layer 3?

If **YES**, then go to [Step 39](#).

If **NO**, then continue to the next step.

43. Do you want to initialize registers for a link set?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 29](#).

44. Clear or initialize the signaling link layer 3 counters using the INIT-REG-SLKL3 command. Reference **DLP-635** for detailed information for the command.

Command Syntax: INIT-REG-SLKL3:[TID]:<ss7LnkId>:
[CTAG]:<montype>,[<monval>],[<locn>],
[<dirn>];

Command Example: INIT-REG-SLKL3::1:::ALL;

45. Do you want to initialize registers for another signaling link layer 3?

If **YES**, then go to [Step 44](#).

If **NO**, then continue to the next step.



Note: The RTRV-PM-MTP3 and INIT-REG-MTP3 commands are not valid commands for some software versions. Type **RTRV-PM-MTP3?** to determine if it is a valid command.

46. Do you want to retrieve the performance data for MTP3 signaling points?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 29](#).

47. Retrieve current and historical performance data for MTP3 signaling points using the RTRV-PM-MTP3 command. Reference **DLP-635** for detailed information for the command.

Command Syntax: RTRV-PM-MTP3:[TID]:[<src>]:[CTAG]:
[<montype>],[<monlev>],[<locn>],
[<dirn>];

Command Example: RTRV-PM-MTP3;

Output Example:

```
telica 2003-02-10 09:44:08
M 0 COMPLD
"COM:USRUNAVTX,0,0-UP,NEND,ALL"
"COM:TRARSTRALLWTX,5,0-UP,NEND,ALL"
"COM:TRARSTRWAITTX,0,0-UP,NEND,ALL"
"COM:LASTINITTRMT,5971,0-UP,NEND,ALL"
"COM:USRUNAVRX,0,0-UP,NEND,ALL"
"COM:TRARSTRALLWRX,0,0-UP,NEND,ALL"
"COM:TRARSTRWAITRX,0,0-UP,NEND,ALL"
"COM:LASTINITRCV,5971,0-UP,NEND,ALL"
"COM:MSUDROPRTERR,1,0-UP,NEND,ALL"
"COM:MTPRESTARTS,0,0-UP,NEND,ALL"
"COM:LASTINITNA,5971,0-UP,NEND,ALL"
/* RTRV-PM-MTP3 */
;
```

48. Analyze the retrieved information. Are there a large number of failures?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 50](#).

49. Determine the cause and correct the problem.

50. Do you want to retrieve the performance data of another signaling link?

If **YES**, then go to [Step 47](#).
If **NO**, then continue to the next step.

51. Do you want to initialize registers for MTP3 signaling points?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 29](#).

52. Clear or initialize the MTP3 signaling point counters using the INIT-REG-MTP3 command.

Command Syntax: INIT-REG-MTP3:[TID]:[<src>]:[CTAG]::
 <montype>,[<monval>],[<locn>],[<dirn>];

Command Example: INIT-REG-MTP3:::::ALL;

53. Do you want to initialize signaling link registers for another MTP3 signaling point?

If **YES**, then go to [Step 52](#).
If **NO**, then go to [Step 29](#).

MLP-706 - CHECK ISDN STATUS

SUMMARY: This procedure provides steps to retrieve the state of ISDN links and ISDN B channels.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Ensure that you have the following necessary information to complete this procedure:

- ISDN interface
- ISDN links

2. Are you going to be using the EMS or TL1 to check the ISDN status?

If using the **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 9](#).

3. Select your task from the following and go to the indicated step.

- Retrieve state of ISDN B channel [Step 5](#)
- Finished, no other task in the above list continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve the current state of specified ISDN B channels on a link. Double-click the switch, *ISDN* and *Links*. Right-click the *link*, click *View* and then select the *Oper Info* tab at the top and click *Refresh* for the latest information. Refer to [Figure 1](#). Reference **DLP-647** for detailed information for the command.

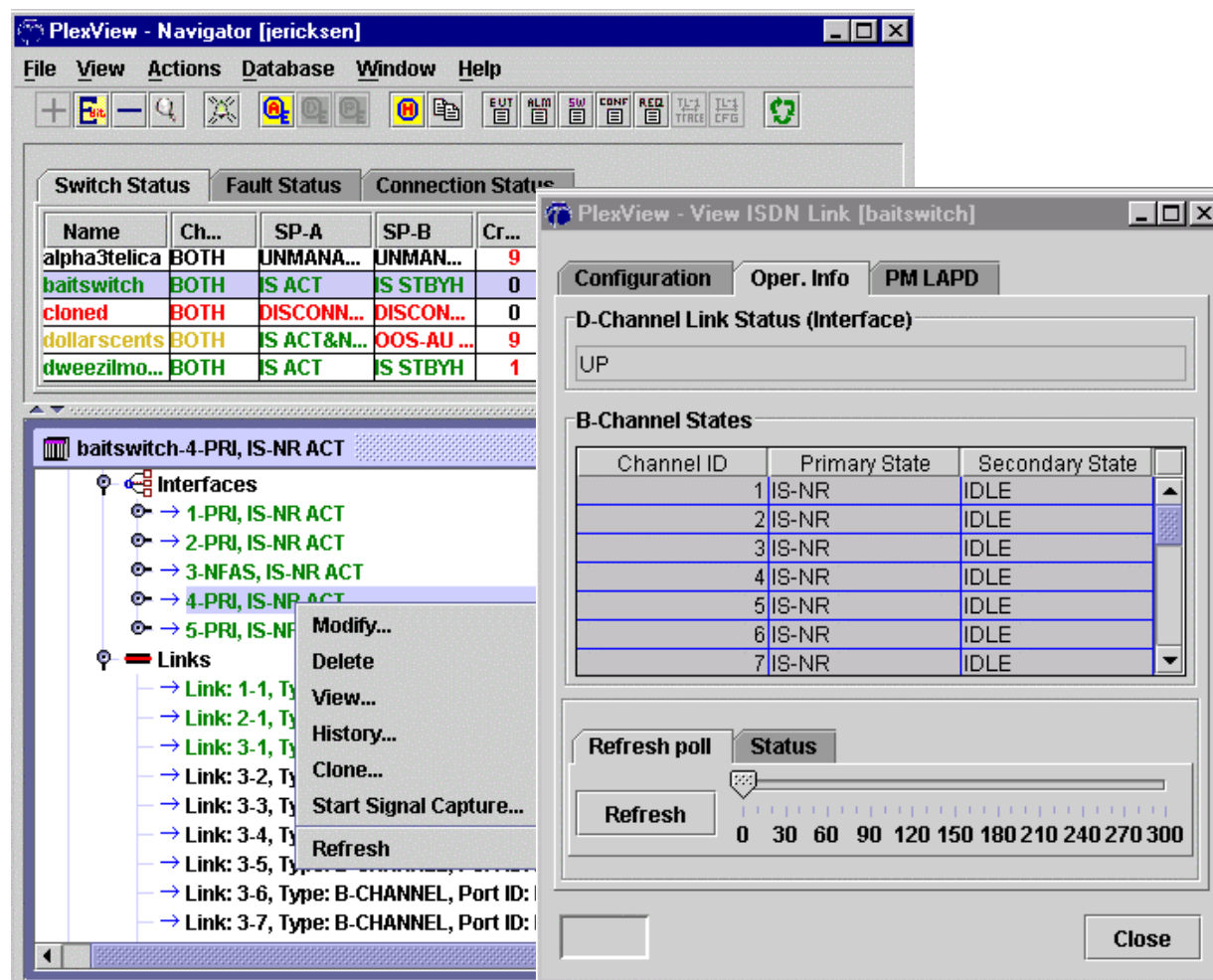


Figure 1. State of ISDN B Channels

6. Analyze the retrieved information. Are the retrieved ISDN B channels in service (IS)?
 If YES, then go to [Step 8](#).
 If NO, then continue to the next step.
7. Determine why the link has been congested or failed and correct.
8. Do you need to retrieve the status of other B channels?
 If YES, then [Step 5](#).
 If NO, then go to [Step 3](#).
9. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica:::telica;

10. Select your task from the following and go to the indicated step.

- Retrieve state of an ISDN link [Step 12](#)
- Retrieve state of ISDN B channel [Step 5](#)
- Finished, no other task in the above list..... continue to the next step.

11.  **YOU HAVE COMPLETED THIS PROCEDURE.**



Note: For some software versions, you may not be able to do the following steps because the commands may not be available for that version.

12. Retrieve the current state of an ISDN link using the RTRV-STATUS-ISDNLNK command. Reference **DLP-647** for detailed information for the command.

Command Syntax: RTRV-STATUS-ISDNLNK: [TID]:
<isdnLnkStaStateId>:CTAG];

Command Example: RTRV-STATUS-ISDNLNK::5001-5001;

Output Example:

```
telica 2003-02-25 14:37:49
M 0 COMPLD
"5001-5001:UP"
/* RTRV-STATUS-ISDNLNK */
```

13. Analyze the retrieved information. Is the link down?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 15](#).

14. Determine why the link is down and correct.

15. Do you want to retrieve information on another ISDN link?

If **YES**, then go to [Step 12](#).

If **NO**, then go to [Step 10](#).

16. Retrieve the current state of specified ISDN B channels on a link using the RTRV-STATUS-ISDNBCHAN command. Reference **DLP-647** for detailed information for the command.

Command Syntax: RTRV-STATUS-ISDNBCHAN: [TID]:
<isdnBcStaChanId>:[CTAG]:: [<numChans>];

Command Example: RTRV-STATUS-ISDNBCHAN::5001-5001-1;

Output Example:

```
telica 2003-02-25 14:37:49
M 0 COMPLD
"5001-5001-1:IS-NR,IDLE"
/* RTRV-STATUS-ISDNBC */
;
```

- 17.** Analyze the retrieved information. Are the retrieved ISDN B channels in service (IS)?

If **YES**, then go to [Step 19](#).

If **NO**, then continue to the next step.

- 18.** Determine why the link has been congested or failed and correct.

- 19.** Do you need to retrieve the status of other B channels?

If **YES**, then go to [Step 16](#).

If **NO**, then go to [Step 10](#).

MLP-707 - CHECK GR-303 STATUS

SUMMARY: This procedure provides steps to retrieve the status about GR-303 interface groups and the status of associated call reference values or subscriber lines.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Ensure you have the following necessary information to complete this procedure:

- Interface group number
- Call reference value
- Subscriber interface

2. Are you going to be using EMS or TL1 to check the GR-303 status?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 13](#).

3. Select your task from the following and go to the indicated step.

- Retrieve status of GR303 interface group [Step 5](#)
- Retrieve status of GR303 CRV [Step 9](#)
- Finished, no other task in the above list continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve the status of a GR-303 interface group by double-clicking the switch, *GR303* and *Interfaces*. Right-click the *interface*, click *View* and then select the *Oper. Info* tab. See [Figure 1](#). Reference **DLP-643** for detailed information for the command.

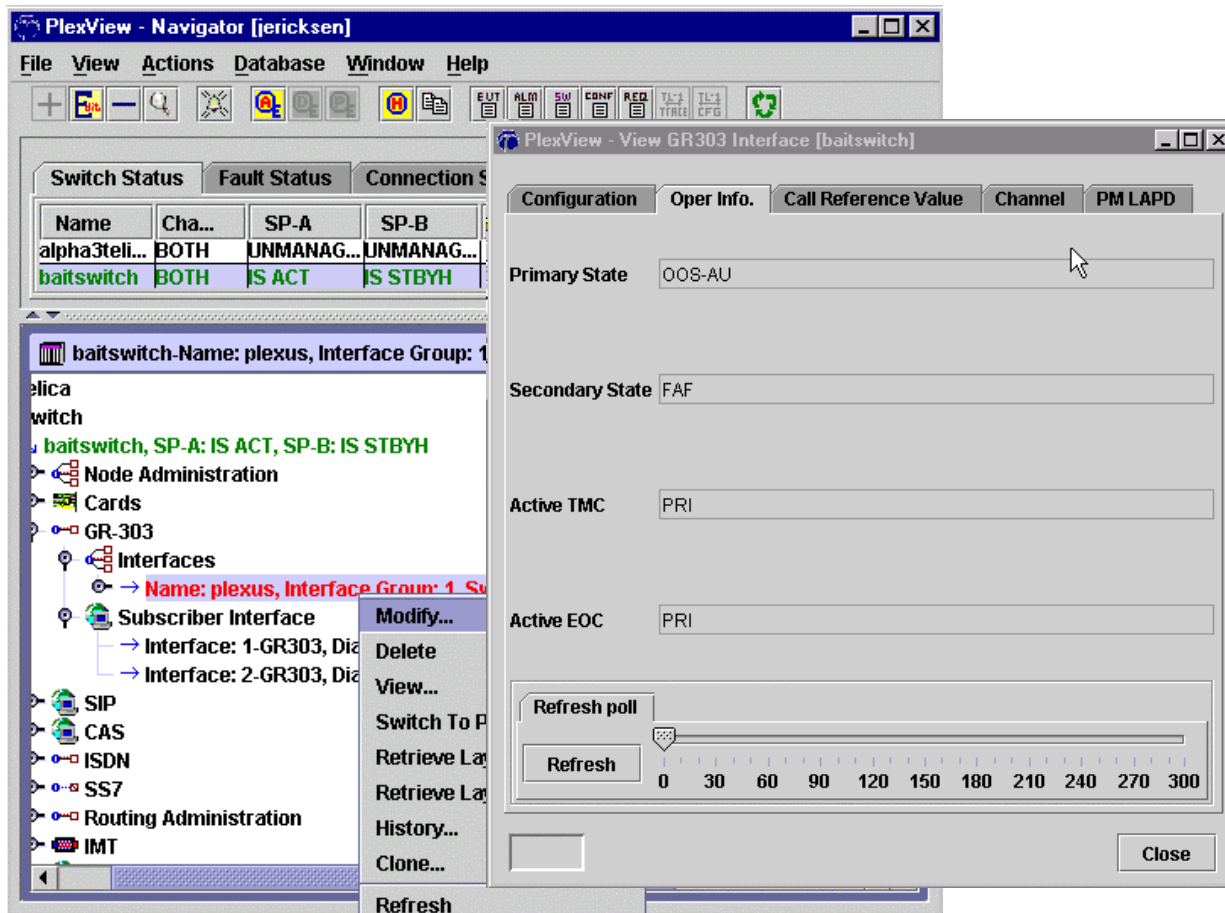


Figure 1. GR-303 Interface Group Status

6. Analyze the retrieved information. Is a GR-303 interface out-of-service (OOS)?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 8](#).
7. Determine why the interface is OOS and correct.
8. Do you want to retrieve the status for another GR-303 interface group?
If **YES**, then go to [Step 5](#).
If **NO**, then go to [Step 3](#).
9. Retrieve the channel and state associated with a GR-303 Call Reference Value (subscriber line) by double-clicking the switch, *GR303* and *Interfaces*. Right-click the *interface*, click *View* and then select the *Oper. Info* tab. See [Figure 2](#). Reference **DLP-643** for detailed information for the command.

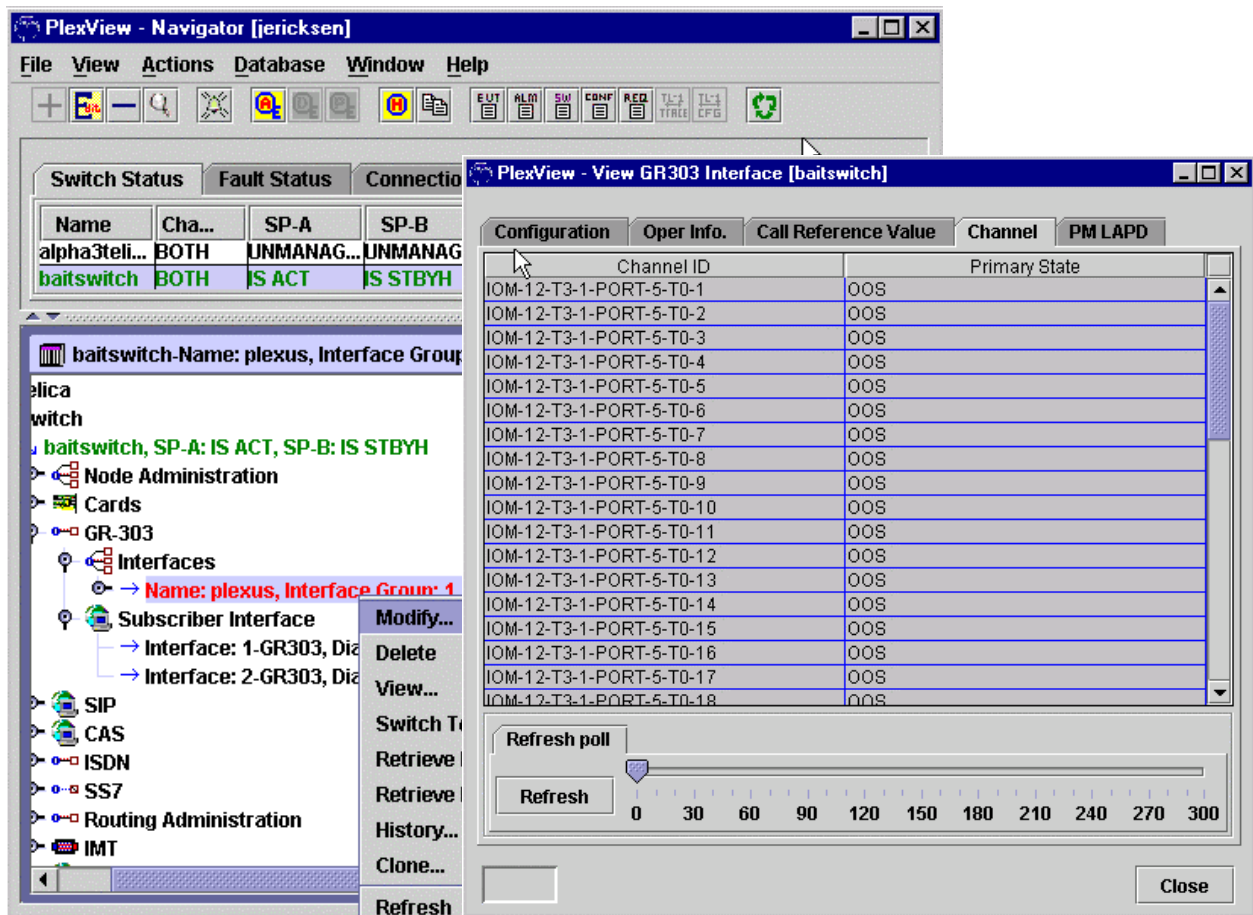


Figure 2. GR303 Channel Status

10. Analyze the retrieved information. Are the CRV subscriber lines in service (IS)?
 - If YES, then go to [Step 12](#).
 - If NO, then continue to the next step.
11. Determine why the CRV subscriber lines are OOS and correct the problem.
12. Do you need to retrieve the status for another CRV?
 - If YES, then go to [Step 9](#).
 - If NO, then go to [Step 3](#).
13. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.
 - Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;
 - Command Example: ACT-USER::telica:::telica;

14. Select your task from the following and go to the indicated step.

- Retrieve status of GR-303 interface group..... [Step 16](#)
- Retrieve status of GR-303 CRV..... [Step 20](#)
- Finished, no other task in the above list..... continue to the next step.

15.  **YOU HAVE COMPLETED THIS PROCEDURE.**

16. Retrieve the status of a GR-303 interface group using the RTRV-STATUS-GR303IF command. Reference **DLP-643** for detailed information for the command.

Command Syntax: RTRV-STATUS-GR303IF:[TID]:<ifGrpNum>:
[CTAG];

Command Example: RTRV-STATUS-GR303IF::1;

Output Example:

```
telica 2003-02-13 13:38:11
M 0 COMPLD
"1:ACTIVETMC=PRI,ACTIVEEOC=PRI,OOS-AU,FAF"
/* RTRV-STATUS-GR303IF */
;
```

17. Analyze the retrieved information. Is a GR-303 interface out-of-service (OOS)?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 19](#).

18. Determine why the interface is OOS and correct the problem.

19. Do you want to retrieve the status for another GR-303 interface group?

If **YES**, then go to [Step 16](#).

If **NO**, then go to [Step 14](#).

20. Retrieve the channel and state associated with a GR-303 Call Reference Value (subscriber line) using the RTRV-STATUS-GR303CRV command. Reference **DLP-643** for detailed information for the command.

Command Syntax: RTRV-STATUS-GR303CRV:[TID]:<crvId>:
[CTAG];

Command Example: RTRV-STATUS-GR303CRV::1-1-1;

Output example is on the following page.

Output Example:

```
telica 2003-02-13 13:38:11
M 0 COMPLD
  "1-1-1:IOMPORTDS0=IOM-2-T3-2-PORT-28-T0-24:IS, IDLE"
/* RTRV-STATUS-GR303CRV */
;
```

21. Analyze the retrieved information. Are the CRV subscriber lines in service (IS)?

If **YES**, then go to [Step 23](#).

If **NO**, then continue to the next step.

22. Determine why the CRV subscriber lines are OOS and correct.

23. Do you need to retrieve the status for another CRV?

If **YES**, then go to [Step 20](#).

If **NO**, then go to [Step 14](#).

NOTES:

MLP-708 - CHECK PM DATA AND INITIALIZE REGISTERS FOR SIP MESSAGES

SUMMARY: This procedure provides steps to retrieve performance monitored (PM) data and initialize registers for Session Initiation Protocol (SIP) messages.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for SIP messages?

If using **EMS**, then continue to the next step.
If using **TL1**, then go to [Step 10](#).

2. Select your task from the following and go to the indicated step.

- Retrieve PM data for SIP messages [Step 4](#)
- Initialize registers for SIP message [Step 8](#)
- Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve current and historical performance data related to SIP messages by double-clicking the switch, right-clicking the *switch name*, clicking *View* and then selecting *PM Stats* tab near the top and the *SIPMSG* tab near the bottom. See [Figure 1](#). Reference **DLP-644** for detailed information for the command.

5. Analyze the retrieved information. Are there a large number of error type messages?

If **YES**, then continue to the next step.
If **NO**, then go to [Step 7](#).

6. Determine the reason for error messages and correct.

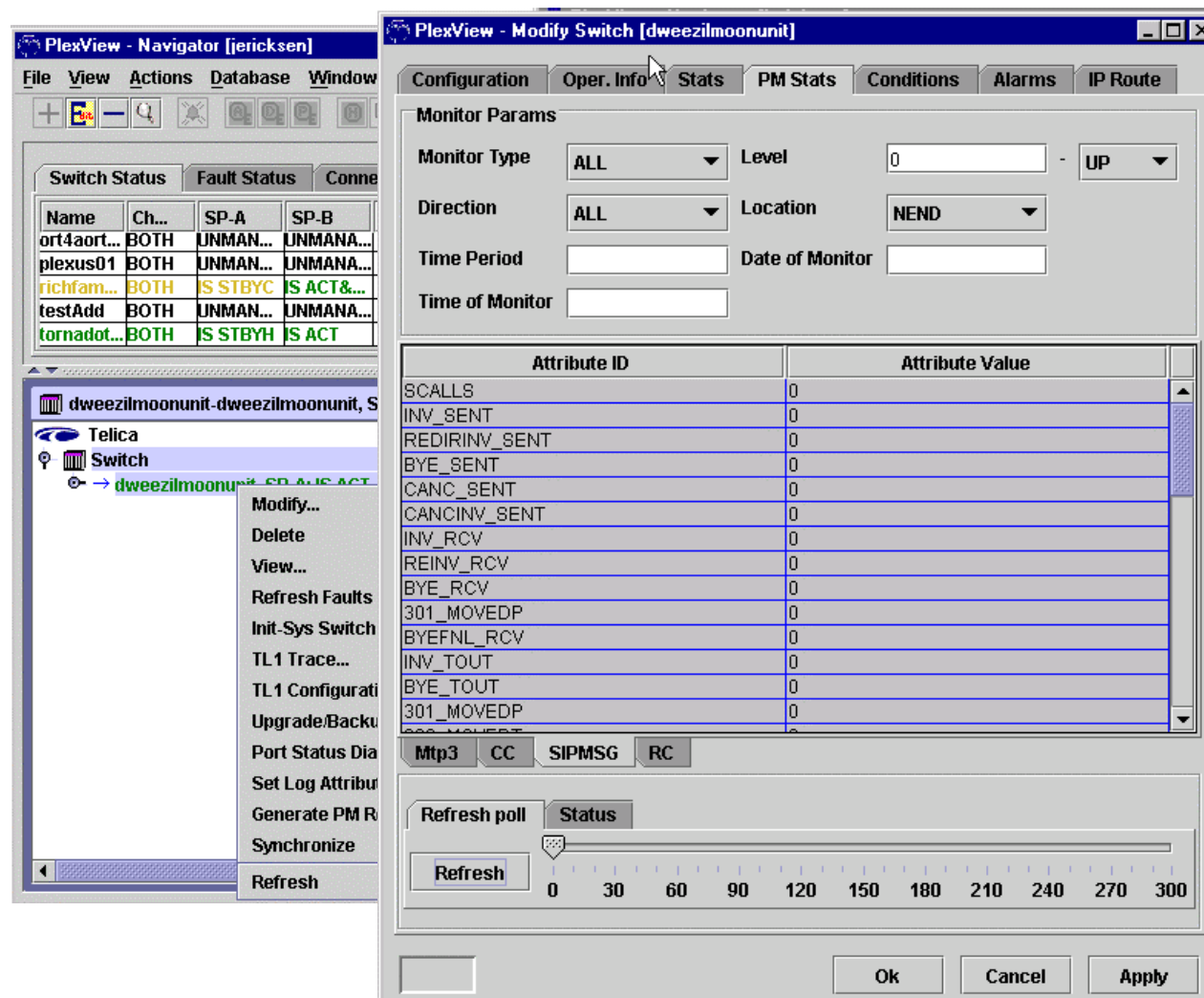


Figure 1. PM Stats of SIP Messages

7. Do you want to retrieve the status for another SIP monitored value?
If YES, then go to [Step 4](#).
If NO, then go to [Step 2](#).
8. Initialize registers or event counters for SIP) message statistics by double-clicking the switch, right-clicking the switch name, clicking *Modify* and then selecting the *PM Stats* tab near the top and the *SIPMSG* tab near the bottom. Make required changes and then click *Ok* or *Apply*. See [Figure 1](#).
9. Do you want to initialize registers for another SIP message monitored type?
If YES, then go to [Step 8](#).
If NO, then go to [Step 2](#).

10. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica::telica;

11. Select your task from the following and go to the indicated step.

- Retrieve PM data for SIP messages [Step 13](#)
- Initialize registers for SIP message [Step 17](#)
- Finished, no other task in the above list..... continue to the next step.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Retrieve current and historical performance data related to SIP messages using the RTRV-PM-SIPMSG command. Reference **DLP-644** for detailed information for the command.

Command Syntax: RTRV-PM-SIPMSG:[TID]: [<pm_id>]: [CTAG]: :
[<montype>], [<monlev>], [<locn>],
[<dirn>], [<tmper>], [<mondatt>],
[<montm>];

Command Syntax: RTRV-PM-SIPMSG:[TID];

Output Example:

```
telica 2003-02-13 13:38:11
M 0 COMPLD
"COM:SCALLS,0"
"COM:INV_SENT,0"
"COM:REDIRINV_SENT,0"
"COM:BYE_SENT,0"
"COM:CANC_SENT,0"
. . .
"COM:600_BUSYEV,0"
"COM:603_DECLINE,0"
"COM:604_NOEXIST,0"
"COM:606_NOTACC2,0"
/* RTRV-STATUS-SIPMSG */
;
```

14. Analyze the retrieved information. Are there a large number of error type messages?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 16](#).

15. Determine reason for error messages and correct.

16. Do you want to retrieve status for another SIP-monitored value?

If **YES**, then go to [Step 13](#).

If **NO**, then go to [Step 11](#).

17. Initialize registers or event counters for SIP message statistics using the INIT-REG-SIPMSG command.

Command Syntax: INIT-REG-SIPMSG: [TID]: [<com>]: [CTAG]: :
 [<sipmontype>], [<monval>], [<locn>], [<di
 rn>], [<tmper>], [<mondatt>], [<montm>];

Command Example: INIT-REG-SIPMSG;

18. Do you want to initialize registers for another SIP message monitored type?

If **YES**, then [Step 17](#).

If **NO**, then go to [Step 11](#).

MLP-709 - CHECK PM DATA AND INITIALIZE REGISTERS FOR T1 AND T3

SUMMARY: This procedure provides steps to retrieve performance monitored (PM) data and initialize registers and thresholds for T1s and T3s.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize T1 or T3 registers?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 24](#).

2. Select your task from the following and go to the indicated step.

- Retrieve PM data for T1s [Step 4](#)
- Initialize registers for T1s [Step 8](#)
- Set T1 thresholds [Step 10](#)
- Get T1 thresholds [Step 12](#)
- Retrieve PM data for T3s [Step 14](#)
- Initialize registers for T3s [Step 18](#)
- Set T3 thresholds [Step 20](#)
- Get T3 thresholds [Step 22](#)
- Finished, no other task in the above list continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**



Note: PM data cannot be retrieved for DS1 IOMs.

4. Retrieve current and historical performance data related to T1s. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *View Performance*. Make changes if necessary and then click *Ok*. See [Figure 1](#). After clicking *Ok*, you will see a screen similar to [Figure 2](#). Reference [DLP-537](#) for detailed information for the command.

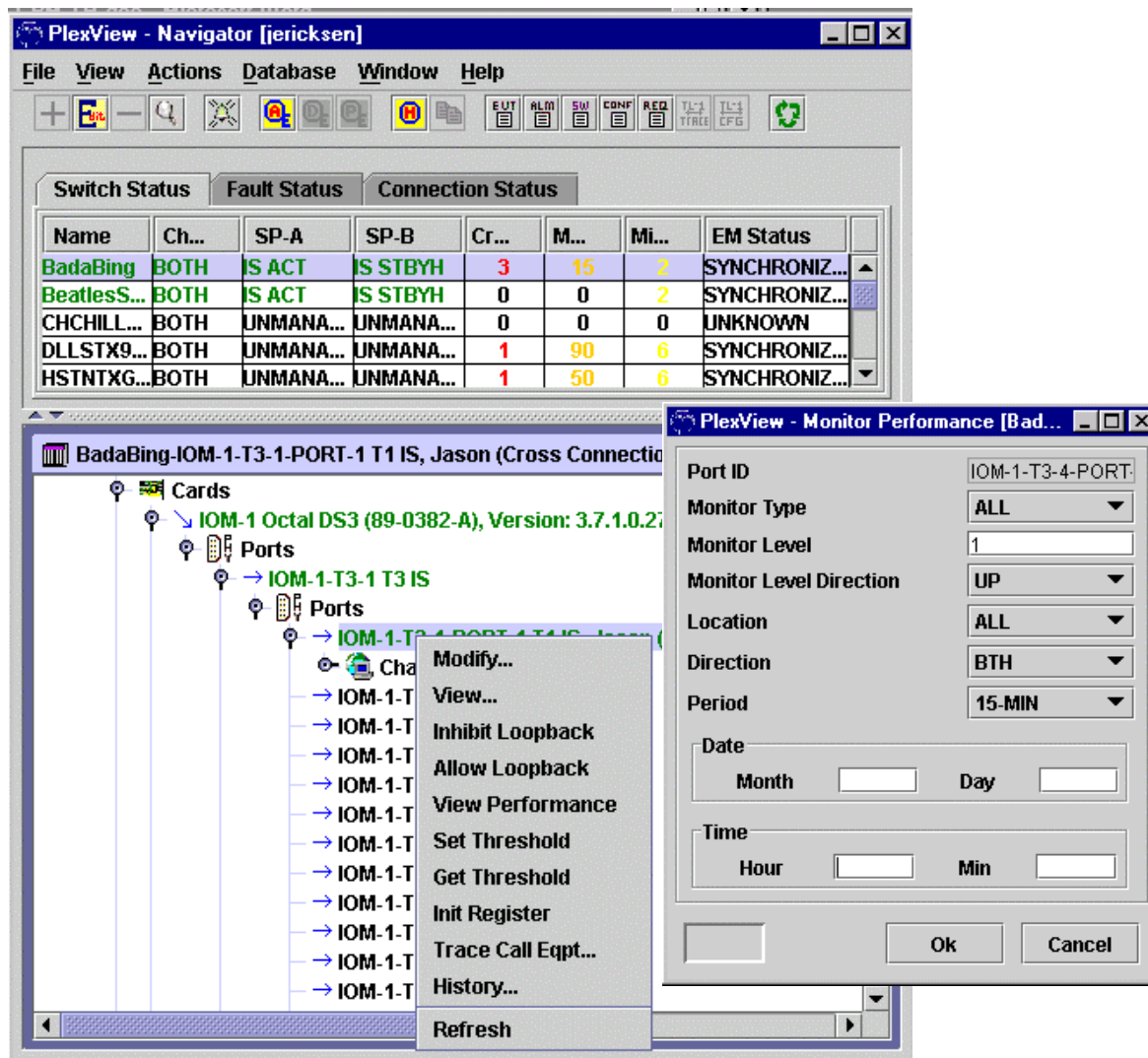


Figure 1. Monitor T1 Performance

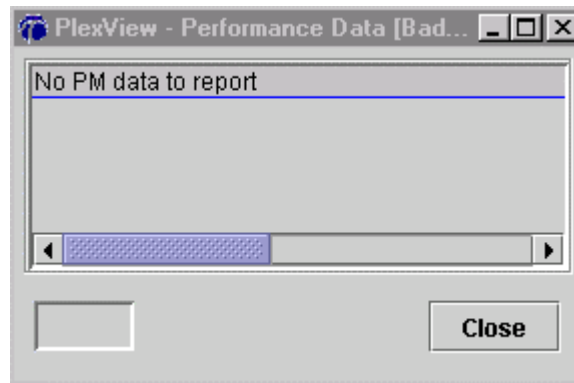


Figure 2. Performance Data

5. Analyze the retrieved information. Does a monitored type have a large number of errors?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 7](#).
6. Determine the reason for errors (cabling, problem at far end, bad module) and correct.
7. Do you want to retrieve data for another T1?
If **YES**, then go to [Step 4](#).
If **NO**, then go to [Step 2](#).
8. Initialize one or more storage registers or event counters associated with specific T1 ports in the Plexus 9000. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Init Register*. Make required changes and then click *Ok* or *Apply*. See [Figure 3](#). Reference **DLP-537** for detailed information for the command.
9. Do you want to initialize other registers?
If **YES**, then go to [Step 8](#).
If **NO**, then go to [Step 2](#).
10. Initialize thresholds for T1 monitored data. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Set Threshold*. Make required changes and then click *Ok*. See [Figure 4](#). Reference **DLP-537** for detailed information for the command.
11. Do you want to set other performance monitoring threshold levels?
If **YES**, then [Step 10](#).
If **NO**, then go to [Step 2](#).
12. Initialize thresholds for T1 monitored data. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Set Threshold*. Make required changes and then click *Ok*. See [Figure 4](#). Reference **DLP-537** for detailed information for the command.

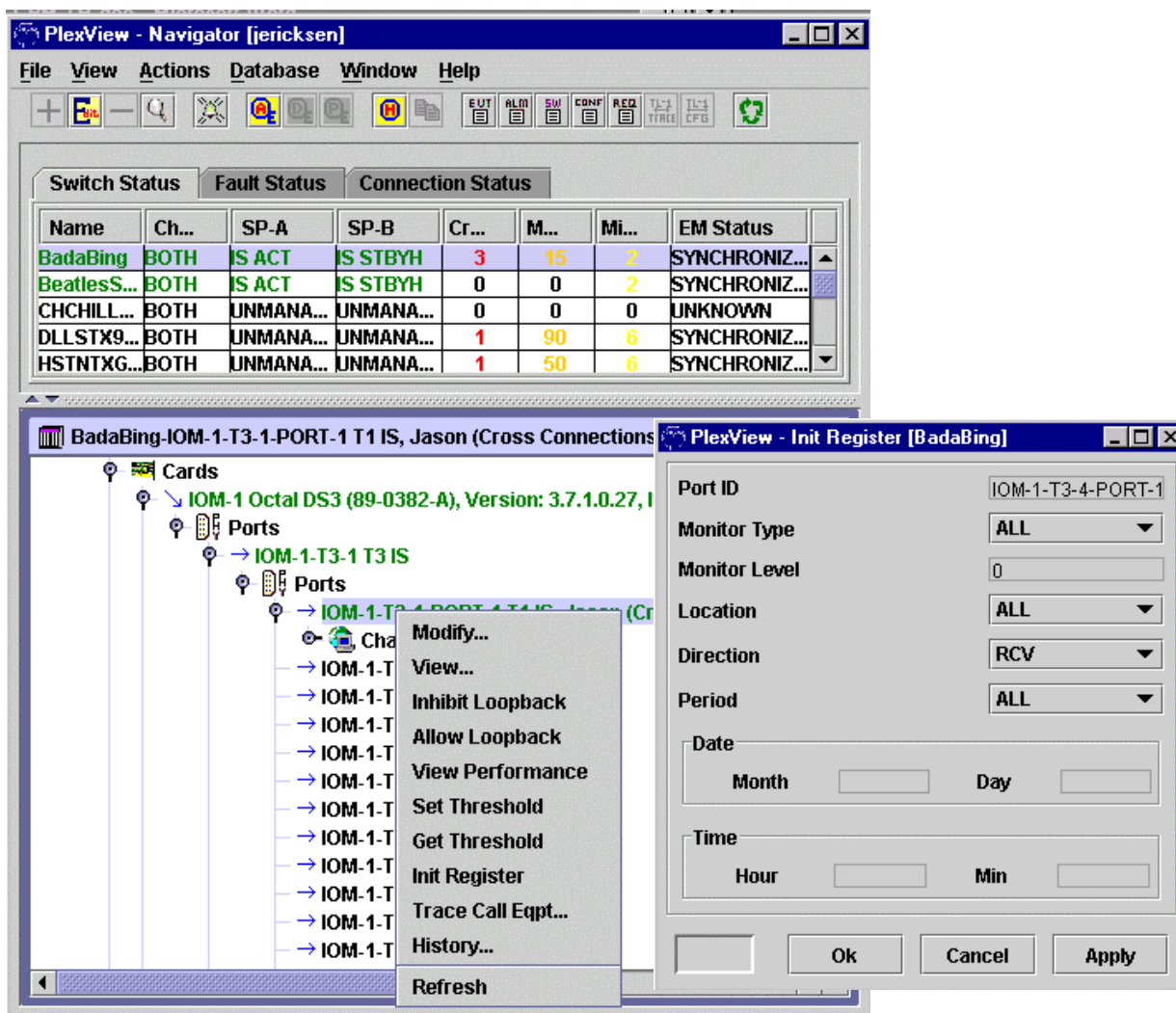


Figure 3. Modify T1 PM Thresholds

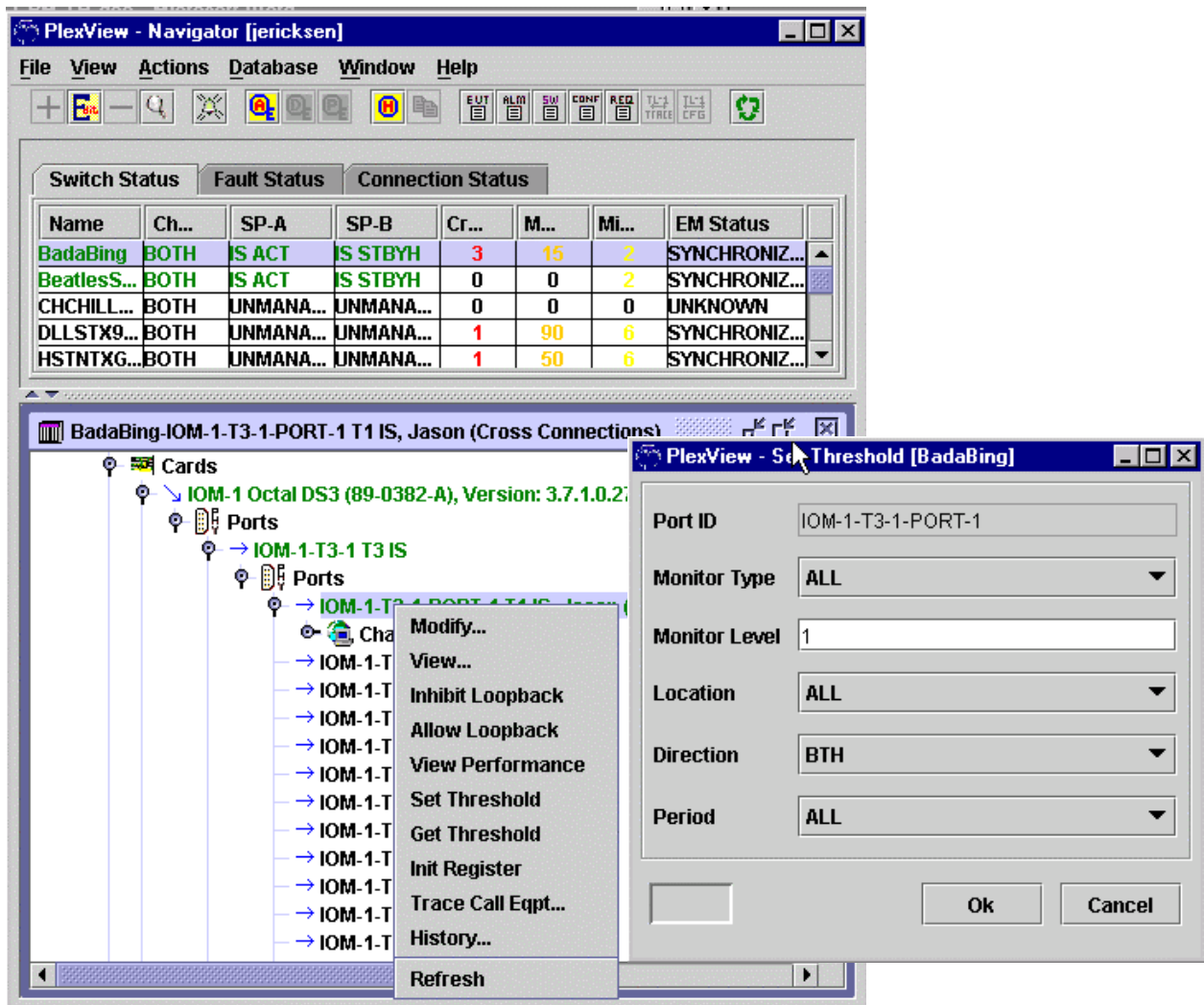


Figure 4. Modify T1 PM Thresholds

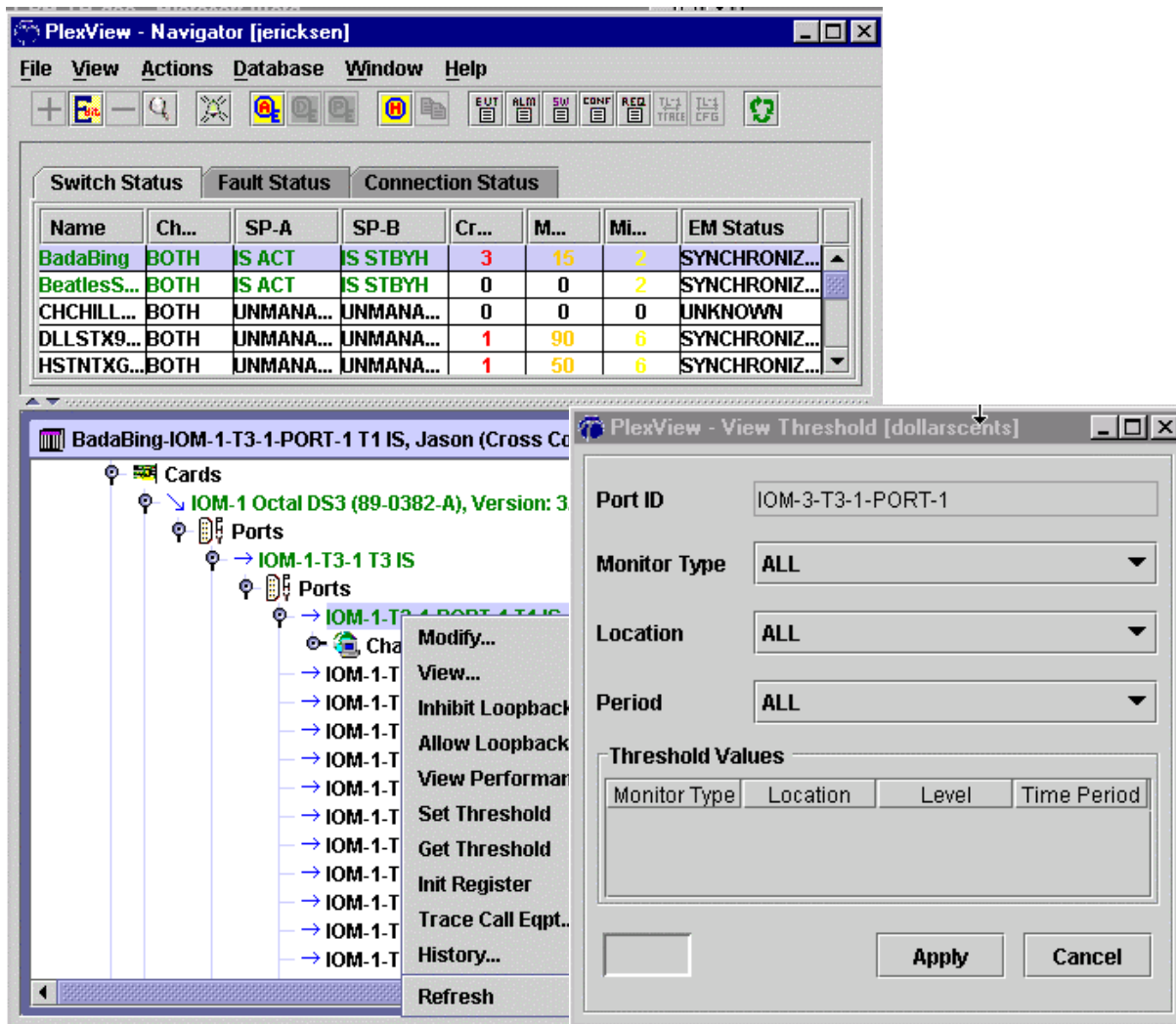


Figure 5. Get T1 PM Thresholds

13. Do you want to get other performance monitoring threshold levels?
If YES, then go to [Step 12](#).
If NO, then go to [Step 2](#).
14. Retrieve current and historical performance data related to T3s. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, and desired port. Right-click desired port, select *View Performance*. Make changes if necessary and then click *Ok*. See [Figure 6](#). After clicking *Ok*, you will see a screen similar to [Figure 7](#). Reference [DLP-538](#) for detailed information for the command.

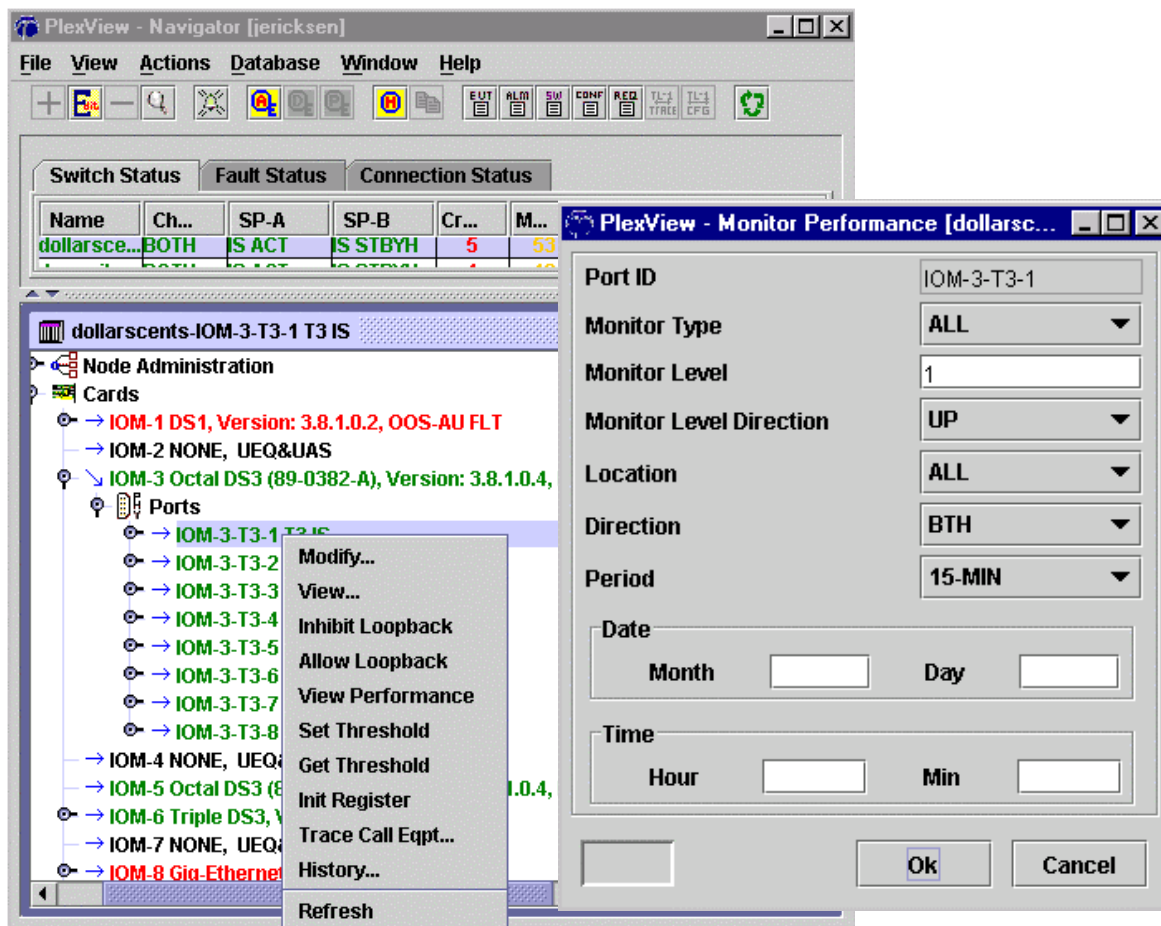


Figure 6. Monitor T3 Performance

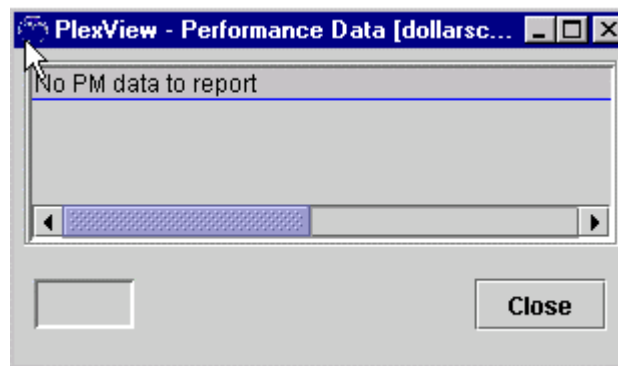


Figure 7. Performance Data

15. Analyze the retrieved information. Does a monitored type have a large number of errors?
If YES, then continue to the next step.
If NO, then go to [Step 17](#).
16. Determine the reason for errors (cabling, problem at far end, bad module) and correct.

17. Do you want to retrieve data for another T3?
- If **YES**, then go to [Step 14](#).
If **NO**, then go to [Step 2](#).
18. Initialize one or more storage registers or event counters associated with specific T3 ports in the Plexus 9000. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, and *Ports*. Right-click the desired port and select *Init Register*. Make changes if necessary and then click *Ok* or *Apply*. See [Figure 8](#). Reference **DLP-538** for detailed information for the command.

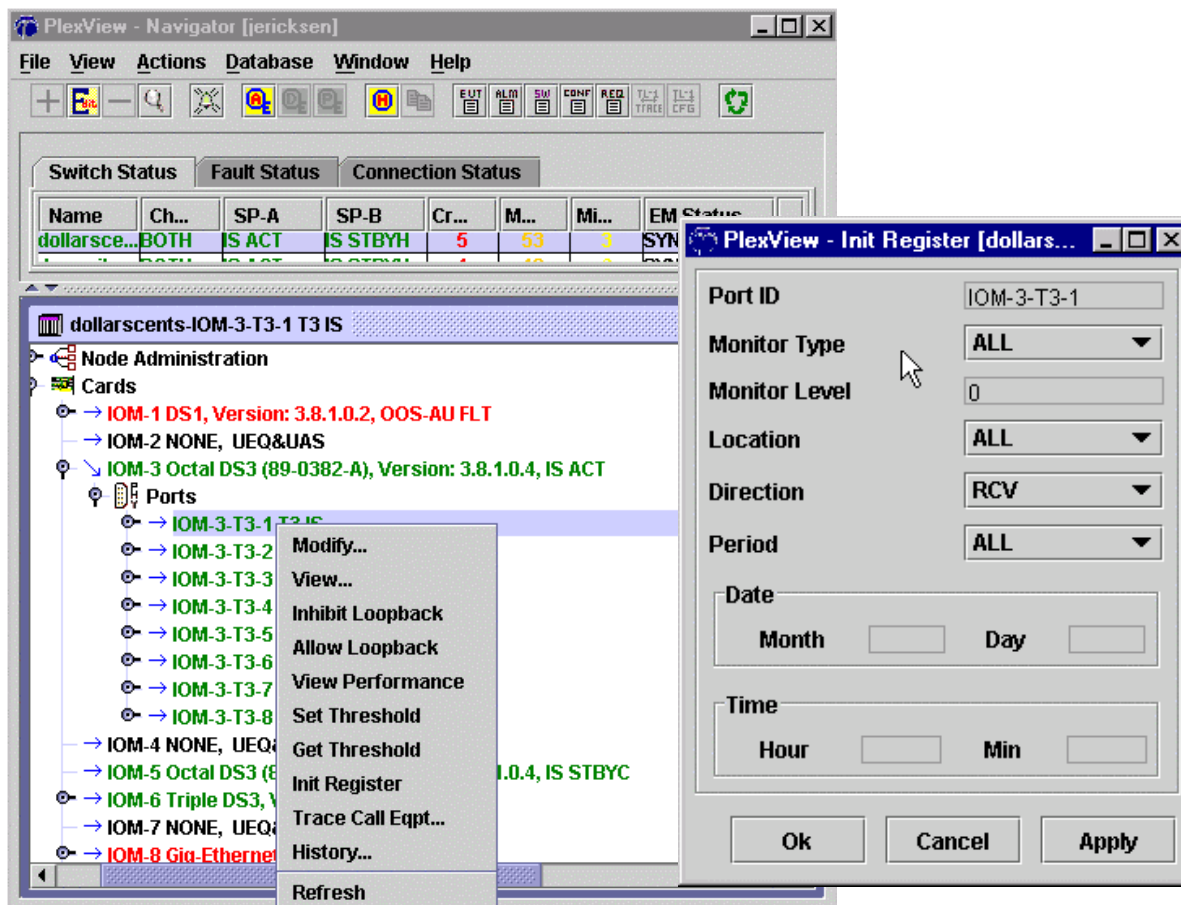


Figure 8. Modify T3 Registers

19. Do you want to initialize other registers?
- If **YES**, then go to [Step 18](#).
If **NO**, then go to [Step 2](#).

20. Initialize thresholds for T3 monitored data. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, and *Ports*. Right-click the desired port and select *Set Threshold*. Make changes if necessary and then click *Ok*. Reference **DLP-538** for detailed information for the command. See [Figure 9](#).

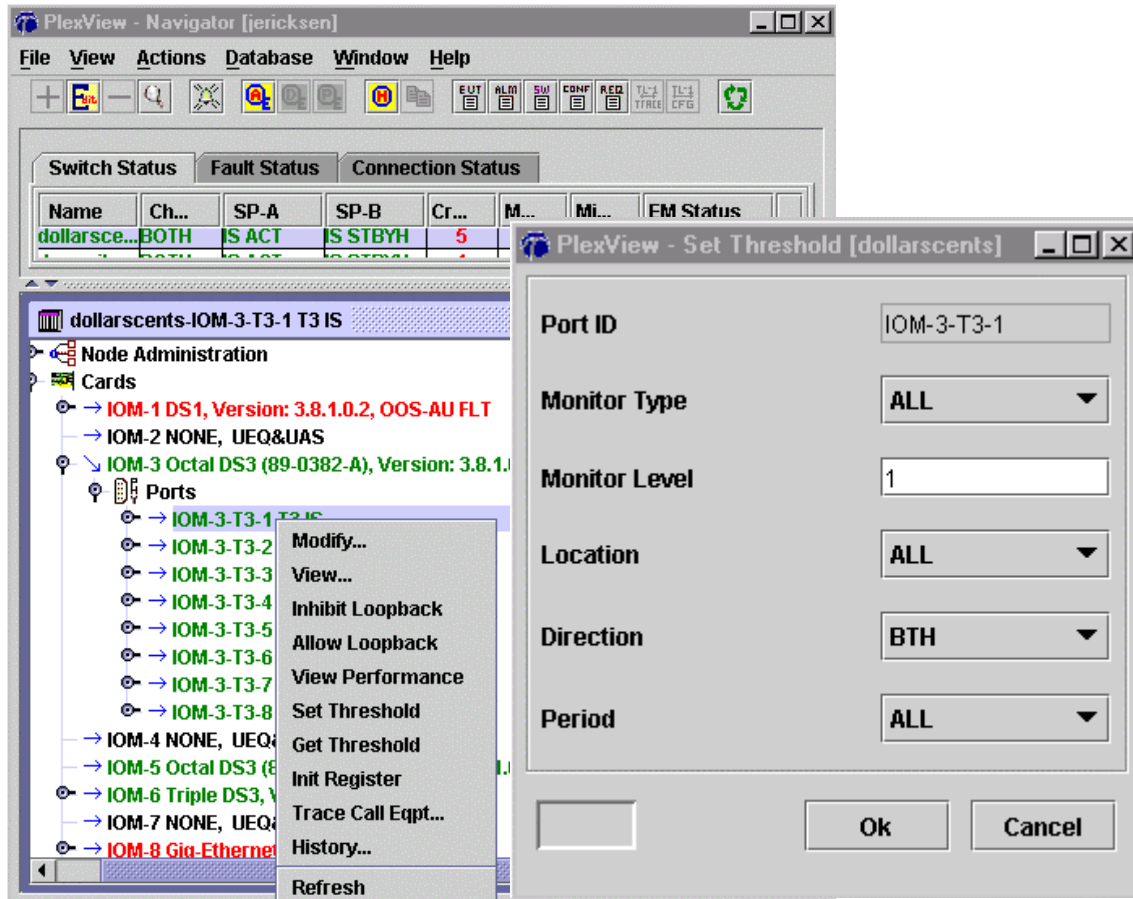


Figure 9. Set T3 PM Thresholds

21. Do you want to set other performance monitoring threshold levels?
If **YES**, then go to [Step 20](#).
If **NO**, then go to [Step 2](#).
22. View thresholds for T3 monitored data. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, and *Ports*. Right-click the desired port and select *Get Threshold*. Make changes if necessary and then click *Ok*. Reference **DLP-538** for detailed information for the command.
23. Do you want to get other performance monitoring threshold levels?
If **YES**, then [Step 22](#).
If **NO**, then go to [Step 2](#).

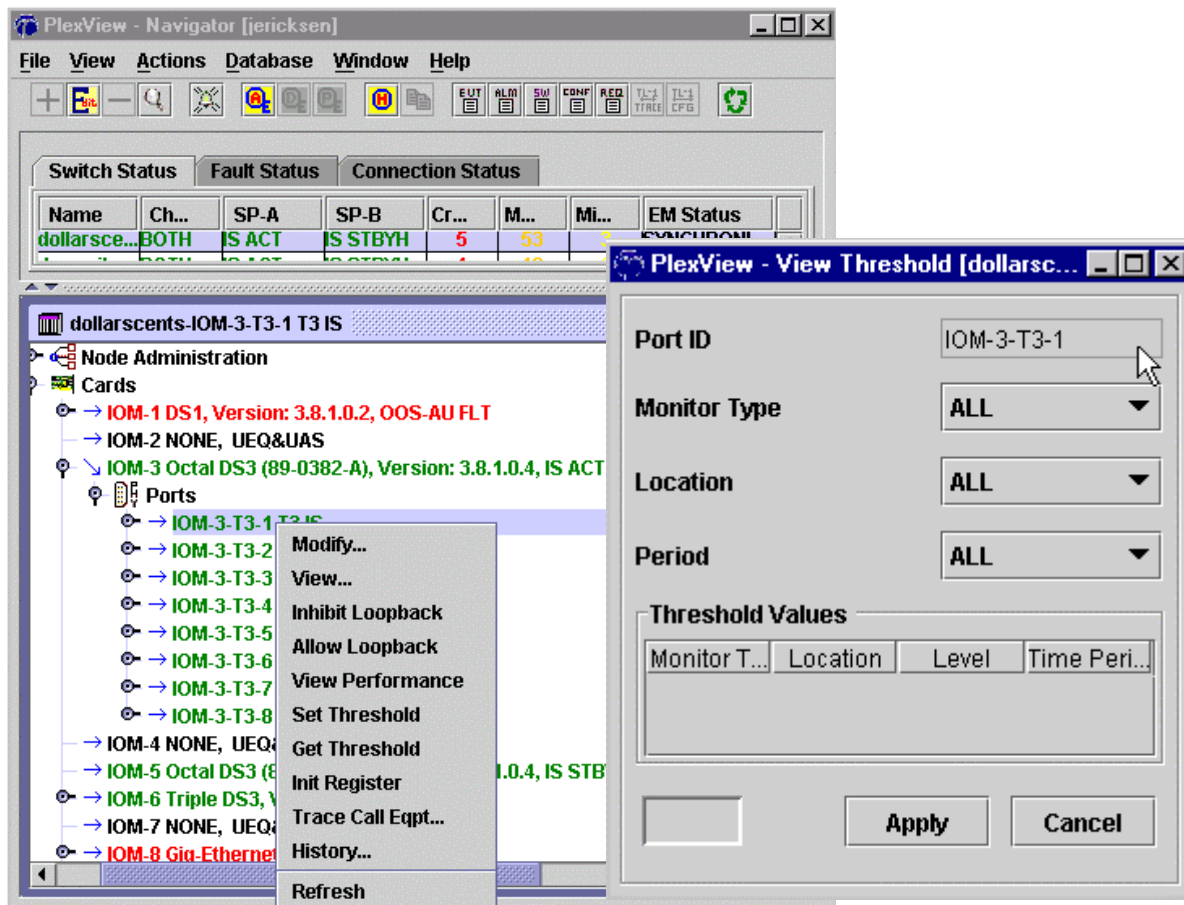


Figure 10. Get T3 PM Thresholds

24. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica:::telica;

25. Select your task from the following and go to the indicated step.

- Retrieve PM data for T1s [Step 27](#)
- Initialize registers for T1s [Step 31](#)
- Set T1 thresholds..... [Step 33](#)
- Retrieve PM data for T3s [Step 35](#)
- Initialize registers for T3s [Step 39](#)
- Set T3 thresholds..... [Step 41](#)
- Finished, no other task in the above list..... continue to the next step.

26. **YOU HAVE COMPLETED THIS PROCEDURE.**



Note: Performance monitoring must be allowed. Reference **DLP-561** to allow if necessary.

PM data cannot be retrieved for DS1 IOMs.

27. Retrieve current and historical performance data related to T1s using the RTRV-PM-T1 command. Reference **DLP-537** for detailed information for the command.

Command Syntax: RTRV-PM-T1:[TID]:<pm_id>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>],[<tmper>],[<mondatt>],
[<montm>];

Command Example: RTRV-PM-T1::IOM-2-T3-1-PORT-1;

Output Example:

```
telica 2003-02-13 13:38:11
M 0 COMPLD
  "IOM-2-T3-1-PORT-1:MONTYPE=AISS-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=15-MIN,
MONDAT=11-07,MONTM=23-00"
  "IOM-2-T3-1-PORT-1:MONTYPE=ES-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=15-MIN,
MONDAT=11-07,MONTM=23-00"
  "IOM-2-T3-1-PORT-1:MONTYPE=SES-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=15-MIN,
MONDAT=11-07,MONTM=23-00"
  "IOM-2-T3-1-PORT-1:MONTYPE=SAS-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=24-HR,
MONDAT=11-07,MONTM=00-00"
  "IOM-2-T3-1-PORT-1:MONTYPE=AISS-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=24-HR,
MONDAT=11-07,MONTM=00-00"
  "IOM-2-T3-1-PORT-1:MONTYPE=ES-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=24-HR,
MONDAT=11-07,MONTM=00-00"
  "IOM-2-T3-1-PORT-1:MONTYPE=SES-P,MONVAL=1,
VLDTY=PRTL,LOCN=NEND,DIRN=BTH,TMPER=24-HR,
MONDAT=11-07,MONTM=00-00"
/* RTRV-PM-T1 */
;
```

28. Analyze the retrieved information. Does a monitored type have a large number of errors?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 30](#).

29. Determine the reason for errors (cabling, problem at far end, bad module) and correct.

30. Do you want to retrieve data for another T1?

If **YES**, then go to [Step 27](#).

If **NO**, then go to [Step 25](#).

31. Initialize one or more storage registers or event counters associated with specific T1 ports in the Plexus 9000 using the **INIT-REG-T1** command. Reference **DLP-537** for detailed information for the command.

Command Syntax: **INIT-REG-T1:[TID]:<entity_id>:[CTAG]::**
<montype>,[<monval>],[<locn>],[<dirn>],
[<tmper>],[<mondatt>],[<montm>];

Command Example: **INIT-REG-T3::IOM-1-T3-1;**

32. Do you want to initialize other registers?

If **YES**, then go to [Step 31](#).

If **NO**, then go to [Step 25](#).

33. Initialize thresholds for T1 monitored data using the **SET-TH-T1** command. Reference **DLP-537** for detailed information for the command.

Command Syntax: **SET-TH-T1:[TID]:<pm_id>:[CTAG]::**
<montype>,<thlev>,[<locn>],[<dirn>],
[<tmper>];

Command Example: **SET-TH-T1::IOM-1-PORT-1:::ALL,1000,**
NEND,15-MIN;

34. Do you want to set other performance monitoring threshold levels?

If **YES**, then go to [Step 33](#).

If **NO**, then go to [Step 25](#).

35. Retrieve current and historical performance data related to T3s using the RTRV-PM-T3 command. Reference **DLP-538** for detailed information for the command.

Command Syntax: RTRV-PM-T3:[TID]:<pm_id>:[CTAG]::
[<montype>],[<monlev>],[<locn>],
[<dirn>],[<tmper>],[<mondatt>],
[<montm>];

Command Example: RTRV-PM-T3::IOM-1-T3-1;

Output Example:

```
telica 2003-02-13 13:38:11
M 0 COMPLD
  "IOM-1-T3-1:MONTYPE=ESL,MONVAL=259,VLDTY=PRTL,
  LOCN=NEND,DIRN=BTH,TMPER=15-MIN,MONDAT=11-07,
  MONTM=09-34"
.
.
.
  "IOM-1-T3-1:MONTYPE=UASP-P,MONVAL=33535,VLDTY=PRTL,
  LOCN=NEND,DIRN=BTH,TMPER=24-HR,MONDAT=11-06,
  MONTM=00-00"
/* RTRV-PM-T3 */
;
```

36. Analyze the retrieved information. Does a monitored type have a large number of errors?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 38](#).

37. Determine the reason for errors (cabling, problem at far end, bad module) and correct.

38. Do you want to retrieve data for another T3?

If **YES**, then go to [Step 35](#).

If **NO**, then go to [Step 25](#).

39. Initialize one or more storage registers or event counters associated with specific T1 ports in the Plexus 9000 using the INIT-REG-T3 command. Reference **DLP-538** for detailed information for the command.

Command Syntax: INIT-REG-T3:[TID]:<entity_id>:[CTAG]::
<montype>,[<monval>],[<locn>],[<dirn>],
[<tmper>],[<mondatt>],[<montm>];

Command Example: INIT-REG-T3::IOM-1-T3-1;

40. Do you want to initialize other registers?

If **YES**, then go to [Step 39](#)

If **NO**, then go to [Step 25](#).

41. Initialize thresholds for T1 monitored data using the SET-TH-T1 command. Reference **DLP-538** for detailed information for the command.

Command Syntax: SET-TH-T1:[TID]:<pm_id>:[CTAG]::
<montype>,<thlev>,[<locn>],[<dirn>],
[<tmper>;

Command Example: SET-TH-T1::IOM-1-PORT-1:::ALL,1000,
NEND,15-MIN;

42. Do you want to set other performance monitoring threshold levels?

If **YES**, then go to [Step 41](#).

If **NO**, then go to [Step 25](#).

MLP-710 – SWITCH OR SCHEDULE A SWITCH TO PROTECTION

SUMMARY: This procedure provides steps to switch an IOM to protection or to schedule a switch. If you want to check IOMs by failing them over, Telica's recommendation is that each week one TDM (DS1 or DS3) IOM be switched to the protection and then restored.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1 commands, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Commands Reference Guide*.



Note: If using the EMS, some screens may differ from those illustrated depending upon the software version of the switch.



Note: If you want to check IOMs by failing them over, Telica's recommendation is that each week one TDM (DS1 or DS3) IOM be switched to the protection and then restored. Each week a different IOM should be switched to protection and restored. If the Plexus had ten working DS1 and DS3 IOMs, then an IOM would be switched to protection every tenth week. If there are four or less TDM IOMs, you can schedule the failovers.

1. Are you going to be using the EMS or TL1 to switch or schedule a switch to protection?
If using the **EMS**, then continue to the next step.
If using **TL1**, then go to [Step 11](#).
2. Are you going to switch an IOM to protection or schedule a failover?
If you are going to **switch an IOM**, then continue to the next step.
If you are going to **schedule a failover**, then go to [Step 6](#).
3. Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Double click *Cards*. Right-click the IOM you want to switch to protection and then select *Switch to Protection*. See [Figure 1](#).
4. Wait a minute and then right-click the protection IOM you want to switch back to working and then select *Switch to Working*.
5.  **YOU HAVE COMPLETED THIS PROCEDURE.**

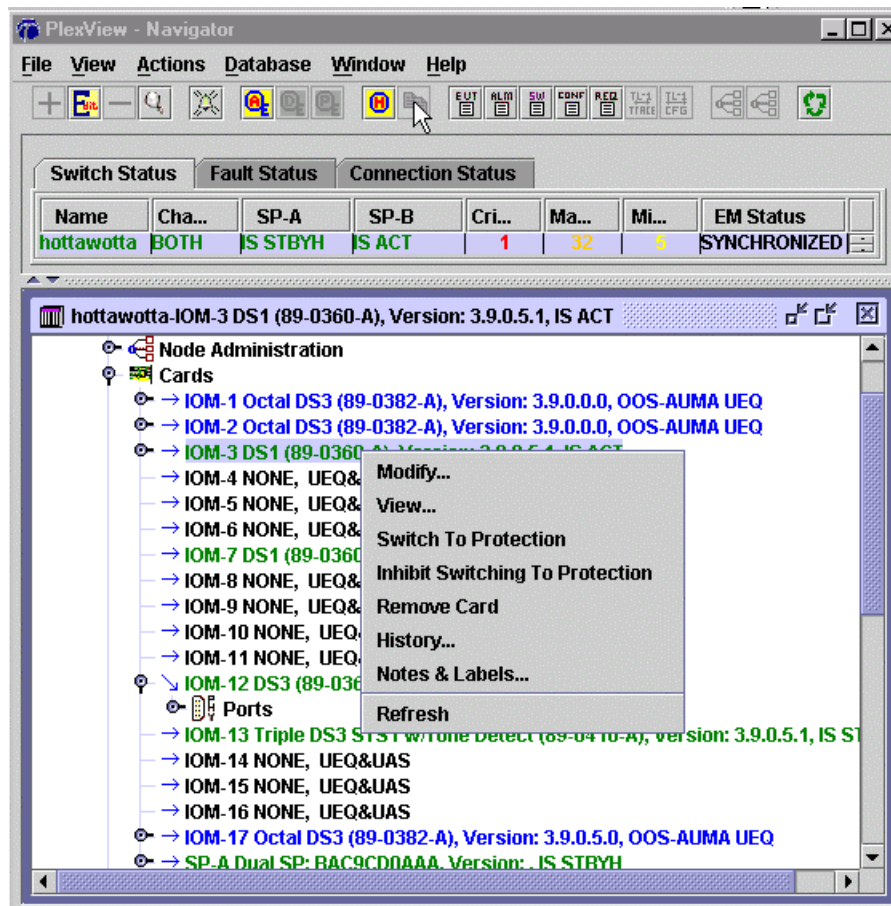


Figure 1. Switch to Protection

6. Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Double click *System Services*, double-click *Schedule Exercise* to display IOMs.
7. Right-click the IOM you want to schedule and select *Modify*. See Figure 2.
8. Select the frequency and period of the interval, the start time and the number of intervals. Then select *Apply*.
9. Do you want to schedule another IOM?

If **YES**, then go to [Step 7](#).

If **NO**, then continue to the next step.

10.  **YOU HAVE COMPLETED THIS PROCEDURE.**

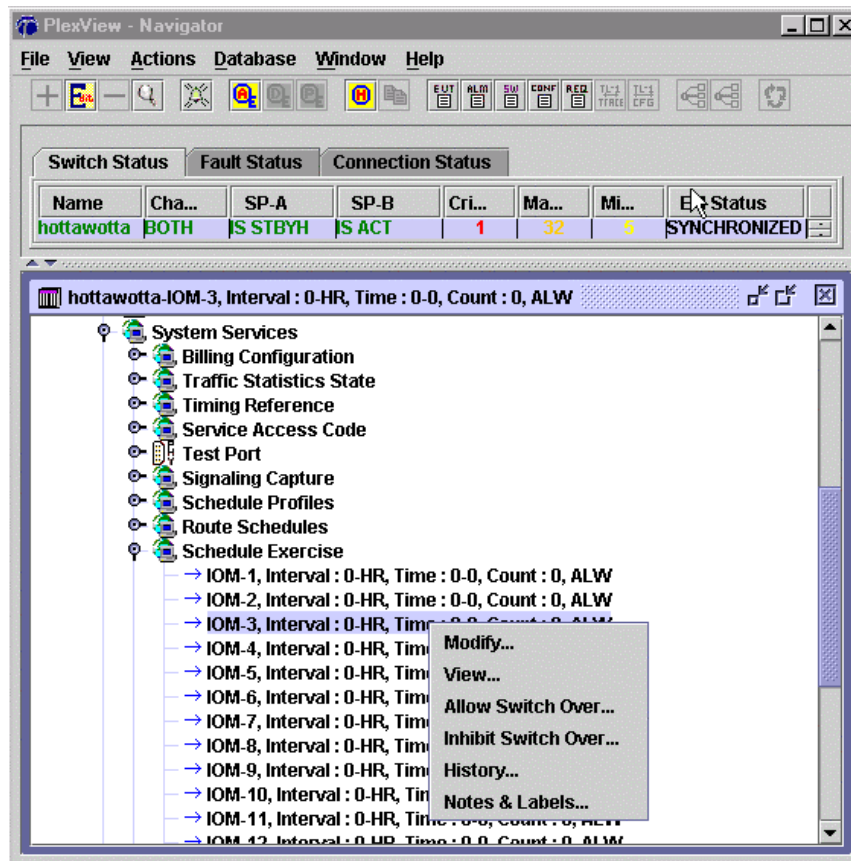


Figure 2. Schedule Exercise

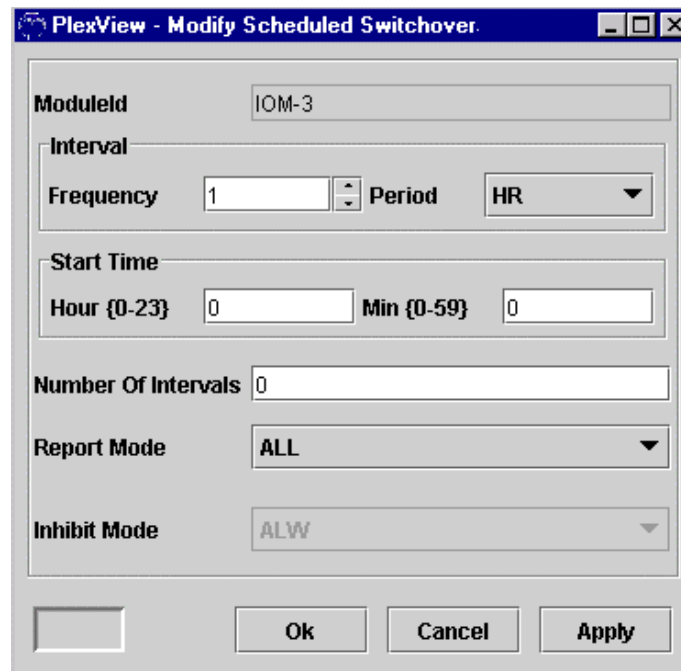


Figure 3. Schedule Parameters

11. If not already logged into the Plexus, telnet to the working processor and log on using the **ACT-USER** command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

Command Example: ACT-USER::telica:::telica;

12. Are you going to switch an IOM to protection or schedule a failover?

If you are going to **switch an IOM**, then continue to the next step.

If you are going to **schedule a failover**, then go to [Step 18](#).

13. Switch the IOM (scheduled for this week) to protection using the SW-TOPROTN-EQPT command.

Command Syntax: SW-TOPROTN-EQPT:[TID]:<iomOrSp>:
[CTAG]::[<mode>],[<protid>],[<dirn>;

Parameters:

iomOrSp = IOM-{1 . . . 17} – I/O Module

= SP-{A|B} – System Processor

mode = Not currently supported

protid = Not currently supported

dirn = Not currently supported

Command Example: SW-TOPROTN-EQPT::IOM-1;

14. Retrieve the equipment status using the RTRV-EQPT command.

Command Syntax: RTRV-EQPT:[TID]:[<iomOrSp>]:[CTAG];

Command Example: RTRV-EQPT;

15. Ensure the protection module is now the working module before proceeding. Repeat previous step if necessary.

16. Switch the IOM back to working using the SW-TOWKG-EQPT command.

Command Syntax: SW-TOWKG-EQPT:[TID]:<sw_id>:[CTAG]::
[<mode>],[<dirn>;

Command Example: SW-TOWKG-EQPT::IOM-1;

17.  **YOU HAVE COMPLETED THIS PROCEDURE.**

18. Set up a schedule for a failover of the system using the SCHED-EX-EQPT command. Reference **DLP-611** for detailed information for the command.

Command Syntax: SCHED-EX-EQPT:[TID]:<iomOrSp>:[CTAG]::
[<invl>],[<statm>],[<numinvl>],
[<reptmode>;

Command Example: SCHED-EX-EQPT::IOM-1:::24-DAY,
2-00,1000;

Comment: The above example schedules an IOM protection switch once a month at 2 AM until the schedule is changed.

19. Is there another IOM for which to schedule a failover?

If **YES**, then go to [Step 18](#).

If **NO**, then continue to the next step.

20.  **YOU HAVE COMPLETED THIS PROCEDURE.**

NOTES:

3. Troubleshooting Overview

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3.1 Overview of Troubleshooting

The section provides strategies for troubleshooting problems you may encounter when operating the Plexus 9000, its related hardware, and system software.

3.1.1 Defining Troubleshooting

In this section, troubleshooting covers:

- Determination of a problem
- Procedures for fixing a known problem
- Strategies for reducing or preventing further occurrences of a problem
- Methods for preventing a problem are located in the Maintenance section of this manual

3.1.2 Troubleshooting Assumptions

To troubleshoot problems on a Plexus 9000, it is assumed you have:

- Experience in configuring and managing telephony switching equipment
- A working knowledge of the Plexus 9000
- An understanding of protocols running on the Plexus system
- Knowledge of using TL1 commands to provision and retrieve equipment information
- Knowledge of the use of test equipment and tools

3.2 Troubleshooting Process

A successful troubleshooting process helps you find a solution to your problem in a cost-effective, efficient manner; and it helps you to avoid or to reduce downtime. This process includes a series of well-defined steps that help you understand the scope of the problem and how best to make corrections.

These steps involve:

- Identifying the problem and possible causes
- Gather the facts you need to help isolate possible causes and consider possible causes
- Narrowing the problem to its root cause(s)
- Creating a plan of action plan based facts. Begin with the most likely problem and devise a plan in which you correct only one problem.
- Performing the correction or repair
- Testing the repair
- Analyzing the results to determine whether the problem has been resolved
- Recording the solution for future reference

3.2.1 Identifying the Problem

Gather Information

Gather and record information to help determine the nature of the problem. Learn as much as you can about the problem before you attempt to fix it. Try to obtain accurate descriptions of symptoms.

Ask Questions

Use troubleshooting questions as shown in [Table 3-A](#) to help determine what information is relevant to preventing or fixing your problem. When troubleshooting, define the symptoms, identify all potential problems that could be causing the symptoms, and then methodically eliminate each potential problem, from most likely or most serious to the least likely, until the symptoms disappear.

Table 3-A. Information Gathering Questions

Question	Answer
Have you been notified of a problem?	
If yes, who reported the problem?	
Is there a visual indicator such as fault or alarm LED? If so, what is it?	
Is there a disconnected cable or loose connection?	
Is there an excessive bend in a cable?	
Is a front plate installed on every open slot?	
Is there irregular noise?	
Do you know the alarm message(s)?	
What are the alarms or conditions? Determine using the RTRV-ALM or RTRV-COND TL1 command.	
Does the problem appear to be in the Plexus or with external equipment?	
Has anything changed between the last time the system worked normally and the time the problem appeared? This might include provisioning, replacement of module, upgrade of system software to name a few.	
Has regular preventative maintenance been performed as required?	
What is the switch configuration?	
Has the configuration recently changed?	
What is the system software version?	
When was the system software version last upgraded?	
Is the problem intermittent	
How often does it happen?	
What seems to make it more frequent?	
What seems to make it less frequent?	
What makes it (temporarily) go away?	
Describe other symptoms or oddities you have noticed.	

Retrieve Alarm Description

Use TL1 or EMS to obtain alarm reported information. This information should tell you whether the alarm is critical, major or minor and whether it is service affecting. Critical and major alarms typically affect service and should be cleared first. The trouble analysis procedure task index list (TAP-IXL) provides the entire list of alarms that are grouped as critical, major or minor alarm tables. These tables provide additional information such as the condition type (CONDTYPE), the access ID (AID), information about the alarm and which trouble analysis procedure (TAP) to use for fixing the problem.

Record Information

Keep a written description of symptoms, responses and final resolution. This information may be useful for future troubles.

3.2.2 Initiating a Plan of Attack

Before you continue, establish a plan of attack based on your information-gathering assessment. This plan helps you avoid troubleshooting a non-existent problem and decreases the likelihood of complicating an existing problem.

A pre-verification plan should first and foremost include precautions to ensure safety and damage control. Precaution actions include:

- Confirm proper use of EDS equipment
- Backup data
- Handle and examine hardware, switch, IOMs, cables, and other components, with care

3.2.3 Verifying the Problem

For every problem, there may be several explanations for the system's behavior. Gather as much information as possible about a problem. This may include retrieval of alarms or conditions, retrieval of provisioning information, retrieval of status and statistics and information about recent equipment changes.

If the problem is intermittent, try to reproduce the exact problem that was determined by system symptoms and messages and your information-gathering assessment of them. Once the problem is reproduced, you can determine what tasks are involved with narrowing the scope and determining the quality of the fix.

You can start with one or more quick fix or maintenance steps. Check the obvious and perform easy, safe, non time-consuming, inexpensive fixes. Depending on your system configuration and type of problem, easy repair actions could include:

- Replacing filters which is part of monthly maintenance
- Checking cables and connectors which is part of monthly maintenance
- Stopping and restarting EMS service
- Checking a module seating
- Switching a module to protection

3.2.4 Isolating the Problem

Isolating the problem means gradually narrowing down the possible sources of the problem until there is only one possible source. It can also mean determining the most important problem and correcting that first.

Troubleshooting can also involve determining what the problem is not rather than what it is. Tests can verify that a certain part of the system is functioning properly, thereby helping you to narrow down the list of possible problem sources. Refer to the Maintenance chapter for more information about these.

3.2.5 Performing the Repair

If the problem has been accurately identified, a fix can be done. Make sure you perform one corrective task at a time. Repeat the task to ensure that the task corrects the problem. Verify that the task solved the problem before performing the next corrective task.

3.2.6 Verifying the Correction

Test the hardware or software that has been repaired to ensure full functionality has been restored. Aspects of this verification process include:

- Confirming the problem's symptoms are gone
- Determining the right problem cause was eliminated
- Confirming no new problems occurred with this repair
- Recording the solution for future reference

3.3 Preventing Problems

Taking the proper precautionary measures can help avoid repeat and other problems. This section contains tips for reducing or avoiding problems.

- Document the symptom and solution
- Use the information logged from correcting a problem
- Read the release notes and related documentation
- Minimize disruption when installing and upgrading software
- Perform regular system backups which is a maintenance procedure
- Follow proper ESD procedures
- Perform periodic maintenance procedures

4.0 TROUBLE CLEARING TASK INDEX LIST

SUMMARY: This procedure provides steps for obtaining alarm information and provides references to trouble analysis practices for determining the cause and correction of the problems. This task list assumes that the Plexus had been operating error-free previously.

The front of the chassis has three alarm LEDs -- Critical (CR), Major (MJ), and Minor (MN) -- that indicate that there is a problem in the Plexus 9000. When you are logged into the TL1 craft interface, you can retrieve alarm messages, conditions and log reports. Alarms and logs can also be retrieved when using the Element Manager (See PlexView™ Element Management System User Guide for more information.). When using TL1, two or three letter mnemonics indicate the alarm severity when alarms are reported or retrieved. [Table A](#) lists the alarm types or notification codes and a brief description of each. Refer to “Appendix A – Messages” for lists of all messages including normal and informational messages.



Note: The condition types are based on GR-833, Appendix C.

The Critical/Major/Minor categorization is performed per Bellcore 474 R2-29.

Table A. Alarm Types or Notification Codes

Code	Description
CR	Critical alarms are used to indicate that a severe, service-affecting condition has occurred and that immediate corrective action is imperative, regardless of the time of day or day of the week. An access transport entity (e.g., DLC) must generate a critical alarm if more than 128 access lines are out of service.
MJ	Major alarms are used for hardware or software conditions that indicate a serious disruption of service or the malfunctioning or failure of important circuits. These troubles require the immediate attention and response of a craftsperson to restore or maintain system capability. The urgency is less than in critical situations because of a lesser immediate or impending effect on service or system performance. For example, a Public Packet Switched Network (PPSN) trunk “declared link failure” is a major alarm.
MN	Minor alarms are used for troubles that do not have a serious effect on service to customers or for troubles in circuits that are not essential to NE operation. For example, a carrier line problem where transmission was switched to a protection line is a minor alarm because it is non-service-affecting.
NRM	Normal indicates that the report is for an event not for an alarm. Normal will not cause a chassis LED to illuminate.
INF	Informational indicates that the information was logged but no Report (REPT-EVT) is sent and no chassis LED will illuminate.
Note: The Critical/Major/Minor categorization is performed per Bellcore 474 R2-29.	



Note: If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch or the version of EMS.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Perform a visual inspection of the unit.
 - Ensure all modules are installed properly.
 - Ensure all cables are connected properly.
 - Check LEDs on the front of the chassis.
 - Check LEDs on the front of the modules.
3. Is the FAN FAIL LED on the front of the chassis illuminated?

If **YES**, then continue to the next step.
If **NO**, then go [Step 7](#).
4. Check the fan fuses on the lower rear of the chassis. Is a fuse blown or inserted incorrectly?

If **YES**, then replace the blown fuse or insert it correctly and go to [Step 3](#).
If **NO**, then replace the Fan Shelf.

Reference: **DLP-507**
5. Is the FAN FAIL LED still illuminated?

If **YES**, then go to Go to [Step 17](#).
If **NO**, then continue to the next step.
6. Are you going to use a TL1 interface or use the Element Management System (EMS)?

If using **TL1**, then continue to the next step
If using **EMS**, then go to [Step 12](#).



Note: In the following steps, you will log into the craft interface to retrieve alarms or log information.

7. Are you going to access the TL1 interface using the craft port or a Telnet session or are you already logged in?

If **already logged** in, then go to [Step 9](#).

If using the **craft port**, then connect a craft terminal to the craft port on the front of the System Processor card and open the PC VT-100 emulation program.

Reference: **DLP-516**

If using a **Telnet** session, then Telnet to the IP address of the active or working System Processor, entering **2361** for Port and **VT100** for TermType if required.

Reference: **DLP-504**

8. Log on to the system using the **ACT-USER** command.

Command Syntax: **ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;**

parameters:

uid = **telica** {8-16 Alphanumeric characters} user identifier
pid = **telica** {8-16 Alphanumeric characters} user's password
(private identifier).

Command Example: **ACT-USER::telica::telica;**

9. Determine the alarm information by using the craft port interface or a Telnet session.
10. If using craft port connection or a Telnet session, then enter the **RTRV-ALM-<ReptAid>** command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: **RTRV-ALM-ALL;**



Note: Critical and IOM alarms should be cleared first.

11. Locate the alarms and/or conditions, and then go to the designated step and perform the steps to clear the alarm. Alarms are listed in numerical order according to “ID” number. Software version 3.8 and higher support alarm IDs. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table B. CRITICAL ALARMS](#).

If the alarm is a **MAJOR** alarm, then go to [Table C. MAJOR ALARMS](#).

If the alarm is a **MINOR** alarm, then go to [Table D. MINOR ALARMS](#).



Note: In the following steps, you will use EMS to retrieve alarms or log information.

12. Log into the EMS if you are not already logged on.
13. Select the switch for which you will be troubleshooting alarms.
14. In the toolbar, select *Actions*, then *View* and then *Alarms*. Refer to [Figure 1](#).
15. Click the Notification column to sort the alarms from CRITICAL to MINOR.
16. Locate the alarms and/or conditions, and then go to the designated step and perform the steps to clear the alarm. Alarms are listed in numerical order according to “ID” number. Software version 3.8 and higher support alarm IDs. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table B. CRITICAL ALARMS](#).

If the alarm is a **MAJOR** alarm, then go to [Table C. MAJOR ALARMS](#).

If the alarm is a **MINOR** alarm, then go to [Table D. MINOR ALARMS](#).

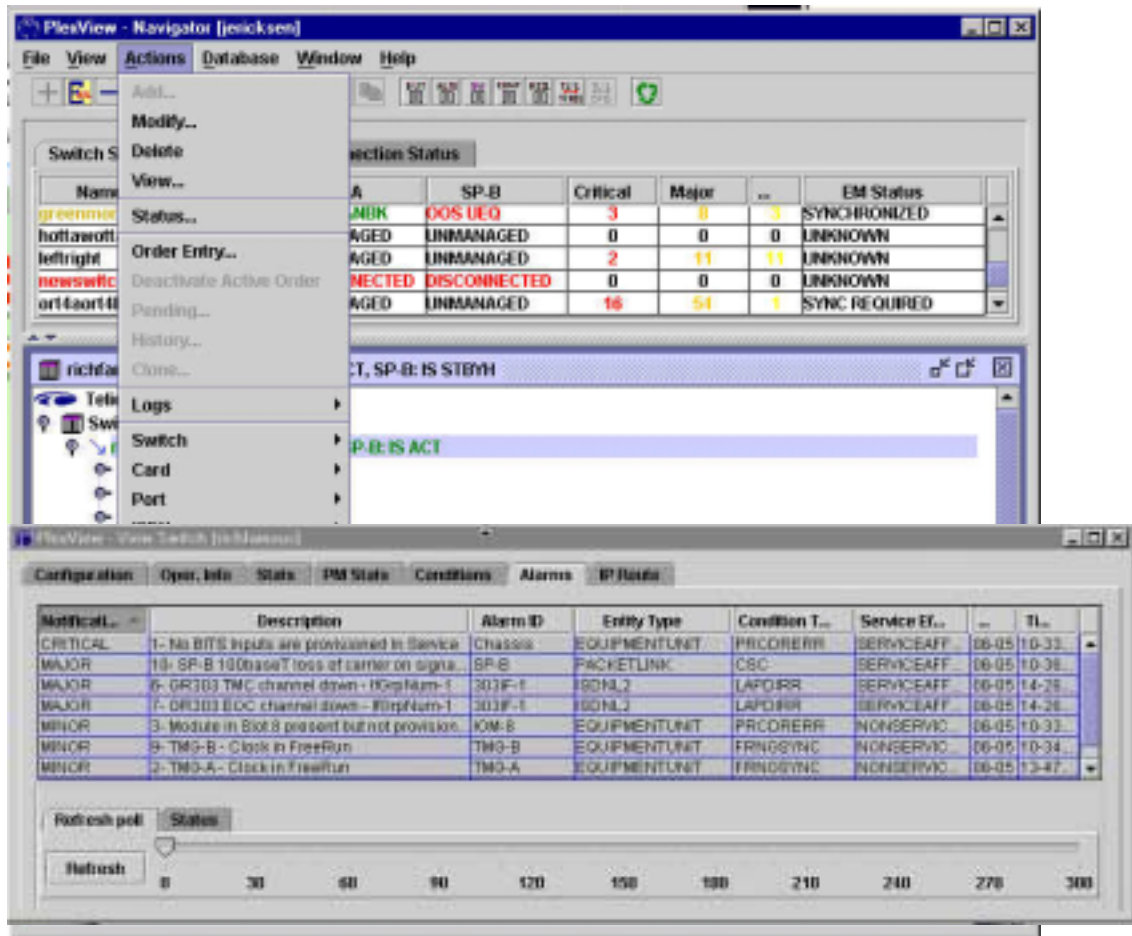


Figure 1. Retrieving Alarms



Note: Alarms span two pages starting on the left or even numbered page going to the right and odd number page.
 Alarms are listed in numerical order according to “ID” number. Software version 3.8 and higher support alarm IDs.
 Alarm IDs followed by asterisk (*) may be critical or major.

Table B. CRITICAL ALARMS

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
21*	The Maintenance Link to the module in slot %d failed to go ready	CONTBUS	EQPT	IOM-%d
23*	Module in slot %d timed out while booting	INTERR	EQPT	IOM-%d
24*	Module in slot %d failed selftest, Status - %d	INTERR	EQPT	IOM-%d
27*	IOM-%d Module CLEI %s does not match provisioned CLEI %s	PRCDRERR	EQPT	IOM-%d
28*	IOM-%d Module SW Rev %s does not match provisioned SW Rev %s	PRCDRERR	EQPT	IOM-%d
29*	Module in slot %d, failed to read id prom	INTERR	EQPT	IOM-%d
30*	Module in slot %d, timeout waiting for id prom read	INTERR	EQPT	IOM-%d
38*	IOM-%d rear module does not match front module	PRCDRERR	EQPT	IOM-%d-REAR
45*	Module in slot %d has a TSU or FSU Fault	CONTCOM	EQPT	IOM-%d
46*	Module in slot %d has a TSU or FSU MLBA Parity Error	CONTCOM	EQPT	IOM-%d
47*	Module in slot %d has a MLINK Fault	CONTBUS	EQPT	IOM-%d
54*	Module in slot %d failed to go ready	CONTCOM	EQPT	IOM-%d
56*	Module in slot %d failed to restore to service	CONTCOM	EQPT	IOM-%d
57*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d-REAR
58*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d-REAR
59*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d
60*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d
73	Module in slot %d failed to failover to slot %d	INTERR	EQPT	IOM-%d
74*	Module in slot %d faulted, %s(%d)	INTERR	EQPT	IOM-%d

ID	INFORMATION for Critical Alarms	GO TO
21*	Indicates the maintenance link to the module did not clear its error status in the allotted time. Faulted hardware on the indicated module or faulted SF.	Go to Step 17 .
23*	Indicates the IOM never indicated that it passed diagnostics and booted the Operational Code. Faulted IOM.	Go to Step 17 .
24*	Indicates a module failed power-on diagnostics. There status code indicates which diagnostic test failed. A component fault on the IOM or an external stimulus causing a misdiagnosis.	Go to Step 17 .
27*	Indicates that the incorrect module type was inserted in an IOM slot.	Go to TAP-101.
28*	Indicates the IOM does not have the correct software image in non-volatile storage.	Go to Step 17 .
29*	Indicates the device that holds the equipment identification code and version information cannot be read by the system processor. Faulted IOM	Go to Step 17 .
30*	Indicates the device that holds the equipment identification code and version information cannot be read by the system processor. Faulted IOM	Go to Step 17 .
38*	Indicates the incorrect type of rear module is in the slot of a front module. For example, a DS1 rear module has been plugged into a slot of a DS3 front module.	Go to TAP-101.
45*	Indicates the To or From Switch Unit on the IOM is faulted. Faulted IOM	Go to Step 17 .
46*	Indicates the To or From Switch Unit on the IOM is faulted with a bus parity error. Faulted IOM or corrupted software image on IOM.	Go to Step 17 .
47*	Indicates the Maintenance Link serial connection from the SF to the IOM is faulted. Faulted IOM.	Go to Step 17 .
54*	Indicates the module booted but communications through the switch fabric could not be established. A component fault on the IOM that was not caught by diagnostics.	Go to Step 17 .
56*	Indicates the module booted and communications from the SP to the IOM was established, the module failed to accept the configuration state. Faulted IOM or SF.	Go to Step 17 .
57*	The rear module in a slot has been removed from the chassis or is not detected to be present. Operator Error or faulted IOM.	Go to TAP-101.
58*	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to TAP-102.
59*	Indicates the rear module is missing (either not detected to be in the chassis or not in the chassis). To get this alarm, the front module must be provisioned and present in the chassis.	Go to TAP-101.
60*	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to TAP-102.
73	Indicates the process to configure the protection module failed. Software bug or a component fault on the IOM that was not caught by diagnostics.	Go to Step 17 .
74*	Indicates the IOM detected a fatal fault; either the CPU subsystem failed, or a device failed, or the software state is corrupt. Faulted IOM or SF	Go to Step 17 .

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
75	Module in slot %d – not operational but provisioned as in-service	INTERR	EQPT	IOM-%d
77*	Module in slot %d timeout while adding	INTERR	EQPT	IOM-%d
104*	SP-%c lost heartbeat to %s	PROGFLT	COM	SP-%c
116*	Lost heartbeat with IOM-%d	CONTCOM	EQPT	IOM-%d
119	IOM-%d excessive port failures	CONTCOM	T1	IOM-%d
127*	IOM-%d is not responding to messages	PROGFLT	EQPT	IOM-%d
158*	IOM-%d Receiving Errors from both SFs	PAINTGRT	EQPT	IOM-%d
167*	IOM-%d-PORT-%d Device Error	FRMR	EQPT	IOM-%d-PORT-%d
170*	IOM-%d - not responding to messages from SP	INTMSGERR	COM	IOM-%d
194*	IOM-%d faulted - %s	SFT	EQPT	IOM-%d
195*	IOM-%d Device Error	FRMR	EQPT	IOM-%d
196*	IOM-%d - not responding to messages from SP	INTMSGERR	COMt	IOM-%d
200*	%d Device Error	FRMR	EQPT	IOM-%d-T3-%d
201	%s Loss of Signal	LOS	T3	IOM-%d-T3-%d
203	%s Loss of Frame	LOF	T3	IOM-%d-T3-%d
205	%s Alarm Indication Signal	AIS	T3	IOM-%d-T3-%d
207	%s Remote Alarm Indication	RAI	T3	IOM-%d-T3-%d
218*	%d Device Error	FRMR	EQPT	IOM-%d-STS1-%d
219	%s Loss of Signal	LOS	STS1	IOM-%d-STS1-%d
221	%s Loss of Frame	LOF	STS1	IOM-%d-STS1-%d
223	%s Alarm Indication Signal (Path)	AIS-P	STS1	IOM-%d-STS1-%d
225	%s Remote Alarm Indication (Path)	RAI-P	STS1	IOM-%d-STS1-%d
227	%s Alarm Indication Signal (Line)	AIS-L	STS1	IOM-%d-STS1-%d

ID	INFORMATION for Critical Alarms	GO TO
75	Indicates a module that was provisioned but is autonomously out of service. IOM may be faulted or missing.	Go to TAP-102.
77*	Indicates the IOM did pass diagnostics but failed to take configuration commands from the System Processor. Software Version mis-configuration, corrupt software image or faulted hardware on the IOM.	Go to Step 17.
104*	Indicates a software process on the SP is not responding. Software fault on the indicated SP or hardware fault on the front SP module.	Go to Step 17.
116*	Indicates the communications between the SP and the IOM have failed. A fault on the IOM's CPU causing it not to respond or a switch fabric failure.	Go to Step 17.
119	This alarm is obsolete. It was used to indicate that there are more than 5 T1's out of service.	Go to Step 17.
127*	Indicates a software error. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
158*	Indicates the maintenance link on the IOM is detecting framing errors from both SF modules. Faulted IOM or faulted timing module on working SP or faulted SF.	Go to Step 17.
167*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
170*	Indicates that applications on the IOM (framer driver or layer 2 signaling) are not returning acknowledges to commands even though communication with the IOM is functioning. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
194*	Indicates a software error. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
195*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
196*	Indicates a software error. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
200*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
201	Indicates there is no input signal on a T3. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
203	Indicates there is framing cannot be detected on a input signal for a T3. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
205	Indicates receiving a T3 Alarm Indication Signal from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
207	Indicates receiving a T3 Remote Alarm Indication from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
218*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
219	IOM-%d-STs1-%d Loss of Signal. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
221	IOM-%d-STs1-%d Loss of Frame. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
223	IOM-%d-STs1-%d Alarm Indication Signal (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
225	IOM-%d-STs1-%d Remote Defect Indication (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
227	IOM-%d-STs1-%d Alarm Indication Signal (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
229	%s Remote Alarm Indication (Line)	RDI-L	STS1	IOM-%d-STS1-%d
231	%s Loss of Pointer (Path)	LOP-P	STS1	IOM-%d-STS1-%d
233	%s Unequipped (Path)	UNEQ-P	STS1	IOM-%d-STS1-%d
235	%s Payload Mismatch (Path)	PLM-P	STS1	IOM-%d-STS1-%d
237	%s Remote Failure Indication (Path)	RFI	STS1	IOM-%d-STS1-%d
239	%s Remote Failure Indication (Line)	RFI-L	STS1	IOM-%d-STS1-%d
241	%s Trace Id Mismatch cleared	TIM	STS1	IOM-%d-STS1-%d
243	%s Payload Defect Indication (Path)	PDI-P	STS1	IOM-%d-STS1-%d
245	%s Parity Error	EXT	STS1	IOM-%d-STS1-%d
253*	%s Device Error	FRMR	EQPT	IOM-%d-%s-PORT-%d
266	%s Loss of Pointer (Vt)	LOP-V	T1	IOM-%d-%s-PORT-%d
268	%s Unequipped (Vt)	UNEQ-V	T1	IOM-%d-%s-PORT-%d
270	%s Payload Mismatch (Vt)	PLM-V	T1	IOM-%d-%s-PORT-%d
272	%s Remote Defect Indication (Vt)	RDI-V	T1	IOM-%d-%s-PORT-%d
274	%s Payload Defect Indication (Vt)	PDI-V	T1	IOM-%d-%s-PORT-%d
300	All BITS Inputs have failed	SYNCOOS	T1	TMG-5%c
302	No BITS Inputs are provisioned In-Service	PRCDRERR	EQPT	CHASSIS
420	MTP3 - PAUSE - PC %s	CCSNETIRR	COM	PC-%s
648	IOM-%d-%d Loss of Signal	LOS	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
650	IOM-%d-%d Loss of Frame	LOF	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
652	IOM-%d-%d Alarm Indication Signal	AIS	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
654	IOM-%d-%d Remote Alarm Indication	RAI	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d

ID	INFORMATION for Critical Alarms	GO TO
229	IOM-%d-STS1-%d Remote Defect Indication (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
231	Indicates the receiver on an STS1 interface cannot find a valid pointer in the data stream. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
233	Indicates the receiver on an STS1 interface indicates that the framing indicates an unequipped payload. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
235	Payload Mismatch (Path). Indicates the receiver on an OC3 or OC12 interface is receiving a payload type that is not ATM cells. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
237	Remote Failure Indication (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
239	Remote Failure Indication (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
241	Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
243	Payload Defect Indication (Path). Indicates a payload defect indication alarm in an STS1 signal carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
245	Parity Error. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
253*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17 .
266	Indicates the receiver on a T1 of an OC3 or OC12 interface cannot find a valid pointer in the data stream. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
268	Indicates the receiver on a T1 of an OC3 or OC12 interface indicates that the framing indicates an unequipped payload. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
270	Indicates the receiver on a T1 of an OC3 or OC12 interface is receiving a payload type that is not ATM cells. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
272	Indicates a VT1.5 alarm in a signal carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
274	Indicates a payload defect indication alarm in a signal carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
300	Indicates both timing inputs are Out-Of-Service, for example LOS, LOF. This could either be on the 2 T1 BITS inputs on the back the chassis or IOM inputs if line timing is being used.	Go to TAP-104.
302	Indicates the operators have not provisioned a timing source for the chassis.	Go to TAP-104.
420	Destination is inaccessible to MTP3 as determined by routing managementFailure on a remote Point Code device (SCP, SSP), link failures, faulted IOM.	Go to TAP-106.
648	Indicates the receiver on an OC3 or OC12 interface is NOT detecting a signal. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
650	Indicates the receiver on an OC3 or OC12 interface is NOT detecting framing. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
652	Indicates the receiver on an OC3 or OC12 interface is detecting AIS from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
654	Indicates the receiver on an OC3 or OC12 interface is detecting RAI from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
656	IOM-%d-%d Loss of Pointer	LOP	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
658	IOM-%d-%d Unequipped	UNEQ-P	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
660	IOM-%d-%d Payload Mismatch	PLM-P	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
674	STATS - SP-%c error encountered opening record buffer or buffer maint file	PROGFLT	COM	SP-%c
675	STATS - SP-%c error encountered reading or writing record buffer file	PROGFLT	COM	SP-%c
676	STATS - SP-%c error record buffer or buffer maint of incorrect length	PROGFLT	COM	SP-%c
677	STATS - SP-%c error encountered reading or writing buffer maint file	PROGFLT	COM	SP-%c
681	STATS - error %c, stats init failure creating or attaching shared memory	PROGFLT	COM	SP-%c
686	BILLING - SP-%c error encountered opening record buffer or buffer maint file	PROGFLT	COM	SP-%c
687	BILLING - SP-%c error encountered reading or writing record buffer file	PROGFLT	COM	SP-%c
688	BILLING - SP-%c error record buffer or buffer maint of incorrect length	PROGFLT	COM	SP-%c
689	BILLING - SP-%c error encountered reading or writing buffer maint file	PROGFLT	COM	SP-%c
693	BILLING - SP-%c error %d, billing init failure creating or attaching shared memory	PROGFLT	COM	SP-%c
702	Failed to Initialize H.248 - No Signaling IP provisioned	PRCDERR	COM	COM
704	Service change with MGC - %s failed	GP	COM	COM
831*	Module in slot %d timed out during audio download	INTERR	EQPT	IOM-%d
832*	Module in slot %d failed during audio download	INTERR	EQPT	IOM-%d
834*	Module in slot %d has an IFE or EFE Fault	CONTCOM	EQPT	IOM-%d
844*	IOM-%d SwVer-%s is incompatible with SP-%c SwVer-%s	PRCDRERR	EQPT	IOM-%d
850	Restore performed - INIT-SYS required for correct operation	PRCDRERR	COM	SP-%c
862	%s Loss of Signal	LOS	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
864	%s Loss of Frame	LOF	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d

ID	INFORMATION for Critical Alarms	GO TO
656	Indicates the receiver on an OC3 or OC12 interface cannot find a valid pointer in the data stream. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
658	Indicates the receiver on an OC3 or OC12 interface indicates that the framing indicates an unequipped payload. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
660	Indicates the receiver on an OC3 or OC12 interface is receiving a payload type that is not ATM cells. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
674	Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
675	Indicates a software file access error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
676	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
677	Indicates a software file access error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
681	Indicates a software initialization error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
686	Indicates a software initialization error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
687	Indicates a software file access error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
688	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
689	Indicates a software file access error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
693	Indicates a software initialization error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
702	Indicates the signaling IP address was not configured using ED-CHASSIS-EQPT.	Go to TAP-103.
704		Go to Step 17 .
831*	Indicates the IOM timed out during audio download. Faulted IOM.	Go to Step 17 .
832*	Indicates a module failed during audio download. A component fault on the IOM or faulted IOM.	Go to Step 17 .
834*	Indicates an FPGA fault on the PNA or GigE IOM. The FPGAs are the Ingress Forwarding Engine (IFE) and Egress Forwarding Engine (EFE). Malformed or high levels of IP traffic may have put the forwarding engine logic in an unexpected state.	Go to Step 17 .
844*	Verify software versions of SP and IOM.	Go to Step 17 .
850	In process of upgrading software.	Go to TAP-102.
862	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Loss of Signal. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
864	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Loss of Frame. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
866	%s Alarm Indication Signal (line)	AIS-L	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
868	%s Remote Defect Indication (line)	RDI-L	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
870*	%s Device Error	FRMR	EQPT	IOM-%d-OC3-%d or IOM-%d-OC12-%d
897*	IOM-%d-ENET-%d Device Error %d	FRMR	EQPT	IOM-%d-ENET-%d
891	IOM-%d-ENET-%d Loss of Signal	LOS	ENET	IOM-%d-ENET-%d
893	IOM-%d-ENET-%d Loss of IP connectivity	EXT	ENET	IOM-%d-ENET-%d
895	IOM-%d-ENET-%d No ARP response from Far End	EXT	ENET	IOM-%d-ENET-%d
907	M3UA - PAUSE - PC %s	CCSNETIRR	COM	PC-%s
926	M3UA - SP-%c - Remote Node Unreachable - ChassisId %d SP-%c	EXT	COM	COM
931	SP-%c Incorrect Times Ten schema version	SFT	COM	SP-%c
932	SP-%c Persistent database Main daemon halted	SFT	COM	SP-%c
933	SP-%c Persistent database Main daemon exited	SFT	COM	SP-%c
934	SP-%c Persistent database Replication daemon exited	SFT	COM	SP-%c
976	IOM-%d-%s Loss of IP Connectivity	LOF	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
1055	M3UA - SP-%c - Remote Node Unreachable - PC-%d-%d-%d-SP-%c	EXT	COM	COM
1066	IOM-%d-%s No Inverse ARP from the Far End	EXT		IOM-%d-OC3-%d or IOM-%d-OC12-%d
1073	IOM-%d-%s Inverse ARP: Remote Peer IP %s mismatch	EXT		IOM-%d-OC3-%d or IOM-%d-OC12-%d
1082	SP-%c Lost hardware mastership	CONTCOM	EQPT	SP-%
1085*	IOM-%d TSU %s Error -%s	CONTCOM	COM	IOM-%d
1088	IOM-%d APC-%d Receiving Switch Fabric Violations from both SFs	PAINTGRT	EQPT	SF-\$c, IOM-%d
1089	IOM-%d APC-%d Receiving Switch Fabric Violations from SF-%c	PAINTGRT	EQPT	SF-\$c, IOM-%d
1090	IOM-%d APC-%d Receiving Switch Fabric Parity Errors from both SFs	PAINTGRT	EQPT	SF-\$c, IOM-%d
1091	IOM-%d APC-%d Receiving Switch Fabric Parity Errors from SF-%c	PAINTGRT	EQPT	SF-\$c, IOM-%d
1093	Administrative failover from SP-%c to SP-%c failed	PROGFLT	EQPT	SP-%c

ID	INFORMATION for Critical Alarms	GO TO
866	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Alarm Indication Signal (line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
868	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Remote Defect Indication (line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
870*	%s Device Error. Faulted IOM	Go to Step 17.
897*	IOM-%d-ENET-%d Device Error %d. IOM faulted or misprovisioned	Go to Step 17.
891	Loss of ENET signal. Network is down or router/cabling problem.	Go to TAP-101.
893	Loss of IP connectivity. Network is down or router/cabling problem.	Go to TAP-101.
895	Network is down or router/cabling problem	Go to TAP-101.
907	Destn inaccessible to MTP3 as determined by routing mgmt. Network is down or gateway or cabling problem	Go to TAP-106.
926	This alarm is obsolete. Remote Node Unreachable - ChassisId %d SP-%c. Network was down or gateway or cabling problem	Go to TAP-106.
931	Incorrect Times Ten schema version. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
932	Persistent database Main daemon halted. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
933	Persistent database Main daemon exited. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
934	Persistent database Replication daemon exited. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
976	IOM Loss of IP Connectivity	Go to TAP-101.
1055	This alarm is obsolete.	Go to TAP-106.
1066	Possible provisioning problem.	Go to TAP-106.
1073	Possible provisioning problem.	Go to TAP-106.
1082		Go to Step 17.
1085*		Go to Step 17.
1088	IOM received SF Violations from both SFs	Go to Step 17.
1089	IOM received SF Violations from SF-%c	Go to Step 17.
1090	IOM received SF Parity Errors from both SFs	Go to Step 17.
1091	IOM received SF Parity Errors from SF-%c	Go to Step 17.
1093	Administrative failover of SP failed	Go to Step 17.

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
1104	SF-%c Redundant hardware mastership logic mismatch 0x%x	CONTEQPT	EQPT	SF-%c
1110	%s - Remote Failure Indication (Line)	RFI-V	T1	IOM-%d-%s-VT1-%d
1112	%s - Alarm Indication Signal (Line)	AIS-V	T1	IOM-%d-%s-VT1-%d
1114	%s - Remote Failure Indication Server (Path)	RFIS-V	T1	IOM-%d-%s-VT1-%d
1116	%s - Remote Failure Indication Connectivity (Path)	RFIC-V	T1	IOM-%d-%s-VT1-%d
1118	%s - Remote Failure Indication Payload (Path)	RFIP-V	T1	IOM-%d-%s-VT1-%d
1120	%s - Remote Failure Indication (Line)	RFI-T	E1	IOM-%d-STM1-%d-TU12-%d
1122	%s - Alarm Indication Signal (Line)	AIS-T	E1	IOM-%d-STM1-%d-TU12-%d
1124	%s - Remote Failure Indication Server (Path)	RFIS-T	E1	IOM-%d-STM1-%d-TU12-%d
1126	%s - Remote Failure Indication Connectivity (Path)	RFIC-T	E1	IOM-%d-STM1-%d-TU12-%d
1128	%s - Remote Failure Indication Payload (Path)	RFIP-T	E1	IOM-%d-STM1-%d-TU12-%d
1130	%s Loss of Multiframe (Path)	LOM-P	STS1	IOM-%d-STS1-%d
1132	%s Remote Failure Indication Server (Path)	RFIS-P	STS1	IOM-%d-STS1-%d
1134	%s Remote Failure Indication Connectivity (Path)	RFIC-P	STS1	IOM-%d-STS1-%d
1136	%s Remote Failure Indication Payload (Path)	RFIP-P	STS1	IOM-%d-STS1-%d
1140	SP-%c IP Connectivity Fault - Active %d Partner %d	CONTCOM	COM	SP-A/B
1142	MGC-MG MEGACO Down %s Port %d to Port %d - IP %s - Cause %s	GP	COM	CHASSIS
1146*	IOM-%d NFS mount of %s disk failed	NET	EQPT	IOM-%d
1148*	IOM-%d CPU-A lost heartbeat to CPU-%c	PROGFLT	EQPT	IOM-%d
1149*	%s terminated - status %d	PROGFLT	EQPT	IOM-%d
1150*	%s failed to start	INTERR	EQPT	IOM-%d
1152*	%s failed to restart	INTERR	EQPT	IOM-%d
1154*	%s not restarted, limit has been exceeded	INTERR	EQPT	IOM-%d
1158	SG-MGC M3UA Down SP-%c to MGCID %d - Port %d - IP %s	EXT	COM	CHASSIS
1160	MGC-SG M3UA Down <MgName,DIST>-<PRI,SEC> Port %d to Port %d - IP %s	EXT	COM	CHASSIS

ID	INFORMATION for Critical Alarms	GO TO
1104	Mismatch	Go to Step 17.
1110	T1 Remote Failure Indication. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1112	Indicates a VT1.5 alarm in a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1114	T1 Remote Failure Indication Server (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1116	T1 Remote Failure Indication Connectivity (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1118	T1 Remote Failure Indication Payload (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1120	E1 Remote Failure Indication (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1122	E1 Alarm Indication Signal (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1124	E1 Remote Failure Indication Server (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1126	E1 Remote Failure Indication Connectivity (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1128	E1 Remote Failure Indication Payload (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1130	STS-1 Loss of Multiframe (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1132	STS-1 Remote Failure Indication Server (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1134	STS-1 Remote Failure Indication Connectivity (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1136	STS-1 Remote Failure Indication Payload (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1140	SP-%c IP Connectivity Fault - Active %d Partner %d	Go to Step 17.
1142	MGC-MG MEGACO Down %s Port %d to Port %d - IP %s - Cause %s	Go to Step 17.
1146*		Go to Step 17.
1148*		Go to Step 17.
1149*		Go to Step 17.
1150*		Go to Step 17.
1158	SG-MGC M3UA Down	Go to Step 17.
1160	MGC-SG M3UA Down	Go to Step 17.

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
1162	MG-MGC MEGACO Down SP-%c to MGCID %d - Port %d - IP %s	GP	COM	CHASSIS
1166	MGC-MG IUA Down <MgName>-<PRI,SEC> Port %d to Port %d - IP %s	EXT	COM	CHASSIS
1168	MG-MGC IUA Down SP-%c to Port %d - IP %s	EXT	COM	CHASSIS
1181	Signaling Access Interface not up	PRCDRERR	COM	COM
1190	MGCP - congestion threshold 3 exceeded	EXTERR	COM	COM
1192	SIP - congestion threshold 3 exceeded	EXTERR	COM	COM

ID	INFORMATION for Critical Alarms	GO TO
1162	MG-MGC MEGACO Down	Go to Step 17.
1166	MGC-MG IUA Down	Go to Step 17.
1168	MG-MGC IUA Down SP-%c to Port %d - IP %s	Go to Step 17.
1181	Cannot access IP addresses of signaling equipment	Go to TAP-103
1190	MGCP based IAD is overloading the Plexus.	Go to TAP-106
1192	A SIP based feature server is overloading the Plexus.	Go to TAP-106

Table C. MAJOR ALARMS

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
1	SP-%c disk controller failure	BKUPMEMP	EQPT	SP-%c
2	SP-%c nonvolatile memory read/write failure	BKUPMEMP	EQPT	SP-%c
5	SP-%c bus error at address 0x%x	BUERR	EQPT	SP-%c
6	SP-%c kernel fault	PROGFLT	EQPT	SP-%c
8	SP-%c RS232 craft interface failure	IOTERM	EQPT	SP-%c
9	SP-%c 100baseT loss of carrier on SP to SP interface	CONTCOM	PLK	SP-%c
11	SP-%c 100baseT internal fault on SP to SP interface	CONTCOM	EQPT	SP-%c
12	SP-%c 100baseT loss of carrier on signaling interface	CSC	PLK	SP-%c
14	SP-%c 100baseT internal fault on signaling interface	CONTCOM	EQPT	SP-%c
15	SP-%c 100baseT loss of carrier on management interface	OSLINK	PLK	SP-%c
17	SP-%c 100baseT internal fault on management interface	OSLINK	EQPT	SP-%c
18	SP-%c 100baseT carrier not detected on management interface	OSLINK	PLK	SP-%c
21*	The Maintenance Link to the module in slot %d failed to go ready	CONTBUS	EQPT	IOM-%d
23*	Module in slot %d timed out while booting	INTERR	EQPT	IOM-%d
24*	Module in slot %d failed selftest, Status - %d	INTERR	EQPT	IOM-%d
27*	IOM-%d Module CLEI %s does not match provisioned CLEI %s	PRCDRERR	EQPT	IOM-%d
28*	IOM-%d Module SW Rev %s does not match provisioned SW Rev %s	PRCDRERR	EQPT	IOM-%d
29*	Module in slot %d, failed to read id prom	INTERR	EQPT	IOM-%d
30*	Module in slot %d, timeout waiting for id prom read	INTERR	EQPT	IOM-%d
31	Module in slot %d failed to boot - error code %d	CONTCOM	EQPT	IOM-%d
35	Protection SP-%c failed to go ready in time	INTERR	EQPT	SP-%c

ID	INFORMATION for Major Alarms	GO TO
1	Software has detected a fault condition on the disk controller device. Hardware fault on the front SP module.	Go to Step 17.
2	Software has detected a fault condition on the disk. The disk on the rear card has a fault or there is a software fault.	Go to Step 17.
5	A fatal hardware or software fault has caused an illegal access. Hardware or software fault.	Go to Step 17.
6	Indicates a software process on the SP is not responding. Software fault on the indicated SP or hardware fault on the front SP module.	Go to Step 17.
8	Software has detected a fault condition on the RS232 device.	Go to Step 17.
9	There is no valid Ethernet signal detected on the replication Ethernet of the designated SP. Faulted SP	Go to TAP-103.
11	Software has detected a fault condition on the Ethernet device. Enet chip on SP rear module has faulted.	Go to Step 17.
12	There is no valid Ethernet signal detected on the signaling Ethernet of the designated SP. Disconnected cable, Ethernet hub/switch has failed or lost power or faulted ENET chip on rear SP.	Go to TAP-103.
14	Software has detected a fault condition on the Ethernet device. Enet chip on SP rear module has faulted.	Go to Step 17.
15	There is no valid Ethernet signal detected on the management Ethernet of the designated SP. Disconnected cable, Ethernet hub/switch has failed or lost power or faulted ENET chip on rear SP	Go to TAP-103.
17	Software has detected a fault condition on the Ethernet device. Enet chip on SP rear module has faulted.	Go to Step 17.
18	This alarm is obsolete.	Go to Step 17.
21*	Indicates the maintenance link to the module did not clear its error status in the allotted time. Faulted hardware on the indicated module or faulted SF.	Go to Step 17.
23*	Indicates the IOM never indicated that it passed diagnostics and booted the Operational Code. Faulted IOM.	Go to Step 17.
24*	Indicates a module failed power-on diagnostics. There status code indicates which diagnostic test failed. A component fault on the IOM or an external stimulus causing a misdiagnosis.	Go to Step 17.
27*	Indicates that the incorrect module type was inserted in an IOM slot.	Go to TAP-101.
28*	Indicates the IOM does not have the correct software image in non-volatile storage.	Go to Step 17.
29*	Indicates the device that holds the equipment identification code and version information cannot be read by the system processor. Faulted IOM	Go to Step 17.
30*	Indicates the device that holds the equipment identification code and version information cannot be read by the system processor. Faulted IOM	Go to Step 17.
31	This alarm is obsolete.	Go to Step 17.
35	Indicates the protection SP failed to run its diagnostics, boot the operational code and begin messaging with the working SP in the allotted time. Corrupted disk file system on the Protection SP or software or CPU subsystem error on the Protection SP	Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
36	Protection SP-%c failed to sync in time	INTERR	EQPT	SP-%c
37	Failed to read SP-%c id prom	INTERR	EQPT	SP-%c
38*	IOM-%d rear module does not match front module	PRCDRERR	EQPT	IOM-%d-REAR
45*	Module in slot %d has a TSU or FSU Fault	CONTCOM	EQPT	IOM-%d
46*	Module in slot %d has a TSU or FSU MLBA Parity Error	CONTCOM	EQPT	IOM-%d
47*	Module in slot %d has a MLINK Fault	CONTBUS	EQPT	IOM-%d
48	Fan unit or fuse fault	INT	EQPT	Fan
50	Chassis over temperature fault	INT	EQPT	Fan
52	Fan unit has been removed	REPLUNITMISS	EQPT	Fan
54*	Module in slot %d failed to go ready	CONTCOM	EQPT	IOM-%d
56*	Module in slot %d failed to restore to service	CONTCOM	EQPT	IOM-%d
57*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d-REAR
58*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d-REAR
59*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d
60*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d
62	SF-%c removed	REPLUNITMISS	EQPT	SF-%c
64	SP-%c removed	REPLUNITMISS	EQPT	SP-%c
67	SF-%c rear module removed	REPLUNITMISS	EQPT	SF-%c-REAR
69	SP-%c rear removed	REPLUNITMISS	EQPT	SP-%c
74*	Module in slot %d faulted, %s(%d)	INTERR	EQPT	IOM-%d
77*	Module in slot %d timeout while adding	INTERR	EQPT	IOM-%d
81	SF-%c CLEI %s is not compatible with chassis type %s	PRCDRERR	EQPT	SF-%c
82	IOM-%d Failed to burn prom partition %s error %d	INTERR	EQPT	IOM-%d

ID	INFORMATION for Major Alarms	GO TO
36	Indicates the protection SP failed to get all the call and configuration data during the time allotted for synchronizing the protection SP. NOTE: the software retries synchronization 5 times before recording this fault. Software or CPU subsystem error.	Go to Step 17 .
37	Indicates the device that holds the equipment identification code and version information cannot be read by the system processor. Faulted SP.	Go to Step 17 .
38*	Indicates the incorrect type of rear module is in the slot of a front module. For example, a DS1 rear module has been plugged into a slot of a DS3 front module.	Go to TAP-101.
45*	Indicates the To or From Switch Unit on the IOM is faulted. Faulted IOM	Go to Step 17 .
46*	Indicates the To or From Switch Unit on the IOM is faulted with a bus parity error. Faulted IOM or corrupted software image on IOM.	Go to Step 17 .
47*	Indicates the Maintenance Link serial connection from the SF to the IOM is faulted. Faulted IOM.	Go to Step 17 .
48	Either a Fan has stopped spinning or a DC power fuse is faulted.	Go to TAP-105.
50	Indicates the temperature sensor on the Plexus has detected a high condition.	Go to TAP-105.
52	The fan in a slot has been removed from the chassis or is not detected to be present. Maintenance Procedure in progress.	Go to TAP-105.
54*	Indicates the module booted but communications through the switch fabric could not be established. A component fault on the IOM that was not caught by diagnostics.	Go to Step 17 .
56*	Indicates the module booted and communications from the SP to the IOM was established, the module failed to accept the configuration state. Faulted IOM or SF.	Go to Step 17 .
57*	The rear module in a slot has been removed from the chassis or is not detected to be present. Operator Error or faulted IOM.	Go to TAP-101.
58*	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to TAP-102.
59*	Indicates the rear module is missing (either not detected to be in the chassis or not in the chassis). To get this alarm, the front module must be provisioned and present in the chassis.	Go to TAP-101.
60*	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to TAP-102.
62	The SF front module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to TAP-103.
64	The SP front module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to TAP-103.
67	The SF rear module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to TAP-103.
69	The SP rear module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to TAP-103.
74*	Indicates the IOM detected a fatal fault; either the CPU subsystem failed, or a device failed, or the software state is corrupt. Faulted IOM or SF	Go to Step 17 .
77*	Indicates the IOM did pass diagnostics but failed to take configuration commands from the System Processor. Software Version mis-configuration, corrupt software image or faulted hardware on the IOM.	Go to Step 17 .
81	Older revisions of SF modules cannot be used in chassis that support octal DS3 modules. An older revision SF module was inserted.	Go to Step 17 .
82	Can only occur during a IOM software upgrade. Indicates that the upgrade failed. Replace module. If it occurs a second time, then indicates a software or procedure error. Faulted IOM.	Go to Step 17 .

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
84	IOM-%d Prom burn timeout	INTERR	EQPT	IOM-%d
85	IOM-%d kernel fault	PROGFLT	EQPT	IOM-%d
86	IOM-%d process %s - abnormally ended	PROGFLT	EQPT	IOM-%d
102	SP-%c lost communication with %s	PROGFLT	COM	SP-%c
103	SP-%c %s Failure - %s	PROGFLT	COM	SP-%c
104*	SP-%c lost heartbeat to %s	PROGFLT	COM	SP-%c
105	SP-%c Process %s timed-out waiting for ready during boot	PROGFLT	COM	SP-%c
106	SP-%c Process %s timed-out waiting for synchronization with protection SP	PROGFLT	COM	SP-%c
107	SP-%c Process %s timed-out during recovery after failed protection SP	PROGFLT	COM	SP-%c
108	SP-%c Process %s timed-out during recovery after SP failover	PROGFLT	COM	SP-%c
109	SP-%c lost heartbeat with SP-%c on %s interface	CONTCOM	EQPT	SP-%c
110	SP-%c %s	DATAFLT	COM	SP-%c
111	SP-%c %s	PROGFLT	COM	SP-%c
116*	Lost heartbeat with IOM-%d	CONTCOM	EQPT	IOM-%d
117	IOM-%d lost heartbeat with SP-%c	CONTCOM	EQPT	IOM-%d or SP-%c
118	SP-%c is out of sync	PROGFLT	EQPT	SP-%c
120	IOM-%d failed to connect to the Stby SP-%c	CONTCOM	EQPT	IOM-%d
127*	IOM-%d is not responding to messages	PROGFLT	EQPT	IOM-%d
135	The TL1 Agent failed to create a TCP socket	PROGFLT	COM	SP-%c
136	SF-%c failed to initialize. %s	EQPT	EQPT	SF-%c
137	SF-%c APC failed. %s	EQPT	EQPT	SF-%c
138	SF-%c failed to initialize. %s	EQPT	EQPT	SF-%c
139	SF-%c ACE failed. %s	PAINTGRT	EQPT	SF-%c
140	SF-%c ACE failed. %sT	PAINTGRT	EQPT	SF-%c

ID	INFORMATION for Major Alarms	GO TO
84	Indicates programming the flash on the IOM exceeded the allotted time. Faulted IOM.	Go to Step 17.
85	This alarm is obsolete.	Go to Step 17.
86	This alarm is obsolete.	Go to Step 17.
102	This alarm is obsolete.	Go to Step 17.
103	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
104*	Indicates a software process on the SP is not responding. Software fault on the indicated SP or hardware fault on the front SP module.	Go to Step 17.
105	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
106	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
107	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
108	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
109	Indicates communications between SPs has failed on either the Ethernet or ATM fabric. Software fault on the indicated SP, hardware fault on the front SP module, Enet chip on SP rear module has faulted or ATM interface on the SF has faulted.	Go to Step 17.
110	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
111	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
116*	Indicates the communications between the SP and the IOM have failed. A fault on the IOM's CPU causing it not to respond or a switch fabric failure.	Go to Step 17.
117	Indicates software process on the IOM cannot perform IP communications with the SP. Software or CPU subsystem error on the IOM or ATM communications failure.	Go to Step 17.
118	Indicates the protection SP has not synchronized. Software fault on the indicated SP.	Go to Step 17.
120	Indicates the IOM cannot perform messaging communication to the protection SP over the ATM switch fabric. Faulted IOM, software fault on the IOM or the protection SP or faulted Working SF.	Go to Step 17.
127*	Indicates a software error. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
135	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
136	The ATM Port Controller on the indicated SF module failed its power-up diagnostics. Faulted SF or faulted Timing device on the Working SP.	Go to Step 17.
137	A hardware fault was detected on the ATM Port Controller device on the Switch Fabric Module. Faulted SF.	Go to Step 17.
138	The ATM Port Controller on the indicated SF module failed its power-up diagnostics. Faulted SF or faulted Timing device on the Working SP.	Go to Step 17.
139	A parity fault was detected on an ATM switch fabric device named ACE on the Switch Fabric Module. Faulted SF.	Go to Step 17.
140	An overrun fault was detected on an ATM switch fabric device named ACE on the Switch Fabric Module. Faulted SF.	Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
141	SF-%c ASX failed. %s	PAINTGRT	EQPT	SF-%c
142	SF-%c ASX failed. %s	PAINTGRT	EQPT	SF-%c
143	SF-%c ASX failed. %s	PAINTGRT	EQPT	SF-%c
144	SF-%c ASX failed. %s	PAINTGRT	EQPT	SF-%c
145	SF-%c ASX failed. %s	PAINTGRT	EQPT	SF-%c
146	SF-%c ASX failed. %s	PAINTGRT	EQPT	SF-%c
147	SF-%c from APC on SF-%c Input Port Parity Error Detected by the ATM Switch(ASX)	PAINTGRT	EQPT	SF-%c
148	SF-%c from APC on SF-%c Input Port Overrun Err threshold exceeded by ATM Switch(ASX)	PAINTGRT	EQPT	SF-%c
149	SF-%c receiving errored signal from SF-%c	PAINTGRT	EQPT	SF-%c
150	SF-%c receiving errored signal from IOM-%d	PAINTGRT	EQPT	SF-%c or IOM-%d
151	IOM-%d transmitting comm errors to SF(s)	PAINTGRT	EQPT	IOM-%d
152	SF-%c receiving ATM CRC error from SF-%c	PAINTGRT	EQPT	SF-%c
153	SF-%c receiving ATM CRC error from IOM-%d	PAINTGRT	EQPT	SF-%c or IOM-%d
154	IOM-%d transmitting ATM CRC errors to SF(s)	PAINTGRT	EQPT	IOM-%d
155	SF-%c to IOM-%d CRC Error	PAINTGRT	EQPT	SF-%c
156	SF-%c to IOM-%d Decode Error	PAINTGRT	EQPT	SF-%c
157	SF-%c to IOM-%d Missing Sync Error	PAINTGRT	EQPT	SF-%c
158*	IOM-%d Receiving Errors from both SFs	PAINTGRT	EQPT	IOM-%d
159	%s - error in SF-%c to IOM-%d signal	CONTBUS	EQPT	SF-%c or IOM-%d
160	%s - IOM-%d is not driving parity to SF-%c	CONTBUS	EQPT	SF-%c or IOM-%d
161	IOM-%d to SF-%c maintenance link data transfer error	CONTBUS	EQPT	IOM-%d
162	IOM-%d to SF-%c maintenance link timeout	CONTBUS	EQPT	IOM-%d
163	error in SF-%c to SP/TMG-%c signal	CONTBUS	EQPT	SF-%c

ID	INFORMATION for Major Alarms	GO TO
141	A parity fault was detected on an ATM switch fabric device named ASX on the Switch Fabric Module. Faulted SF.	Go to Step 17.
142	An overrun fault was detected on an ATM switch fabric device named ASX on the Switch Fabric Module. Faulted SF or an IOM caused an overrun condition.	Go to Step 17.
143	A CRC fault was detected on an ATM switch fabric device named ASX on the Switch Fabric Module. Faulted SF.	Go to Step 17.
144	A parity fault was detected on an ATM switch fabric device named ASX on the Switch Fabric Module. Faulted SF.	Go to Step 17.
145	A list fault was detected on an ATM switch fabric device named ASX on the Switch Fabric Module. Faulted SF or an IOM caused an overrun condition.	Go to Step 17.
146	A list fault was detected on an ATM switch fabric device named ASX on the Switch Fabric Module. Faulted SF or an IOM caused an overrun condition.	Go to Step 17.
147	A parity fault was detected on an ATM switch fabric device named APC on the Switch Fabric Module. Faulted SF.	Go to Step 17.
148	An overrun fault was detected on an ATM switch fabric device named APC on the Switch Fabric Module. Faulted SF or an IOM caused an overrun condition.	Go to Step 17.
149	A loss of signal was detected by the SF from the other SF. Faulted SF transmitter or SF receiver.	Go to Step 17.
150	A loss of signal was detected by the SF from the IOM. Faulted IOM transmitter or SF receiver.	Go to Step 17.
151	A ATM transmission fault was detected by the SF. Faulted IOM transmitter or SF receiver.	Go to Step 17.
152	A CRC fault was detected by the SF. Faulted SF transmitter or SF receiver.	Go to Step 17.
153	A CRC fault was detected by the SF. Faulted IOM transmitter or SF receiver.	Go to Step 17.
154	A CRC fault was detected by the SF. Faulted IOM transmitter or SF receiver.	Go to Step 17.
155	A CRC fault was detected by the IOM. Faulted SF transmitter or IOM receiver.	Go to Step 17.
156	A unrecognized cell type was detected by the IOM. Faulted SF transmitter or IOM receiver.	Go to Step 17.
157	A cell was not received by the IOM; a cell should be received every 680 nanoseconds. Faulted SF transmitter or IOM receiver.	Go to Step 17.
158*	Indicates the maintenance link on the IOM is detecting framing errors from both SF modules. Faulted IOM or faulted timing module on working SP or faulted SF.	Go to Step 17.
159	Indicates an electrical signal level problem in connections between the SF to the IOM. 1. SF to IOM transmitter is faulted on SF. 2. SF to IOM receiver is faulted on IOM.	Go to Step 17.
160	Indicates a electrical communication problem between the IOM and the Switch Fabric. IOM to SF transmitter is faulted on IOM or IOM to SF receiver is faulted on SF.	Go to Step 17.
161	Indicates the maintenance link on the IOM is sending errors to the SF. Faulted IOM transmitter on maintenance link or faulted SF receiver on maintenance link.	Go to Step 17.
162	Indicates read/write operations are not completing on maintenance link to the designated IOM. Faulted IOM or SF.	Go to Step 17.
163	Indicatets the maintenance link to the indicated SP is faulted. Faulted SP or SF.	Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
164	SP/TMG-%c is not driving parity to SF-%c	CONTBUS	EQPT	SF-%c
165	SP/TMG-%c to SF-%c maintenance link data transfer error	CONTBUS	EQPT	SF-%c
166	SP/TMG-%c to SF-%c maintenance link timeout	CONTBUS	EQPT	SF-%c
167*	IOM-%d-PORT-%d Device Error	FRMR	EQPT	IOM-%d-PORT-%d
170*	IOM-%d not responding to messages from SP	INTMSGERR	COM	IOM-%d
171	IOM-%d-PORT-%d Loss of Signal	LOS	T1	IOM-%d-PORT-%d
173	IOM-%d-PORT-%d Loss of Frame	LOF	T1	IOM-%d-PORT-%d
175	IOM-%d-PORT-%d Alarm Indication Signal	AIS	T1	IOM-%d-PORT-%d
177	IOM-%d-PORT-%d Remote Alarm Indication	RAI	T1	IOM-%d-PORT-%d
184	Signaling is not responding	INTMSGERR	COM	SP-%c
194*	IOM-%d faulted - %s	SFT	EQPT	IOM-%d
195*	IOM-%d Device Error	FRMR	EQPT	IOM-%d
196*	IOM-%d - not responding to messages from SP	INTMSGERR	COMt	IOM-%d
197	Signaling is not responding to DS3 Driver	INTMSGERR	COM	IOM-%d
200*	%d Device Error	FRMR	EQPT	IOM-%d-T3-%d
218*	%d Device Error	FRMR	EQPT	IOM-%d-STs1-%d
253*	%s Device Error	FRMR	EQPT	IOM-%d-%s-PORT-%d
254	% Loss of Signal	LOS	T1	IOM-%d-%s-PORT-%d
256	%s Loss of FrameF	LOF	T1	IOM-%d-%s-PORT-%d
258	%s Alarm Indication SignalS	AIS	T1	IOM-%d-%s-PORT-%d
260	%s Remote Alarm Indication	RAI	T1	IOM-%d-%s-PORT-%d
262	%s Alarm Indication Signal (Vt)	AIS-V	T1	IOM-%d-%s-PORT-%d
264	%s Remote Defect Indication (Vt)	RDI-V	T1	IOM-%d-%s-PORT-%d
285	IOM-%d - BITS incorrect clock source	INTERR	EQPT	IOM-%D
306	TMG-%c - Maintenance Link Error(%d)	FACTERM	EQPT	IOM-%d

ID	INFORMATION for Major Alarms	GO TO
164	Indicates the Maintenance Link serial connection from the SP to the SF is faulted. Faulted SP or SF.	Go to Step 17.
165	Indicates the Maintenance Link serial connection from the SP to the SF is faulted. Faulted SP or SF.	Go to Step 17.
166	Indicates the Maintenance Link serial connection from the SP to the SF is faulted. Faulted SP or SF.	Go to Step 17.
167*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
170*	Indicates that applications on the IOM (framer driver or layer 2 signaling) are not returning acknowledges to commands even though communication with the IOM is functioning. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
171	Indicates there is no input signal on a T1 on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
173	Indicates there is framing cannot be detected on an input signal for a T1 on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
175	Indicates receiving a T1 Alarm Indication Signal from the far end on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
177	Indicates receiving a T1 Remote Alarm indication from the far end on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
184	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
194*	Indicates a software error. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
195*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
196*	Indicates a software error. Software or CPU subsystem error on the IOM or mismatch in software versions between the SP and the IOM.	Go to Step 17.
197	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
200*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
218*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
253*	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
254	IOM-%d-STS1-%d-Port-%d Loss of Signal. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
256	Indicates a T1 LOF on a T1 in an STS or DS3. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
258	Indicates a T1 AIS on a T1 in an STS or DS3. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
260	Indicates a T1 Remote Alarm Indication on a T1 in an STS or DS3. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
262	Indicates a VT1.5 alarm in a STS1 carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
264	Indicates a VT1.5 alarm in a STS1 carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
285	Indicates an IOM is using not using the correct clock from the SP-A or SP-B module.	Go to TAP-101.
306	Indicates the maintenance link to the SP detected a error. Faulted hardware on the indicated module or faulted SP.	Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
309	TMG-%c - Hardware failure	INTERR	EQPT	SP-%c
311	SP-%c Sys-Mngr GOACT failed - cause %d	PROGFLT	COM	SP-%c
312	SP-%c Sys-Mngr GOSBY failed - cause %d	PROGFLT	COM	SP-%c
313	SP-%c Sys-Mngr warm start failed - cause %d	PROGFLT	COM	SP-%c
314	SP-%c Sys-Mngr PEERSYNC failed - cause %d	PROGFLT	COM	SP-%c
315	SP-%c Sys-Mngr disable peer SAP failed - cause %d	PROGFLT	COM	SP-%c
316	SP-%c Sys-Mngr ABORT failed - cause %d	PROGFLT	COM	SP-%c
317	SP-%c Sys-Mngr peer update failed - cause %d	PROGFLT	COM	SP-%c
319	SP-%c Sys-Mngr Node Op %d failed on Trans %d - cause %d	PROGFLT	COM	SP-%c
320	%s signaling process timeout on state change for entity %d on transact %d	PROGFLT	COM	SP-%c or IOM-%d
321	%s signaling process failed on state change for entity %d on transact %d	PROGFLT	COM	SP-%c or IOM-%d
323	%s signaling msg router memory pool alloc failed - cause %d	PROGFLT	COM	SP-%c or IOM-%d
328	SP-%c PSF %d update sequence error - cause %d	PROGFLT	COM	SP-%c
329	SP-%c PSF %d memory failure - cause %d	PROGFLT	COM	SP-%c
331	Update failure on the Stby SP-%c	PROGFLT	COM	SP-%c
332	SP-%c to %s relay channel %d communication error - cause %d	PROGFLT	COM	SP-%c
372	MTP3 - link entered cong - linkId %d on %s	SLCR-3	SLK	SLK-%d
422	MTP3 - PC %s congested	SLCR-3	COM	PC-%s
468	MTP3 - layer 3 out of rte instance control blks	INTSFT	COM	
540	More than %d of trunk to DPC %s is OOS	TRKGRPLIM	TRK	PC-%d-%d-%d
556	More than %d percent of the trunks or lines in route %s are OOS	TRKGRPLIM	TRK	RT-%s

ID	INFORMATION for Major Alarms	GO TO
309	Indicates the system clock circuitry on the SP has been detected as faulted by the software. Faulted hardware on the indicated SP.	Go to Step 17.
311	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
312	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
313	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
314	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
315	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
316	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
317	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
319	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
320	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
321	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
323	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
328	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
329	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
331	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
332	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
372	Indicates a congestion threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned or Equipment or facility faults have caused a large number of releases. Check for facilities faults, Check for SS7 link faults on other links.	Go to TAP-106.
422	Indicates a congestion threshold has been crossed for SS7 messaging to a Point Code. Call volumes are larger than planned or Equipment or facility faults have caused a large number of releases	Go to TAP-106.
468	This alarm is obsolete.	Go to Step 17..
540	A large percentage of a trunkgroup has been provisioned out of service or has autonomously gone OOS due to a transmission failure. Facilities fault or provisioning.	Go to TAP-106.
556	More than %d percent of the trunks or lines in route %s are OOS	Go to TAP-106.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
603	Q931 - Config request failed - IntfcId %d linkId %d on %s	SFT	ISDNL3	COM
625	TSMC - Error synchronizing standby	SYNCEQPT	COM	SP-%c
631	%s UNI down	UNIERR	PLK	UNI-IOM-%d-OC-%d or UNI-IOM-%d-T3-%d
638	SVCID % Endpoint Out Of Service PC %s Cause %s	INTERR	PLK	SVC-%d-%d-%d-%d
639	SVCID % Endpoint Out Of Service PC %s Cause %s	EXT	PLK	SVC-%d-%d-%d-%d-%d
643	PVCID % Out Of Service Cause %s	INT	PLK	PVC-%d-%d-%d-%d-%d
644	PVCID % Out Of Service Cause %s	EXT	PLK	PVC-%d-%d-%d-%d-%d
664	LM - The database is not available	PROGFLT	COM	COM
665	LM - Failed to destroy database	PROGFLT	COM	COM
666	LM - Failed to copy active database	PROGFLT	COM	COM
667	LM - Schema upgrade failed	PROGFLT	COM	COM
668	LM - The database is not active	PROGFLT	COM	COM
669	LM - Replication configuration failed	PROGFLT	COM	COM
709	SCCP - Bind with service provider failed - suId %d	PROGFLT	COM	SP-%c
711	SCCP - User out of service - swItch %d spId %d PC %s ssn %d	PROGFLT	COM	PC-%d-%d-%d-SSN-%d
713	SCCP - Invalid UI event - protocol layer not active - prmtv %d spId %d	PROGFLT	COM	SP-%c
716	SCCP - Invalid LI event - protocol layer not active - prmtv %d suId %d	PROGFLT	COM	SP-%c
722	TCAP - Illegal or inopportune event received - upper SAP is not configured	PROGFLT	COM	SP-%c
724	TCAP - Illegal or inopportune event received - upper protocol layer not active	PROGFLT	COM	SP-%c

ID	INFORMATION for Major Alarms	GO TO
603		Go to Step 17.
625	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
631	Indicates an UNI is not communicating. Missing or faulted equipment modules or not provisioned	Go to TAP-101.
638	Indicates an AAL1 or AAL2 endpoint is out of service because of missing equipment or a faulted equipment modules.	Go to TAP-106.
639	Indicates an AAL1 or AAL2 endpoint is out of service because it is failing to set up an SVC to the remote endpoint. Faulted voice over packet facilities, e.g. LOS/LOF on ATM interface or Equipment at remote endpoint faulted or not provisioned	Go to TAP-106.
643	Indicates an AAL1 or AAL2 endpoint is out of service because of missing equipment or a faulted equipment	Go to TAP-106.
644	Indicates an AAL1 or AAL2 endpoint is out of service because it is failing the connectivity test with the remote equipment. Faulted voice over packet facilities, e.g. LOS/LOF on ATM interface or Equipment problem at remote endpoint.	Go to TAP-106.
664	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
665	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
666	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
667	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
668	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
669	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
709	Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
711	Indicates the application process on a SCP entity specified by the Point Code is not inservice. Examine the state of the SCP and applications or check if the Point Code is provisioned properly. Check the Plexus alarms to verify other Point Codes are in service	Go to TAP-106.
713	Invalid upper interface event because of: Protocol layer not active (compiled with ZP). Not provisioned or software or CPU subsystem error.	Go to Step 17.
716	Invalid lower interface event because of: Protocol layer not active (not compiled with ZP). Not provisioned or software or CPU subsystem error.	Go to Step 17.
722	This event is generated if an illegal or inopportune event is received, and if an interface parameter is in error at the upper interface; SAP is not configured. Not provisioned or software or CPU subsystem error.	Go to Step 17.
724	This event is generated if an illegal or inopportune event is received, and if an interface parameter is in error at the upper interface. Protocol layer is not active. Not provisioned, layer not active or software or CPU subsystem error.	Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
725	TCAP - Illegal or inopportune event received - lower SAP is not configured	PROGFLT	COM	SP-%c
727	TCAP - Illegal or inopportune event received - lower protocol layer not active	PROGFLT	COM	SP-%c
737	TCAP - Lower layer bind NACKed or timed out	PROGFLT	COM	SP-%c
740	INAP - Memory allocation for INSAP failed - sapId %d	PROGFLT	COM	SP-%c
741	INAP - Hash initialization for INSAP failed - sapId %d	PROGFLT		
742	INAP - Memory allocation for bit map failed - sapId %d	PROGFLT	COM	SP-%c
743	INAP - Memory allocation for TCSAP failed - sapId %d	PROGFLT	COM	SP-%c
745	INAP - Memory allocation for bit map failed - sapId %d	PROGFLT		
750	INAP - Memory allocation for INSAP list failed	PROGFLT	COM	SP-%c
751	INAP - Memory allocation for TCSAP list failed	PROGFLT	COM	SP-%c
767	INAP - SAP configuration before general - sapId %d	PROGFLT	COM	SP-%c
769	INAP - TCSAP configuration before general - sapId %d	PROGFLT	COM	SP-%c
783	LMIC - Received a NACK or timed out when configuring INAP TCAP or SCCP	PROGFLT	COM	SP-%c
784	LMIC - Received a NACK or timed out when binding INAP TCAP or SCCP	PROGFLT	COM	SP-%c
793	IOM-%d-%s Cell transmission failure - APC to TADM	PAINTGRT	EQPT	IOM-%d-OC-%d
799	IS-41 - sapId %d cannot be bound to TCAP	PROGFLT	COM	SP-%c
826	IS-41 - Memory alloc for sapId %d with size %d failed	PROGFLT	COM	SP-%c
827	IS-41 - Dialog hash list init with %d bins failed for sapId %d	DATAFLT	COM	SP-%c
828	IS-41 - Memory alloc for bitmap of size %d failed for sapId %d	DATAFLT	COM	SP-%c
829	IS-41 - Invoke hash list init with %d bins failed for sapId %d	DATAFLT	COM	SP-%c
831*	Module in slot %d timed out during audio download	INTERR	EQPT	IOM-%d

ID	INFORMATION for Major Alarms	GO TO
725	This event is generated if an illegal or inopportune event is received, and if an interface parameter is in error at the lower interface; SAP is not configured. Not provisioned or software or CPU subsystem error.	Go to Step 17.
727	This event is generated if an illegal or inopportune event is received, and if an interface parameter is in error at the lower interface. Protocol layer is not active. Not provisioned or software or CPU subsystem error.	Go to Step 17.
737	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
740	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
741	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
742	Memory allocation for bit map failed. Not provisioned or software or CPU subsystem error.	Go to Step 17.
743	Memory allocation for TCSAP failed. Not provisioned or software or CPU subsystem error.	Go to Step 17.
745	This alarm is obsolete. Indicates a software error.	Go to Step 17.
750	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
751	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
767	SAP configuration before general. Not provisioned or software or CPU subsystem error.	Go to Step 17.
769	TCSAP configuration before general. Not provisioned or software or CPU subsystem error.	Go to Step 17.
783	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
784	Indicates a software error. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
793	Indicates ATM cells are not being transferred out the framer due to a bus failure. Faulted IOM.	Go to Step 17.
799	This event is generated if the bind procedure with the lower layer fails. The bind procedure can fail either due to the absence of bind confirm, or if there is a negative bind confirm from the lower layer. Not provisioned or software or CPU subsystem error.	Go to Step 17.
826	This event is generated if there are insufficient resources to initialize the Dialog Hash list. Software error.	Go to Step 17.
827	This event is generated if there are insufficient resources to initialize the Dialog Hash list. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
828	This event is generated if there are insufficient memory resources to allocate for bitmap that is used for dialog pool mgmt. Software error.	Go to Step 17.
829	This event is generated if there are insufficient resources to initialize the Invoke Hash list. Corrupted disk file system or software or CPU subsystem error.	Go to Step 17.
831*	Indicates the IOM timed out during audio download. Faulted IOM.	Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
832*	Module in slot %d failed during audio download	INTERR	EQPT	IOM-%d
834*	Module in slot %d has an IFE or EFE Fault	CONTCOM	EQPT	IOM-%d
838	SP-%c 100baseT signaling interface did not restore in time	CSC	PLK	SP-%c
843	Slot 11 in use - Interface 4 on slot 8 or 10 cannot be used	PRCDRERR	EQPT	IOM-%d
844*	IOM-%d SwVer-%s is incompatible with SP-%c SwVer-%s	PRCDRERR	EQPT	IOM-%d
845	SP-%c software version mismatch - prov %s running %s	PRCDRERR	EQPT	SP-%c
848	SP-%c 100baseT management interface did not restore in time	OSLINK	PLK	SP-%c
851	SP-%c Invalid input characters on RS232 TL1 craft port	DATAFLT	COM	SP-%c
855	SAR on SF-%c Device error	CONTCOM	EQPT	SF-%c
856	SAR on SF-%c PCI parity - abort fault	CONTBUS	EQPT	SF-%c
870*	%s Device Error	FRMR	EQPT	IOM-%d-OC3-%d or IOM-%d-OC12-%d
884	IOM-%d-%s Trace Identifier Message Defect cleared	NORMAL	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
897*	IOM-%d-ENET-%d Device Error %d	FRMR	EQPT	IOM-%d-ENET-%d
919	More than %d percent of trunks in TrkGrp %d are OOS	TRKGRPLIM	TRK	TGRP-%d
923	ISUP ACC Congestion Level 2	EXTERR	COM	COM
938	GR303 TMC channel down - IfGrpNum-%d	LAPDIRR	ISDNL2	303IF-%d
940	GR303 EOC channel down - IfGrpNum-%d	LAPDIRR	ISDNL2	303IF-%d
951	IOM-%d VOIP PVC-%d endpoint down	GP	PLK	IOM-%d-PVC-%d
953	IOM-%d VOIP faulted - cause - %s	SFT	EQPT	IOM-%d
958	SP-%c lost heartbeat with %s-%d-SP-%c	GP	COM	MGC-%d-SP-%c or SG-%d-SP-%c
960	SP-%c failover due to IP connectivity fault - SP-%c has %d conns - SP-%c has %d	GP	COM	MGC-%d-SP-%c or SG-%d-SP-%c

ID	INFORMATION for Major Alarms	GO TO
832*	Indicates a module failed during audio download. A component fault on the IOM or faulted IOM.	Go to Step 17.
834*	Indicates an FPGA fault on the PNA or GigE IOM. The FPGAs are the Ingress Forwarding Engine (IFE) and Egress Forwarding Engine (EFE). Malformed or high levels of IP traffic may have put the forwarding engine logic in an unexpected state.	Go to Step 17.
838	The Ethernet interface on SP-A or SP-B did not come into service. Check cabling or Ethernet hub/switch/router problem.	Go to Step 17.
843	The ATM switch port for slot 11 is used either to support slot 11 or to allow 4 GigE/OC interfaces in slot 10, but not both.	Go to TAP-101.
844*	Verify software versions of SP and IOM.	Go to Step 17..
845	Upgraded or replaced SP.	Go to TAP-103.
848	Verify IP connectivity on OS or check IP cabling.	Go to Step 17.
851	Check cabling.	Go to Step 17.
855	Software or CPU subsystem error or faulted SF.	Go to Step 17.
856	Software or CPU subsystem error or faulted SF.	Go to Step 17.
870*	%s Device Error. Faulted IOM	Go to Step 17.
884	This alarm is obsolete. ATM IOM	Go to Step 17.
897*	IOM-%d-ENET-%d Device Error %d. IOM faulted or misprovisioned	Go to Step 17.
919	Facilities faults or provisioning	Go to TAP-106.
923	Call volumes are larger than planned or Equipment or facility faults have caused a large number of releases.	Go to TAP-106.
938	Indicates the GR303 Trunk Management Channel is out of service. This means that both the working and protection channels are out of service. RDT problem or T1 problem. Verify that the T1 that is transporting the TMC is In Service or Check the configuration of the RDT	Go to TAP-106.
940	Indicates the GR303 Embedded Operations Channel (management function) is out of service. This means that both the working and protection channels are out of service.	Go to TAP-106.
951	Indicates IP connectivity between the Plexus and the router is broken when using the PNA IOM for IP. Router is down, PNA IOM has faulted or the OC fiber has been removed or is faulty. Check the IOM and OC are in-service. If they are, check the IP configuration, or the ATM PVC configuration to see that it matches the router.	Go to TAP-106.
953	This alarm is obsolete.	Go to Step 17.
958		Go to TAP-103.
960	This happens when one SP can communicate to more SPs than the other SP in the same chassis. Verify IP connectivity on OS or check IP cabling.	Go to TAP-103.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
961	SP-%c faulted with status - %s(%d)	INTERR	EQPT	SP-%c
969	MGCP - unable to connect to DNS server	EXT	COM	COM
971	MGCP - SP-%c failed to replicate data type %s - value %s	SFT	COM	SP-%c
982	%s Device Error	FRMR	EQPT	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
983	%s Loss of Signal	LOS	E1	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
985	%s Loss of Frame	LOF	E1	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
987	%s Alarm Indication Signal	AIS	E1	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
989	%s Remote Defect Indication	RDI	E1	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
991	%s Alarm Indication Signal (Tu)	AIS-T	E1	IOM-%d-STM1-%d-E1-%d
993	%s Remote Defect Indication (Tu)	RDI-T	E1	IOM-%d-STM1-%d-E1-%d
995	%s Loss of Pointer (Tu)	LOP-T	E1	IOM-%d-STM1-%d-E1-%d
997	%s Unequipped (Tu)	UNEQ-T	E1	IOM-%d-STM1-%d-E1-%d
999	%s Loss of Multiframe (Tu)	LOF	E1	IOM-%d-STM1-%d-E1-%d
1008	signaling entity %s did not acknowledge Heartbeat in %d seconds	PROGFLT	COM	SP-%c
1028	ISDN - More than %d percent of B-Channels in IntfcId %d are OOS	TRKGRPLIM	ISDNL3	ISDNIF-%d
1032	CAS - More than %d percent of lines on IntfcId %d are OOS	TRKGRPLIM	PLK	CAS-IF-%d
1037	MGCP - More than %d percent of lines on IntfcId %d are OOS	TRKGRPLIM	PLK	MGCP-IF-%d
1043	SP-%c Permanent database space threshold exceeded	SFT	COM	SP-%c
1045	SP-%c lost heartbeat with PC-%d-%d-%d-SP-%c	GP	COM	BOTH-PC-%d-%d-%d
1072	SP-%c lost local heartbeat on %s interface	CONTCOM	COM	SP-%
1077	SP-%c Permanent database space threshold low	SFT	COM	SP-%
1081	SP-%c Terminated	MAN	EQPT	SP-%
1083	IOM-%d-ENET-%d Source IP Address %s is the same as the Mate IP Address	MAN	EQPT	IOM-%-ENET-%
1085*	IOM-%d TSU %s Error -%s	CONTCOM	COM	IOM-%d

ID	INFORMATION for Major Alarms	GO TO
961	Indicates a faulted SP. Faulted SP.	Go to Step 17.
969	Indicates MGCP cannot connect to DNS server. Faulted voice over packet facilities, equipment at remote endpoint not provisioned or equipment at DNS server faulted.	Go to TAP-106.
971	Indicates a software error. Software or CPU subsystem error or mismatch in software versions between the SPs.	Go to Step 17.
982	Indicates a faulted integrated circuit on the IOM has been detected. Faulted IOM.	Go to Step 17.
983	Indicates there is no input signal on an E1 on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
985	Indicates there is framing cannot be detected on a input signal for an E1 on an E1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
987	Indicates receiving an E1 Alarm Indication Signal from the far end on an E1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
989	Indicates an RDI alarm in E1 or STM1 carrying an E1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
991	Indicates receiving an E1 Alarm Indication Signal from the far end tributary unit on an STM1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
993	Indicates a RDI alarm from the far end tributary unit on an STM1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
995	Indicates a loss of pointer from the far end tributary unit on an STM1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
997	Indicates the an E1 of an STM interface is not provisioned. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
999	Indicates there is framing cannot be detected on a input signal for an E1 in an STM1. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
1008	Corrupted disk file system or software or CPU subsystem error or module fault.	Go to Step 17.
1028		Go to TAP-106.
1032		Go to TAP-106.
1037		Go to TAP-106.
1043		Go to Step 17.
1045		Go to TAP-106.
1072	SP lost heartbeat with an interface.	Go to TAP-103
1077		Go to Step 17.
1081		Go to TAP-103
1083		Go to TAP-106
1085*		Go to Step 17.

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
1092	Protection SP-%c failed to boot in time	INTERR	EQPT	SP-%c
1094	Protection SP-%c failed to acknowledge the role negotiation message	INTERR	COM	SP-%c
1095	SP-%c lost communication with SP-%c	CONTCOM	COM	SP-%c
1096	SP-%c failed to receive SP Init message	INTERR	COM	SP-%c
1097	SP-%c failed to negotiate roles in time	INTERR	EQPT	SP-%c
1105	%s Payload Mismatch (Tu)	PLM	E1	IOM-%d-STM1-%d-TU12-%d
1108	Operator initiated backup failure	DBMEMTRF	COM	COM
1109	Scheduled backup failure	DBMEMTRF	COM	COM
1144	MGC-MG MEGACO excessive retransmissions %s Port %d to Port %d - IP %s - %d in %d seconds	DBMEMTRF	COM	COM
1146*	IOM-%d NFS mount of %s disk failed	NET	EQPT	IOM-%d
1148*	IOM-%d CPU-A lost heartbeat to CPU-%c	PROGFLT	EQPT	IOM-%d
1149*	%s terminated - status %d	PROGFLT	EQPT	IOM-%d
1150*	%s failed to start	INTERR	EQPT	IOM-%d
1152*	%s failed to restart	INTERR	EQPT	IOM-%d
1154*	%s not restarted, limit has been exceeded	INTERR	EQPT	IOM-%d
1155	IOM-%d over temperature fault	GP	COM	CHASSIS
1172	SIP - TrkGrp %d Feature Server unavailable %s	INT		IOM-%d
1175	SIP - congestion threshold 2 exceeded	EXTERR	COM	COM
1176	IOM-%d database failure using script %s - reason %s -status %d	GP	COM	COM
1177	SP-%c 100baseT loss of carrier on signaling access interface	CSC	COM	SP-%c
1179	SP-%c 100baseT signaling access interface did not restore in time	CSC	COM	SP-%c
1183	SLAM - Error synchronizing standby	SYNCEQPT	EQPT	SP-%c
1188	CC - congestion threshold 2 exceeded	EXTERR	COM	COM
1196	ISDN - congestion threshold 2 exceeded	EXTERR	COM	COM

ID	INFORMATION for Major Alarms	GO TO
1092	Protection SP-%c failed to boot in time.	Go to Step 17.
1094	SPs lost communication.	Go to Step 17.
1095	SPs lost communication.	Go to Step 17.
1096	SPs lost communication.	Go to Step 17.
1097	SPs lost communication.	Go to Step 17.
1105	Payload Mismatch	Go to TAP-101.
1108	Operator initiated backup failure	Go to Step 17.
1109	Scheduled backup failure	Go to Step 17.
1144	MGC-MG MEGACO excessive retransmissions %s Port %d to Port %d - IP %s - %d in %d seconds	Go to Step 17.
1146*	IOM-%d NFS mount of %s disk failed	Go to Step 17.
1148*	IOM-%d CPU-A lost heartbeat to CPU-%c	Go to Step 17.
1149*	%s terminated - status %d	Go to Step 17.
1150*	%s failed to start	Go to Step 17.
1152*	%s failed to restart	Go to Step 17.
1154*	%s not restarted, limit has been exceeded	Go to Step 17.
1155	IOM-%d over temperature fault	Go to Step 17.
1172	SIP - TrkGrp %d Feature Server unavailable %s	Go to Step 17.
1175	A SIP based feature server is overloading the Plexus.	Go to TAP-106.
1176	IOM-%d database failure using script %s - reason %s -status %d	Go to Step 17.
1177	SP-%c 100baseT loss of carrier on signaling access interface	Go to TAP-103.
1179	SP-%c 100baseT signaling access interface did not restore in time	Go to Step 17.
1183	Error synchronizing standby	Go to Step 17.
1188	MGCP based IAD is overloading the Plexus.	Go to TAP-106.
1196	An ISDN based piece of equipment is overloading the Plexus.	Go to TAP-106.

Table D. MINOR ALARMS

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
7	SP-%c 100baseT craft interface failure	IOTERM	EQPT	SP-%c
39	Power Source %c lost voltage	PWR	EQPT	Power-%c
40	Power Source %c on %s lost voltage	PWR	EQPT	Power-%c
76	Module in slot %d – not operational but provisioned as in-service	INTERR	EQPT	IOM-%d
79	Module in Slot %d present but not provisioned	PRCDRERR	EQPT	IOM-%d
92	SP-%c disk space threshold crossed on %s - Usage %.2f	PROCROVLD	COM	SP-%c
180	IOM-%d-PORT-%d Internal Loopback test failure	LOOPTERM	T1	IOM-%d-PORT-%d
182	IOM-%d-PORT-%d External loopback test failure	EXT	T1	IOM-%d-PORT-%d
287	IOM-%d – BITS timing voting error	INTERR	EQPT	IOM-%d
289	TMG-%c – Loss of Signal to BITS Input %c	LOS	T1	TMG-%c
291	TMG-%c – Loss of Frame to BITS Input %c	LOF	T1	TMG-%c
293	TMG-%c – Alarm Indication Signal on BITS Input %c	AIS	T1	TMG-%c
296	TMG-%c – Clock in Holdover	HLDOVRSYNC	EQPT	TMG-%c
298	TMG-%c – Clock in FreeRun	FRNGSYNC	EQPT	TMG-%c
326	%s signaling msg router buffer alloc failed – cause %d	PROGFLT	COM	SP-%c or IOM-%d
330	SP-%c PSF %d general alarm – cause %d	PROGFLT	COM	
335	SP-%c to %s relay channel %d congestion overflow	PROGFLT	COM	SP-%c or IOM-%d
353	MTP3 – link failed – inked %d on %s	CCSNETIRR	SLK	SLK-%d
367	MTP3 – rmtly blkd – inked %d on %s	CCSNETIRR	SLK	SLK-%d
469	ISUP – number of call references exceeded	INTSFT	COM	COM
470	ISUP – unable to allocate memory for a conn cntrl	INTSFT	COM	COM

ID	INFORMATION for Minor Alarms	GO TO
7	Software has detected a fault condition on the Ethernet device. Enet chip on SP front module has faulted or an invalid stimulus is attached to the craft enet on the SP.	Go to Step 17.
39	Indicates Power rail A or B has been disconnected from 48 volts. Remote fuse, power fail or DC wiring.	Go to TAP-105.
40	Indicates an IOM has lost power on one of the two DC power rails. Fuse has blown on IOM, bent pin or bad power detector on IOM	Go to Step 17.
76	IOM failover	Go to Step 17.
79	Indicates a module is plugged in, but does not have any provisioning to indicate CLEI, software revision, redundancy role, etc. Refer to ENT-EQPT. Module may be in incorrect slot or has not been provisioned.	Go to TAP-102.
92	Disk space threshold crossed.	Go to Step 17.
180	Indicates the loopback test pattern is not being detected by the receiver. Incorrect facilities wiring or transmission problem or faulted IOM.	Go to Step 17.
182	Indicates the loopback test pattern is not being detected by the receiver. Incorrect facilities wiring or transmission problem or faulted IOM	Go to TAP-101.
287	Indicates a triple-redundancy error on the clock select lines going to the IOM. Faulted IOM or SP or broken midplane connector.	Go to Step 17.
289	Indicates the T1 input (A or B) on the Timing Module cannot detect a signal. Cabling or faulted SP TMG	Go to TAP-104.
291	Indicates the T1 input (A or B) on the Timing Module cannot detect frame. Incorrect T1 framing format provisioned or invalid T1 input to Timing.	Go to TAP-104.
293	Indicates an AIS is being detected on the T1 input (A or B) to the Timing Module. Cabling	Go to TAP-104.
296	Indicates the Stratum Clock is not connected to a valid timing source (both inputs have faulted) so the Stratum Clock is operating in hold-over.	Go to Step 17.
298	Indicates the Stratum Clock has never been connected to a valid timing source, and hence has never locked to the timing source so it is free-running (asynchronous). BITS timing has never been applied to the chassis	Go to Step 17.
326	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
330	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
335	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
353	Indicates an SS7 link is Out of Service due to a faulted facility (T1) or IOM. Faulted facility (T1) or faulted IOM running MTP2	Go to TAP-106.
367	Indicates the remote SS7 link has been blocked by the remote end. A maintenance operation has blocked the link	Go to TAP-106.
469	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.
470	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17.

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
539	More than %d%% of trunk to DPC %s is out-of-service	TRKGRPLIM	TRK	PC-%d-%d-%d
555	More than %d percent of the trunks or lines in route %s are OOS	TRKGRPLIM	TRK	RT-%
567	LAPD - Link down - IntfcId %d linkId %d on %s	LAPDIRR	ISDNL2	ISDNIF-%d-LNK-%d
635	%s ILMI down	ILMIERR	PLK	ILMI-IOM-%d-OC-%d or ILMI-IOM-%d-T3-%d
672	STATS - connection failed - %s	OSLINK	PLK	SP-%c
678	STATS - error no free space in record_buffer file	PROGFLT	COM	SP-%c
684	BILLING - SP-%c connection failed - %s	AMATLINK	PLK	SP-%d
690	BILLING - SP-%c error no free space in record buffer file	PROGFLT	COM	SP-%c
700	No PVC Endpt provisioned for IOM-%d	EXT		
791	IOM-%d-%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded	INC	PLK	IOM-%d-OC-%d
839	Module in slot %d is unprotected	PROTNA	EQPT	IOM-%d
846	SP-%c software version %s not on disk	PRCDRERR	EQPT	SP-%c
847	%s ECC single bit error threshold crossed	DATAFLT	EQPT	SP-%c or IOM-%d
849	Standby SP-%c version-%s is incompatible with Active SP-%c	PRCDRERR	EQPT	SP-%c
853	SP-%c security log is 90 percent full	SECBUFTHEX	SECU	SP-%c
857	SAR on SF-%c Parity error on Port to SAR bus	CONTBUS	EQPT	SF-%c
858	SAR on SF-%c Synchronization error on Port to SAR bus	CONTBUS	EQPT	SF-%c
874	%s Initializing	PROTNA	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
881	IOM-%d - Line Timing Out-of-Service	SYNCOOS	T1	IOM-%d
886	IOM-%d-%s Initializing	PROTNA	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
901	MTP3 - link util for 1min period above thresh - linkId %d util %d percent	SLCR	SLK	SLK-%d
903	MTP3 - link util for 5min period above thresh - linkId %d util %d percent	SLCR	SLK	SLK-%d

ID	INFORMATION for Minor Alarms	GO TO
539	Indicates a threshold was crossed for number of trunks out of service to a Point Code. A maintenance operation has removed too many trunks or facilities (T1 or other) have rendered trunks OOS	Go to TAP-106.
555	Too many trunks are out of service.	Go to TAP-106
567	LAPD - Link down - IntfcId %d linkId %d on %s. Far end equipment problem or interface or link is OOS or provisioning	Go to TAP-106.
635	The Plexus has lost ATM ILMI management communication with the ATM switch. This indicates an ATM cell flow problem IOM fault or Cabling fault or Provisioning	Go to TAP-101.
672	Indicates the IP connection from the Plexus to the statistics server is disconnected. The statistics server or the management network is down or the statistics server's IP address is misconfigured.	Go to Step 17 .
678	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
684	Indicates the IP connection from the Plexus to the billing server is disconnected. The billing server or the management network is down or the billing server's IP address is misconfigured	Go to Step 17 .
690	Indicates a software error. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
700	Alarm is Obsolete	Go to Step 17 .
791	Indicates the Plexus is receiving cells with a VPI,VCI that is not recognized. The ATM switch, which the Plexus is connected to, or the PVC endpoint VPI/VCIs have been misprovisioned or signaling is occurring on a non-standard VCI.	Go to Step 17 .
839	Module in slot %d is unprotected. Protection module is faulted or removed or provisioning error.	Go to TAP-101.
846	SP-%c software version %s not on disk. Corrupted disk file system or Software or CPU subsystem error.	Go to TAP-103.
847	%s ECC single bit error threshold crossed	Go to Step 17 .
849	Standby SP-%c version-%s is incompatible with Active SP-%c. Upgrade was not completed.	Go to TAP-103.
853	SP-%c security log is 90 percent full. Log is close to full, clear log	Go to TAP-103.
857	SAR on SF-%c Parity error on Port to SAR bus. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
858	SAR on SF-%c Synchronization error on Port to SAR bus. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
874	%s Initializing. IOM has rebooted.	Go to TAP-101.
881	IOM-%d - Line Timing Out-of-Service. Incorrect provisioning or faulted IOM.	Go to TAP-101.
886	IOM-%d-%s Initializing. IOM has rebooted.	Go to TAP-101.
901	Indicates a 1 min threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.	Go to TAP-106.
903	Indicates a 5 min threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.	Go to TAP-106.

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
905	MTP3 - link util for 15min period above thresh - linkId %d util %d percent	SLCR	SLK	SLK-%d
918	More than %d percent of trunks in TrkGrp %d are OOS	TRKGRPLIM	TRK	TGRP-%d
922	ISUP ACC Congestion Level 1	EXTERR	COM	COM
928	PVCID %s-%d receiving T1 AIS sending AIS on %s	AIS	PLK	PVC-%d-%d-%d-%d-%d
929	PVCID %s-%d receiving T1 RAI sending RAI on %s	RAI	PLK	PVC-%d-%d-%d-%d-%d
935	SP-%c Persistent database space exhausted.	SFT	COM	SP-%c
942	GR303 TMC protection channel down - IfGrpNum-%d	LAPDIRR	ISDNL2	303IF-%d
944	GR303 EOC protection channel down - IfGrpNum-%d	LAPDIRR	ISDNL2	303IF-%d
956	MG overload detected CPU usage %d	EXT	COM	COM
962	SP-%c resource %s usage threshold - %d used of %d	SFT	COM	SP-%c
965	TMG-%c clock drift condition	INTERR	EQPT	SP-%c
967	Chassis not synchronized with NTP Server %s or %s	EXT	COM	COM
972	MGCP - cannot reach provisioned gateway %s - last address attempted %s	EXT	COM	COM
974	%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded	INC	T3	IOM-%d-T3-%d
1024	IOM-%d-PVC-%d bandwidth exceeded	GP	PLK	IOM-%d-PVC-%d
1026	ISDN - More than %d percent of B-Channels in IntfcId %d are OOS	TRKGRPLIM	ISDNL3	ISDNIF-%d
1030	CAS - More than %d percent of lines on IntfcId %d are OOS	TRKGRPLIM	PLK	CAS-IF-%d
1035	MGCP - More than %d percent of lines on IntfcId %d are OOS	TRKGRPLIM	PLK	MGCP-IF-%d
1049	SMDI - Voice Mail Link Down - MSRID %d smdiLnkId %d - %s	REMLINK	LINK	SMDI-LNK-%d--%d
1053	IOM-%d - Line Timing Out-of-Service	SYBCOOS	E1	IOM-%d
1060	TMG-%c - Loss of Signal to BITS Input %c	LOS	E1	TMG-%

ID	INFORMATION for Minor Alarms	GO TO
905	Indicates a 15 min threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.	Go to TAP-106.
918	More than %d percent of trunks in TrkGrp %d are OOS. Facilities Faults caused trunks to go OOS or Provisioning has taken trunks OOS.	Go to TAP-106.
922	ISUP ACC Congestion Level. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.	Go to TAP-106.
928	PVCID %s-%d receiving T1 AIS sending AIS on %s. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
929	PVCID %s-%d receiving T1 RAI sending RAI on %s. Possible cabling fault, provisioning error or faulted IOM.	Go to TAP-101.
935	SP-%c Persistent database space exhausted. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 17 .
942	Indicates the protection GR303 Trunk Management Channel is out of service. TMC down.	Go to TAP-106.
944	Indicates the protection GR303 Embedded Operations Channel (management function) is out of service. EOC is down.	Go to TAP-106.
956	MG overload detected CPU usage %d. Transport or equipment faults causing and overload, exceptionally high call setup/release rates from the MGC.	Go to TAP-106.
962	SP-%c resource %s usage threshold - %d used of %d. Software processes using an unexpected amount of a resource (buffers, file descriptors, etc).	Go to Step 17 .
965	TMG-%c clock drift condition. Slips on the T1 or a problem with the timing module on the SP	Go to Step 17 .
967	Chassis not synchronized with NTP Server %s or %s. NTP server is down, its IP address has changed or the Plexus NTP IP address is misconfigured. Ping NTP server.	Go to TAP-103.
972	MGCP - cannot reach provisioned gateway %s - last address attempted %s. The IAD which is using the Media Gateway Control Protocol is off-line, or there are IP network problems. Try pinging the IAD using the IP address or name. Check the IAD is powered up and operational.	Go to TAP-106.
974	%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded. Cells with an unrecognized VPI/VCI are being received on the ANA IOM. Check switch statistics for why it would be sending cells on that VPI, VCI.	Go to TAP-101.
1024	IOM-%d-PVC-%d bandwidth exceeded. Misconfiguration of PNA or ENA-ENDPTVOIP.	Go to TAP-101.
1026		Go to TAP-106.
1030		Go to TAP-106.
1035		Go to TAP-106.
1049		Go to TAP-106.
1053		Go to TAP-101.
1060	Indicates the E1 input (A or B) on the Timing Module cannot detect a signal. Cabling or faulted SP TMG	Go to TAP-104.

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
1062	TMG-%c - Loss of Frame to BITS Input %c	LOS	E1	TMG-%
1064	TMG-%c – Alarm Indication Signal on BITS Input %c	AIS	E1	TMG-%
1071	%s - IP-%s is unreachable	GP	COM	COM
1075	SP-%c Temporary database space threshold low	SFT	COM	SP-%c
1079	SF-%c ASX-%d FAC Threshold Crossed %d Min FAC %d	T-FAC	EPQT	SF-%
1086	SP-%c - EMS connectivity failure - IP-%s	EXT	COM	SP-%
1174	SIP - congestion threshold 1 exceeded	EXTERR	COM	COM
1195	ISDN - congestion threshold 1 exceeded	EXTERR	COM	COM

17. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

18.  **YOU HAVE COMPLETED THIS PROCEDURE.**

ID	INFORMATION for Minor Alarms	GO TO
1062	Indicates the E1 input (A or B) on the Timing Module cannot detect frame. Incorrect E1 framing format provisioned or invalid E1 input to Timing.	Go to TAP-104.
1064	Indicates an AIS is being detected on the E1 input (A or B) to the Timing Module. Cabling	Go to TAP-104.
1071		Go to TAP-106
1075	Temporary database space threshold low	Go to Step 17.
1079		Go to Step 17.
1086	EMS lost connectivity to SPs	Go to TAP-106
1174	A SIP based feature server is overloading the Plexus.	
1195	An ISDN based piece of equipment is overloading the Plexus.	

NOTES:

4.1 Contents for Trouble Analysis Procedures

Trouble analysis procedures follow in the order listed. If you are using documentation on CD ROM, use the bookmarks on the left of the screen to move to the desired procedure.

NUMBER	TITLE NAME
TAP-101	Clear IOM Alarms
TAP-102	Clear Module Alarms
TAP-103	Clear System Processor Alarms
TAP-104	Clear BITS Alarms
TAP-105	Clear Fan Alarms
TAP-106	Clear Miscellaneous Alarms

NOTES:

TAP-101 - CLEAR IOM ALARMS

SUMMARY: This procedure provides steps to perform trouble analysis practices for determining the cause and correction of the problems. This procedure assumes that the IOM had been operating error-free previously.



DANGER: *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



Caution: *Take precautions to prevent service disruptions when performing this procedure by carefully following steps.*



Note: This procedure assumes you are already logged into the Element Management System (EMS) or the TL1 interface (craft port or Telnet session).

Illustrations of EMS screens show screens to be selected and are not related to a particular alarms and may differ depending upon software version of the switch.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Do you know the alarm or are you sure you are in the correct procedure?
If **YES**, then continue to the next step.
If **NO**, then go to the **TAP-IXL** to determine alarm and TAP or IXL step to which to go.
3. Are you using the Element Management System (EMS) or a TL1 interface?
If **EMS**, then continue to the next step
If **TL1**, then go to [Step 8](#).



Note: In the following steps, you will use EMS to retrieve alarms or log information.

4. Ensure you have selected the switch for which you will be troubleshooting alarms.
5. In the toolbar, select *Actions*, then *View* and then *Alarms*.

The screenshot shows the PlexView - View Switch [richfamous] window. The 'Alarms' tab is active, displaying a table of alarms. The table has columns: Alarm ID, Entity Type, Notification, Condition Ty..., Service Effect, Date, Time, and Description. The alarms are sorted by Notification level, with CRITICAL alarms at the top and MINOR alarms at the bottom.

Alarm ID	Entity Type	Notification	Condition Ty...	Service Effect	Date	Time	Description
Chassis	EQUIPMENTUNIT	CRITICAL	PRCDRERR	SERVICEAFFEC...	06-09	11-14-11	2- No BITS Inputs are provisioned In Service
IOM-13-REAR	EQUIPMENTUNIT	CRITICAL	PRCDRERR	SERVICEAFFEC...	06-09	11-44-22	9- IOM-13 rear module does not match front mo...
SP-B	PACKETLINK	MAJOR	CSC	SERVICEAFFEC...	06-09	11-12-15	1- SP-B 100baseT loss of carrier on signaling l...
303IF-1	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-09	14-46-02	12- GR303 TMC channel down - IfGrpNum-1
303IF-1	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-09	14-46-02	13- GR303 EOC channel down - IfGrpNum-1
303IF-99	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-10	12-50-28	14- GR303 TMC channel down - IfGrpNum-99
303IF-99	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-10	12-50-28	15- GR303 EOC channel down - IfGrpNum-99
TMG-B	EQUIPMENTUNIT	MINOR	FRNGSYNC	NONSERVICEA...	06-09	11-14-12	3- TMG-B - Clock in FreeRun
IOM-7	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-56	5- Module in Slot 7 present but not provisioned
IOM-6	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-57	6- Module in Slot 6 present but not provisioned
IOM-1	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-57	7- Module in Slot 1 present but not provisioned
TMG-A	EQUIPMENTUNIT	MINOR	FRNGSYNC	NONSERVICEA...	06-09	11-15-27	10- TMG-A - Clock in FreeRun
IOM-12	EQUIPMENTUNIT	MINOR	PROTNA	NONSERVICEA...	06-09	11-44-11	8- Module in slot 12 is unprotected
ISDNIF-1200...	ISDNL2	MINOR	LAPDIRR	NONSERVICEA...	06-10	13-18-17	11- LAPD - Link down - Intfcd 12001 linkdd 1200...

At the bottom of the window, there is a 'Refresh poll' button and a 'Status' section with a progress bar and a 'Refresh' button.

Figure 1. Viewing Alarms

6. Click the Notification column to sort the alarms from CRITICAL to MINOR. You will troubleshoot CRITICAL alarms first.
7. Locate the IOM alarm and then go to [Step 10](#).

8. If using craft port connection or a Telnet session, then enter the RTRV-ALM-<ReptAid> command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: RTRV-ALM-ALL;

Command Example: RTRV-ALM-T3;

9. Determine alarms that apply to IOMs for troubleshooting using this procedure.

Note: Alarms are listed in numerical order of the alarm ID used in TL1. The “AID” column in the table relates to the EMS column, “Alarm ID.” If the version of software running on the SP does not output the alarm ID, you will have to search the “REPT string” to find the alarm.



If you cannot find the alarm, return to the TAP-IXL to find the alarm. You may be in the wrong procedure.

Clear critical alarms first, then major and finally minor alarms.

10. Locate the alarms in the appropriate table, and then go to the designated step and perform the steps to clear the alarm. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table A. CRITICAL IOM ALARMS](#)

If the alarm is a **MAJOR** alarm, then go to [Table B. MAJOR IOM ALARMS](#)

If the alarm is a **MINOR** alarm, then go to [Table C. MINOR IOM ALARMS](#)

Table A. CRITICAL IOM ALARMS

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
27*	IOM-%d Module CLEI %s does not match provisioned CLEI %s	PRCDRERR	EQPT	IOM-%d
38*	IOM-%d rear module does not match front module	PRCDRERR	EQPT	IOM-%d-REAR
57*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d-REAR
59*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d
201	%s Loss of Signal	LOS	T3	IOM-%d-T3-%d
203	%s Loss of Frame	LOF	T3	IOM-%d-T3-%d
205	%s Alarm Indication Signal	AIS	T3	IOM-%d-T3-%d
207	%s Remote Alarm Indication	RAI	T3	IOM-%d-T3-%d
219	%s Loss of Signal	LOS	STS1	IOM-%d-STs1-%d
221	%s Loss of Frame	LOF	STS1	IOM-%d-STs1-%d
223	%s Alarm Indication Signal (Path)	AIS-P	STS1	IOM-%d-STs1-%d
225	%s Remote Alarm Indication (Path)	RAI-P	STS1	IOM-%d-STs1-%d
227	%s Alarm Indication Signal (Line)	AIS-L	STS1	IOM-%d-STs1-%d
229	%s Remote Alarm Indication (Line)	RDI-L	STS1	IOM-%d-STs1-%d
231	%s Loss of Pointer (Path)	LOP-P	STS1	IOM-%d-STs1-%d
233	%s Unequipped (Path)	UNEQ-P	STS1	IOM-%d-STs1-%d
235	%s Payload Mismatch (Path)	PLM-P	STS1	IOM-%d-STs1-%d
237	%s Remote Failure Indication (Path)	RFI	STS1	IOM-%d-STs1-%d
239	%s Remote Failure Indication (Line)	RFI-L	STS1	IOM-%d-STs1-%d
241	%s Trace Id Mismatch cleared	TIM	STS1	IOM-%d-STs1-%d
243	%s Payload Defect Indication (Path)	PDI-P	STS1	IOM-%d-STs1-%d

TABLE A (continued)

ID #	INFORMATION for Critical Alarms	GO TO
27*	Indicates that the incorrect module type was inserted in an IOM slot.	Go to Step 47.
38*	Indicates the incorrect type of rear module is in the slot of a front module. For example, a DS1 rear module has been plugged into a slot of a DS3 front module.	Go to Step 47.
57*	The rear module in a slot has been removed from the chassis or is not detected to be present. Operator Error or faulted IOM.	Go to Step 37.
59*	Indicates the rear module is missing (either not detected to be in the chassis or not in the chassis). To get this alarm, the front module must be provisioned and present in the chassis.	Go to Step 37.
201	Indicates there is no input signal on a T3. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
203	Indicates there is framing cannot be detected on a input signal for a T3. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
205	Indicates receiving a T3 Alarm Indication Signal from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
207	Indicates receiving a T3 Remote Alarm Indication from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
219	IOM-%d-STS1-%d Loss of Signal. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
221	IOM-%d-STS1-%d Loss of Frame. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
223	IOM-%d-STS1-%d Alarm Indication Signal (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
225	IOM-%d-STS1-%d Remote Defect Indication (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
227	IOM-%d-STS1-%d Alarm Indication Signal (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
229	IOM-%d-STS1-%d Remote Defect Indication (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
231	Indicates the receiver on an STS1 interface cannot find a valid pointer in the data stream. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
233	Indicates the receiver on an STS1 interface indicates that the framing indicates an unequipped payload. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
235	IOM-%d-STS1-%d Payload Mismatch (Path). Indicates the receiver on an OC3 or OC12 interface is receiving a payload type that is not ATM cells. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
237	IOM-%d-STS1-%d Remote Failure Indication (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
239	IOM-%d-STS1-%d Remote Failure Indication (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
241	Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
243	IOM-%d-STS1-%d Payload Defect Indication (Path). Indicates a payload defect indication alarm in an STS1 signal carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.

TABLE A. Critical Alarms (continued)

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
245	%s Parity Error	EXT	STS1	IOM-%d-STs1-%d
266	%s Loss of Pointer (Vt)	LOP-V	T1	IOM-%d-%s-PORT-%d
268	%s Unequipped (Vt)	UNEQ-V	T1	IOM-%d-%s-PORT-%d
270	%s Payload Mismatch (Vt)	PLM-V	T1	IOM-%d-%s-PORT-%d
272	%s Remote Defect Indication (Vt)	RDI-V	T1	IOM-%d-%s-PORT-%d
274	%s Payload Defect Indication (Vt)	PDI-V	T1	IOM-%d-%s-PORT-%d
648	IOM-%d-%d Loss of Signal	LOS	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
650	IOM-%d-%d Loss of Frame	LOF	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
652	IOM-%d-%d Alarm Indication Signal	AIS	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
654	IOM-%d-%d Remote Alarm Indication	RAI	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
656	IOM-%d-%d Loss of Pointer	LOP	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
658	IOM-%d-%d Unequipped	UNEQ-P	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
660	IOM-%d-%d Payload Mismatch	PLM-P	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
862	%s Loss of Signal	LOS	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
864	%s Loss of Frame	LOF	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
866	%s Alarm Indication Signal (line)	AIS-L	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
868	%s Remote Defect Indication (line)	RDI-L	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
891	IOM-%d-ENET-%d Loss of Signal	LOS	ENET	IOM-%d-ENET-%d
893	IOM-%d-ENET-%d Loss of IP connectivity	EXT	ENET	IOM-%d-ENET-%d
895	IOM-%d-ENET-%d No ARP response from Far End	EXT	ENET	IOM-%d-ENET-%d
976	IOM-%d-%s Loss of IP Connectivity	LOF	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
1110	%s - Remote Failure Indication (Line)	RFI-V	T1	IOM-%d-%s-VT1-%d

TABLE A (continued)

ID #	INFORMATION for Critical Alarms	GO TO
245	IOM-%d-STs1-%d Parity Error. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
266	Indicates the receiver on a T1 of an OC3 or OC12 interface cannot find a valid pointer in the data stream. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
268	Indicates the receiver on a T1 of an OC3 or OC12 interface indicates that the framing indicates an unequipped payload. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
270	Indicates the receiver on a T1 of an OC3 or OC12 interface is receiving a payload type that is not ATM cells. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
272	Indicates a VT1.5 alarm in a signal carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
274	Indicates a payload defect indication alarm in a signal carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
648	Indicates the receiver on an OC3 or OC12 interface is NOT detecting a signal. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
650	Indicates the receiver on an OC3 or OC12 interface is NOT detecting framing. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
652	Indicates the receiver on an OC3 or OC12 interface is detecting AIS from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
654	Indicates the receiver on an OC3 or OC12 interface is detecting RAI from the far end. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
656	Indicates the receiver on an OC3 or OC12 interface cannot find a valid pointer in the data stream. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
658	Indicates the receiver on an OC3 or OC12 interface indicates that the framing indicates an unequipped payload. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
660	Indicates the receiver on an OC3 or OC12 interface is receiving a payload type that is not ATM cells. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
862	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Loss of Signal. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
864	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Loss of Frame. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
866	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Alarm Indication Signal (line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
868	OC alarm on the TDM IOM - alarm string looks like: IOM-%d-%s Remote Defect Indication (line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
891	Loss of ENET signal. Network is down or router/cabling problem.	Go to Step 76.
893	Loss of IP connectivity. Network is down or router/cabling problem.	Go to Step 76.
895	Network is down or router/cabling problem	Go to Step 76.
976	IOM-%d-%s Loss of IP Connectivity	Go to Step 61.
1110	T1 Remote Failure Indication. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.

ID	REPT String for Critical Alarm	CONDTYPE	TYPE	AID
1112	%s - Alarm Indication Signal (Line)	AIS-V	T1	IOM-%d-%s-VT1-%d
1114	%s - Remote Failure Indication Server (Path)	RFIS-V	T1	IOM-%d-%s-VT1-%d
1116	%s - Remote Failure Indication Connectivity (Path)	RFIC-V	T1	IOM-%d-%s-VT1-%d
1118	%s - Remote Failure Indication Payload (Path)	RFIP-V	T1	IOM-%d-%s-VT1-%d
1120	%s - Remote Failure Indication (Line)	RFI-T	E1	IOM-%d-STM1-%d-TU12-%d
1122	%s - Alarm Indication Signal (Line)	AIS-T	E1	IOM-%d-STM1-%d-TU12-%d
1124	%s - Remote Failure Indication Server (Path)	RFIS-T	E1	IOM-%d-STM1-%d-TU12-%d
1126	%s - Remote Failure Indication Connectivity (Path)	RFIC-T	E1	IOM-%d-STM1-%d-TU12-%d
1128	%s - Remote Failure Indication Payload (Path)	RFIP-T	E1	IOM-%d-STM1-%d-TU12-%d
1130	%s Loss of Multiframe (Path)	LOM-P	STS1	IOM-%d-STS1-%d
1132	%s Remote Failure Indication Server (Path)	RFIS-P	STS1	IOM-%d-STS1-%d
1134	%s Remote Failure Indication Connectivity (Path)	RFIC-P	STS1	IOM-%d-STS1-%d
1136	%s Remote Failure Indication Payload (Path)	RFIP-P	STS1	IOM-%d-STS1-%d

ID #	INFORMATION for Critical Alarms	GO TO
1112	Indicates a VT1.5 alarm in a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1114	T1 Remote Failure Indication Server (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1116	T1 Remote Failure Indication Connectivity (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1118	T1 Remote Failure Indication Payload (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1120	E1 Remote Failure Indication (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1122	E1 Alarm Indication Signal (Line). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1124	E1 Remote Failure Indication Server (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1126	E1 Remote Failure Indication Connectivity (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1128	E1 Remote Failure Indication Payload (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1130	STS-1 Loss of Multiframe (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1132	STS-1 Remote Failure Indication Server (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1134	STS-1 Remote Failure Indication Connectivity (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1136	STS-1 Remote Failure Indication Payload (Path). Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.

Table B. MAJOR IOM ALARMS

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
27*	IOM-%d Module CLEI %s does not match provisioned CLEI %s	PRCDRERR	EQPT	IOM-%d
38*	IOM-%d rear module does not match front module	PRCDRERR	EQPT	IOM-%d-REAR
57*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d-REAR
59*	IOM-%d rear module missing	REPLUNITMISS	EQPT	IOM-%d
171	IOM-%d-PORT-%d Loss of Signal	LOS	T1	IOM-%d-PORT-%d
173	IOM-%d-PORT-%d Loss of Frame	LOF	T1	IOM-%d-PORT-%d
175	IOM-%d-PORT-%d Alarm Indication Signal	AIS	T1	IOM-%d-PORT-%d
177	IOM-%d-PORT-%d Remote Alarm Indication	RAI	T1	IOM-%d-PORT-%d
254	% Loss of Signal	LOS	T1	IOM-%d-%s-PORT-%d
256	%s Loss of FrameF	LOF	T1	IOM-%d-%s-PORT-%d
258	%s Alarm Indication SignalS	AIS	T1	IOM-%d-%s-PORT-%d
260	%s Remote Alarm Indication	RAI	T1	IOM-%d-%s-PORT-%d
262	%s Alarm Indication Signal (Vt)	AIS-V	T1	IOM-%d-%s-PORT-%d
264	%s Remote Defect Indication (Vt)	RDI-V	T1	IOM-%d-%s-PORT-%d
285	IOM-%d - BITS incorrect clock source	INTERR	EQPT	IOM-%D
631	%s UNI down	UNIERR	PLK	UNI-IOM-%d-OC-%d or UNI-IOM-%d-T3-%d
843	Slot 11 in use - Interface 4 on slot 8 or 10 cannot be used	PRCDRERR	EQPT	IOM-%d
951	IOM-%d VOIP PVC-%d endpoint down	GP	PLK	IOM-%d-PVC-%d
983	%s Loss of Signal	LOS	E1	IOM-%d-E1-%d or IOM-%d-STM1-%d-E1-%d
985	%s Loss of Frame	LOF	E1	IOM-%d-E1-%d or IOM-%d-STM1-%d-E1-%d

TABLE B (continued)

ID	INFORMATION for Major Alarms	GO TO
27*	Indicates that the incorrect module type was inserted in an IOM slot.	Go to Step 47.
38*	Indicates the incorrect type of rear module is in the slot of a front module. For example, a DS1 rear module has been plugged into a slot of a DS3 front module.	Go to Step 47.
57*	The rear module in a slot has been removed from the chassis or is not detected to be present. Operator Error or faulted IOM.	Go to Step 37.
59*	Indicates the rear module is missing (either not detected to be in the chassis or not in the chassis). To get this alarm, the front module must be provisioned and present in the chassis.	Go to Step 37.
171	Indicates there is no input signal on a T1 on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
173	Indicates there is framing cannot be detected on a input signal for a T1 on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
175	Indicates receiving a T1 Alarm Indication Signal from the far end on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
177	Indicates receiving a T1 Remote Alarm indication from the far end on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
254	IOM-%d-STS1-%d-Port-%d Loss of Signal. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
256	Indicates a T1 LOF on a T1 in an STS or DS3. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
258	Indicates a T1 AIS on a T1 in an STS or DS3. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
260	Indicates a T1 Remote Alarm Indication on a T1 in an STS or DS3. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
285	Indicates an IOM is using not using the correct clock from the SP-A or SP-B module. Faulted IOM or SP.	Go to Step 32.
262	Indicates a VT1.5 alarm in a STS1 carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
264	Indicates a VT1.5 alarm in a STS1 carrying a T1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
631	Indicates an UNI is not communicating. Missing or faulted equipment modules or not provisioned.	Go to Step 55.
843	The ATM switch port for slot 11 is used either to support slot 11 or to allow 4 GigE/OC interfaces in slot 10, but not both.	Go to Step 72.
951	Indicates IP connectivity between the Plexus and the router is broken when using the PNA IOM for IP. Router is down, PNA IOM has faulted, the OC fiber has been removed or fiber is faulty.	Go to Step 61.
983	Indicates there is no input signal on an E1 on a T1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
985	Indicates there is framing cannot be detected on a input signal for an E1 on an E1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.

TABLE B (continued)

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
987	%s Alarm Indication Signal	AIS	E1	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
989	%s Remote Defect Indication	RDI	E1	IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d
991	%s Alarm Indication Signal (Tu)	AIS-T	E1	IOM-%d-STM1-%d-E1-%d
993	%s Remote Defect Indication (Tu)	RDI-T	E1	IOM-%d-STM1-%d-E1-%d
995	%s Loss of Pointer (Tu)	LOP-T	E1	IOM-%d-STM1-%d-E1-%d
997	%s Unequiped (Tu)	UNEQ-T	E1	IOM-%d-STM1-%d-E1-%d
999	%s Loss of Multiframe (Tu)	LOF	E1	IOM-%d-STM1-%d-E1-%d
1105	%s Payload Mismatch (Tu)	PLM	E1	IOM-%d-STM1-%d-TU12-%d

Table C. MINOR IOM ALARMS

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
182	IOM-%d-PORT-%d External loopback test failure	EXT	T1	IOM-%d-PORT-%d
635	%s ILMI down	ILMIERR	PLK	ILMI-IOM-%d-OC-%d or ILMI-IOM-%d-T3-%d
839	Module in slot %d is unprotected	PROTNA	EQPT	IOM-%d
874	%s Initializing	PROTNA	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
881	IOM-%d - Line Timing Out-of-Service	SYNCOOS	T1	IOM-%d
886	IOM-%d-%s Initializing	PROTNA	OC	IOM-%d-OC3-%d or IOM-%d-OC12-%d
928	PVCID %s-%d receiving T1 AIS sending AIS on %s	AIS	PLK	PVC-%d-%d-%d-%d-%d
929	PVCID %s-%d receiving T1 RAI sending RAI on %s	RAI	PLK	PVC-%d-%d-%d-%d-%d
974	%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded	INC	T3	IOM-%d-T3-%d
1024	IOM-%d-PVC-%d bandwidth exceeded	GP	PLK	IOM-%d-PVC-%d
1053	IOM-%d - Line Timing Out-of-Service	SYBCOOS	E1	IOM-%d

TABLE B (continued)

ID	INFORMATION for Major Alarms	GO TO
987	Indicates receiving an E1 Alarm Indication Signal from the far end on an E1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
989	Indicates an RDI alarm in E1 or STM1 carrying an E1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
991	Indicates receiving an E1 Alarm Indication Signal from the far end tributary unit on an STM1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
993	Indicates a RDI alarm from the far end tributary unit on an STM1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
995	Indicates a loss of pointer from the far end tributary unit on an STM1 IOM. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
997	Indicates the an E1 of an STM interface is not provisioned. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
999	Indicates there is framing cannot be detected on a input signal for an E1in an STM1. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
1105	Payload Mismatch	Go to Step 11.

TABLE C (continued)

ID	INFORMATION for Minor Alarms	GO TO
182	Indicates the loopback test pattern is not being detected by the receiver. Incorrect facilities wiring or transmission problem or faulted IOM	Go to Step 11.
635	The Plexus has lost ATM ILMI management communication with the ATM switch. This indicates an ATM cell flow problem IOM fault or Cabling fault or Provisioning	Go to Step 61.
839	Module in slot %d is unprotected. Protection module is faulted or removed or provisioning error.	Go to Step 21.
874	%s Initializing. IOM has rebooted.	Go to Step 81.
881	IOM-%d - Line Timing Out-of-Service. Incorrect provisioning or faulted IOM.	Go to Step 25.
886	IOM-%d-%s Initializing. IOM has rebooted.	Go to Step 81.
928	PVCID %s-%d receiving T1 AIS sending AIS on %s. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
929	PVCID %s-%d receiving T1 RAI sending RAI on %s. Possible cabling fault, provisioning error or faulted IOM.	Go to Step 11.
974	%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded. Cells with an unregonized VPI/VCI are being received on the ANA IOM. Check switch statistics for why it would be sending cells on that VPI, VCI.	Go to Step 55.
1024	IOM-%d-PVC-%d bandwidth exceeded. Misconfiguration of PNA or ENA-ENDPTVOIP.	Go to Step 67.
1053		Go to Step 25.



Note: The following steps will check incoming signals and cabling.

11. Check for the presence of an incoming signal at the cross-connect or patch panel by monitoring the output of the down-line equipment using appropriate test equipment. Refer to your engineering documentation for the cross-connect location.
12. Is there a signal?

 If **YES**, then go to [Step 15](#).
 If **NO**, then continue to the next step.
13. Is the missing channel normal at this time (i.e., far-end DS3 has not yet been turned up)?

 If **YES**, then continue to the next step.
 If **NO**, then notify the far-end about missing signal.
14.  **YOU HAVE COMPLETED THIS PROCEDURE.**
15. Check the cabling between the cross-connect or fiber entrance panel and the IOM.
16. Check for the presence of an error-free incoming signal at the cable that connects to the IOM using appropriate test equipment.
17. Is there an error-free signal?

 If **YES**, reconnect the cable and then go to [Step 19](#).
 If **NO**, then continue to the next step.
18. Replace the cable between the IOM and the cross-connect and go to [Step 16](#).
19. Verify that the alarm has cleared.

 If using **EMS**, check alarms. Refer to [Step 5](#).

 If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
 Refer to [Step 8](#).
20. Has the alarm cleared?

 If **YES**, then go to [Step 85](#).
 If **NO**, then go to [Step 25](#).

21. Is a protection module installed?

If **YES**, then replace protection module and go to [Step 23](#).

Reference: **DLP-515**

If **NO**, then continue to the next step.

22. According to site documentation, should a protection module be installed?

If **YES**, then install a protection module.

Reference: **DLP-511**

If **NO**, then go to [Step 25](#) to correct provisioning.

23. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

24. Has the alarm cleared?

If **YES**, then go to [Step 85](#).

If **NO**, then continue to the next step.



Note: The following steps will check provisioning.

25. Check provisioning of the IOM.

If using **TL1**, use the appropriate RTRV command.

Command Example: RTRV-T1::IOM-1-PORT-1;

Command Example: RTRV-T3::IOM-3-T3-3;

If using **EMS**, select the IOM and port. Right-click the port to view provisioning information.

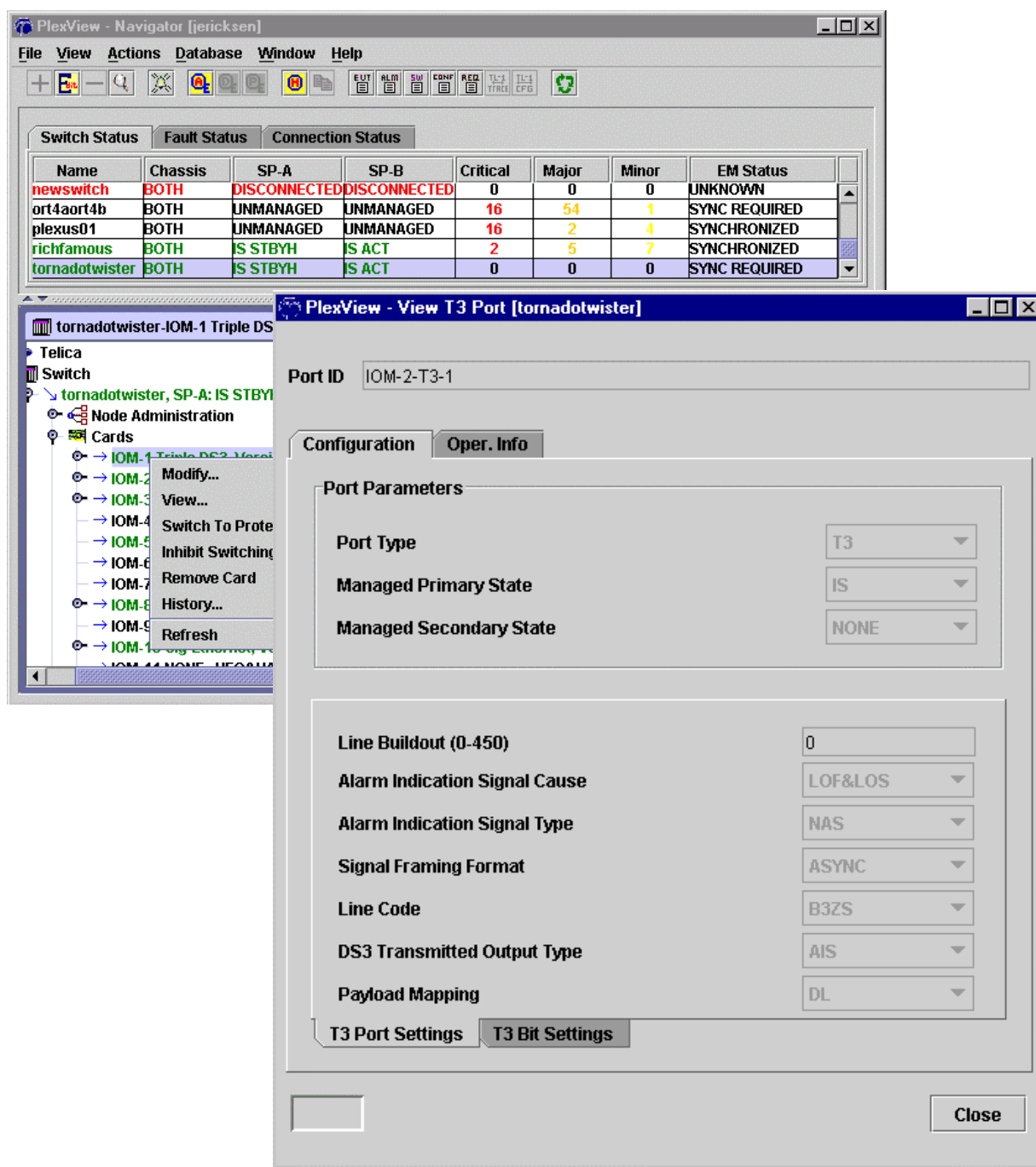


Figure 2. Viewing IOM Port Information

26. Is provisioning correct?

If YES, then go to [Step 28](#).

If NO, then continue to the next step.

27. Correct provisioning if required.

If using **TL1**, use the appropriate ED command and then go to [Step 30](#).

If using **EMS**, right-click the IOM port, select *Modify* and change the incorrect parameter. Then go to [Step 30](#).

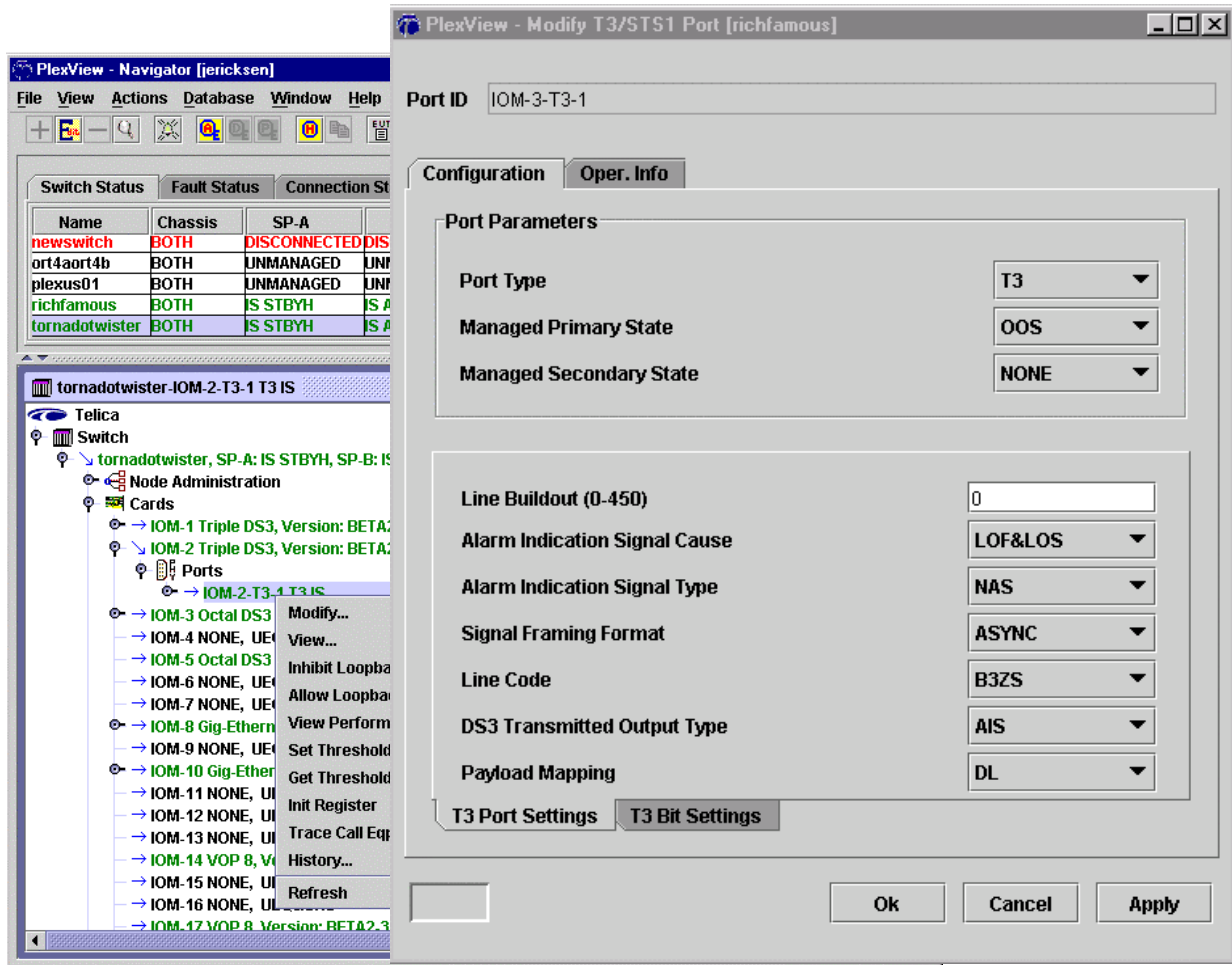


Figure 3. Modifying IOM Port Parameters

28. Check software and CLEI provisioning of the IOM

If using **TL1**, use the RTRV-EQPT and RTRV-INFO-EQPT commands.

If using **EMS**, right-click the IOM, and then select *View*.

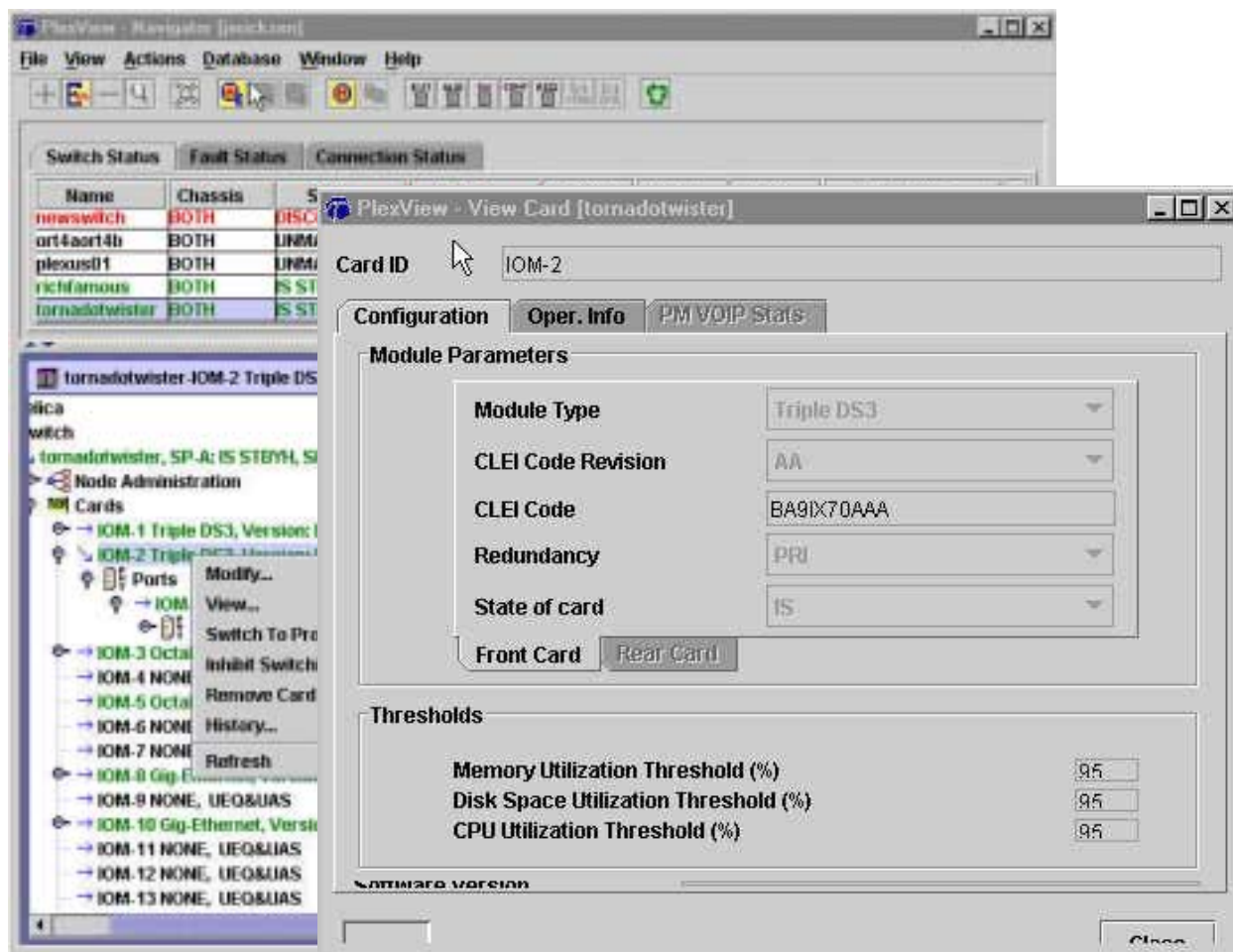


Figure 4. Viewing IOM Parameters

29. If software version or CLEI of the module is different from the provisioned information, provision CLEI of module

If using **TL1**, change as outlined in **DLP-515**.

If using **EMS**, right-click the IOM, select *Modify* and change the incorrect parameter.

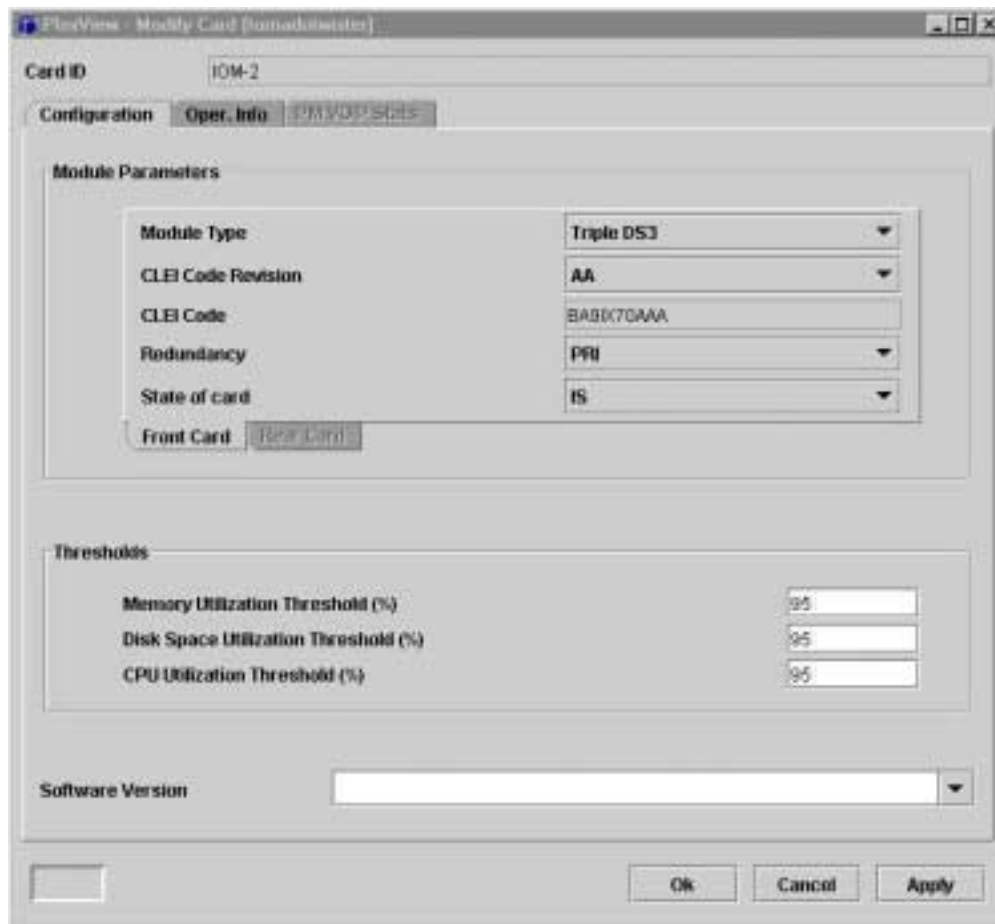


Figure 5. Modifying IOM Parameters

30. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

Command Example: RTRV-ALM-T3;

31. Has the alarm cleared?

If **YES**, then go to [Step 85](#)

If **NO**, then go to [Step 84](#).



Note: The following steps will replace a faulted IOM.

- 32.** Is the IOM an ATM or Packet Network Access module with fiber optic connections?

If **YES**, then go to [Step 34](#) and replace front module.

If **NO**, then continue to the next step.

- 33.** Switch the module to protection.

If using **TL1**, use the appropriate using the SW- TOPROTN-EQPT command if required.

Command Syntax: SW- TOPROTN-EQPT :: IOM- {1 . . . 17};

Command Example: SW- TOPROTN-EQPT :: IOM- 3;

If using **EMS**, right-click the IOM and select *Switch to Protection*.

- 34.** Replace the faulted front IOM.

Reference: **DLP-515**

- 35.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

- 36.** Has the alarm cleared?

If **YES**, then go to [Step 85](#).

If **NO**, then go to [Step 84](#).

- 37.** Check that the rear module is present. Is it present?

If **YES**, then go to [Step 44](#).

If **NO**, then continue to the next step.

- 38.** Install the rear IOM and then go to [Step 42](#).

Reference: **DLP-515**

- 39.** Loosen top and bottom screw and using ejector handles disconnect the rear module from the midplane and reconnect.

- 40.** Loosen top and bottom screw and using ejector handles disconnect the front module from the midplane and reconnect.

- 41.** Wait for the front module to reboot and initialize. This can take several minutes.

42. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

43. Has the alarm cleared?

If **YES**, then go to [Step 85](#).

If **NO**, then continue to the next step.



Caution: *The following steps will disrupt traffic on ALL ports of the IOM.*

44. Replace the faulted rear IOM.

Reference: **DLP-515**

45. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

46. Has the alarm cleared?

If **YES**, then go to [Step 85](#).

If **NO**, then go to [Step 33](#) and replace the front IOM.



Note: The following steps will check module type and CLEI provisioning.

47. Note the CLEI located on the module front next to the bottom ejector handle and the part number next to the top ejector handle.

48. Check software and CLEI provisioning of the IOM

If using **TL1**, use the RTRV - INFO - EQPT commands and note the CLEI and module type

If using **EMS**, right-click the IOM, then select *View* and note the CLEI and module type. See [Figure 4](#).

49. Are the CLEI and module type on the module front the same as the CLEI and module type retrieved with the RTRV - INFO - EQPT command or as displayed in EMS?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 84](#).

50. Retrieve provisioned information about the IOM

If using **TL1**, use the RTRV-EQPT command and note CLEI and software version.

Command Example: **RTRV-EQPT::IOM-3;**

If using **EMS**, right-click the IOM, then select *View* and then click *Oper. Info* and note the CLEI and module type.

51. Are the CLEI and module types different?

If they are the **same**, then go to [Step 53](#).

If **only** CLEI codes are different, then continue to the next step.

If the **module types** are different, then replace with the correct module type.

Reference: **DLP-515**

52. Change the provisioned CLEI to the module CLEI.

If using **TL1**, use the appropriate using the ED-EQPT command.

Command Syntax: ED-EQPT::IOM-{1. . . 17}:[CTAG]::
IOMODULETYPE=<ioModuleType>;

Command Example: ED-EQPT::IOM-1:::
IOMODULETYPE=BA9IX70AAB;

If using **EMS**, right-click the IOM, select *Modify* and change the incorrect parameter. Refer to [Step 29](#) and [Figure 5](#).

53. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

54. Has the alarm cleared?

If **YES**, then go to [Step 85](#)

If **NO**, then go to [Step 84](#).

55. Check that the state of the ANA or PNA IOM

If using **TL1**, use the RTRV-EQPT command.

Command Example: RTRV-EQPT::IOM-8:

Command Example: RTRV-EQPT::IOM-10:

If using **EMS**, right-click the IOM, select *View* and then click *Oper. Info* as shown in [Figure 6](#).

The screenshot displays the PlexView - Navigator [jericksen] application window. The main window shows a table of switch status, and a secondary window, PlexView - View Card [richfamous], provides a detailed view of the IOM-8 card.

Switch Status Table:

Name	Chassis	SP-A	SP-B	Critical	Major	Minor	EM Status
newswitch	BOTH	DISCONNECTED	DISCONNECTED	0	0	0	UNKNOWN
ort4aort4b	BOTH	UNMANAGED	UNMANAGED	16	54	1	SYNC REQUIRED
plexus01	BOTH	UNMANAGED	UNMANAGED	16	2	4	SYNCHRONIZED
richfamous	BOTH	IS ACT	IS STBYH	2	10	4	SYNCHRONIZED
tornadotwister	BOTH	IS ACT&NBK	IS STBYC	0	3	4	SYNC REQUIRED

PlexView - View Card [richfamous] Details:

Card ID: IOM-8

Configuration | Oper. Info | PM VOIP Stats

Primary State: IS

Secondary State: ACT&NBK

CLEI Code: BAA91Z0GAA

Description: Telica Quad OC12 Module

Hardware Version: 2-5

Serial Number: 0000000112500008

Front Card | Rear Card | Faults

Refresh poll | Status

Refresh [0 30 60 90 120 150 180 210 240 270 300]

Close

Figure 6. ANA or PNA IOM Status

- 56.** Is the module out-of-service (OOS)?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 58](#).

- 57.** Determine why the module is out-of-service (OOS), correct and then go to [Step 70](#).

- 58.** Check provisioning of module

If using **TL1**, use the appropriate using the `RTRV-ocFacility` command.

Reference: **DLP-587**

Command Syntax: `RTRV-OC<3|12>:[TID]:<oc_id>:
[CTAG];`

Command Example: `RTRV-OC3::IOM-8-OC3-1;`

If using **EMS**, right-click the IOM, select *View* and then *Configuration*.

- 59.** Is the module provisioned correctly?

If **YES**, then go to [Step 64](#).

If **NO**, then continue to the next step.

- 60.** Correct provisioning of module

If using **TL1**, use the appropriate `ED-ocFacility` command and then go to [Step 70](#).

Reference: **DLP-587**

If using **EMS**, right-click the IOM, select *View* and then *Configuration*. Make required changes. See [Figure 7](#).

- 61.** Check that the state of the ANA or PNA IOM

If using **TL1**, use the appropriate using the `RTRV-EQPT` command.

Command Example: `RTRV-EQPT::IOM-8:`

If using **EMS**, right-click the IOM, select *View* and then click *Oper. Info* as shown in [Figure 6](#).

- 62.** Is the module out-of-service (OOS)?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 64](#).

- 63.** Determine why the module is out-of-service (OOS), correct and then go to [Step 70](#).

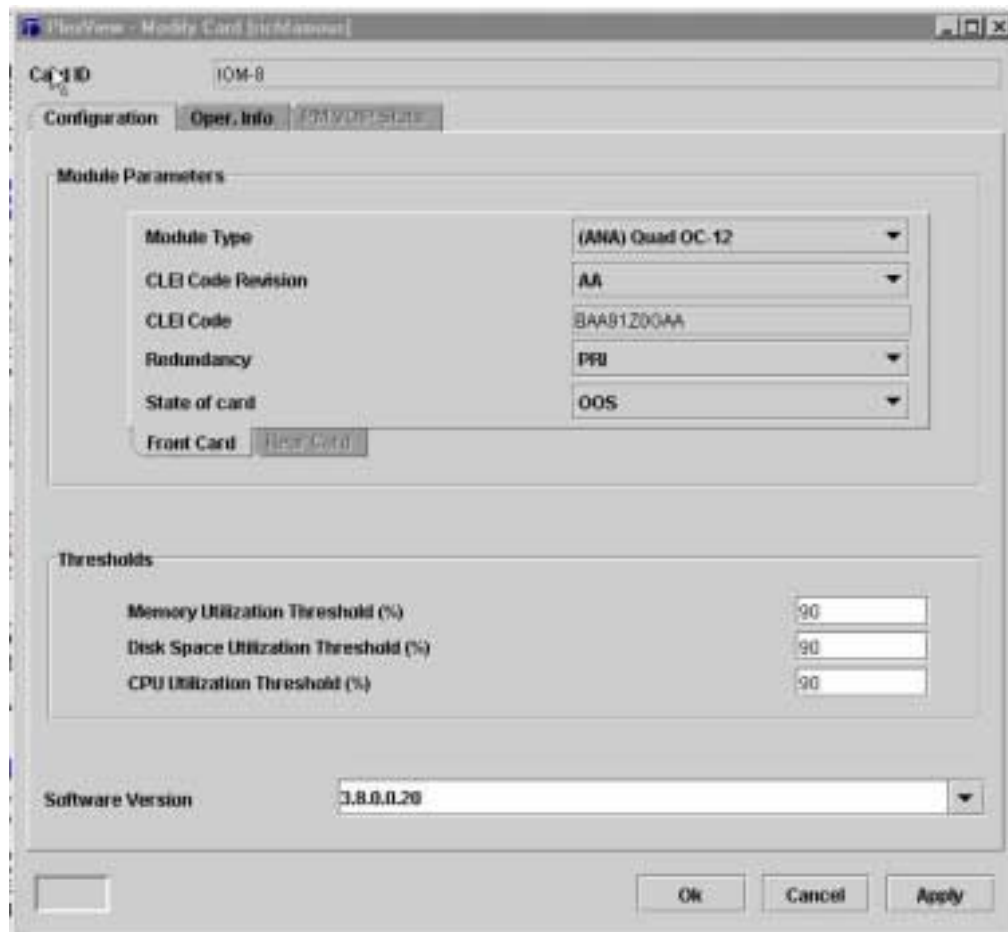


Figure 7. Configuration of Network Access IOM

64. Check the IP configuration of PVC (Permanent Virtual Connection) end points on the Plexus and ensure they match the configuration of the router.

If using **TL1**, use the RTRV-PVC-ENDPTVOIP command.

Command Example: RTRV-PVC-ENDPTVOIP;

Reference: **DLP-588**

Command Example: RTRV-PVC-ENDPTVOA;

Reference: **DLP-593**

If using **EMS**, right-click *VOIP, PVC Endpoint* and then *View*. See [Figure 8](#).

65. Does the configuration of the Plexus match the IP address of the router?

If **YES**, then go to [Step 70](#).

If **NO**, then continue to the next step.

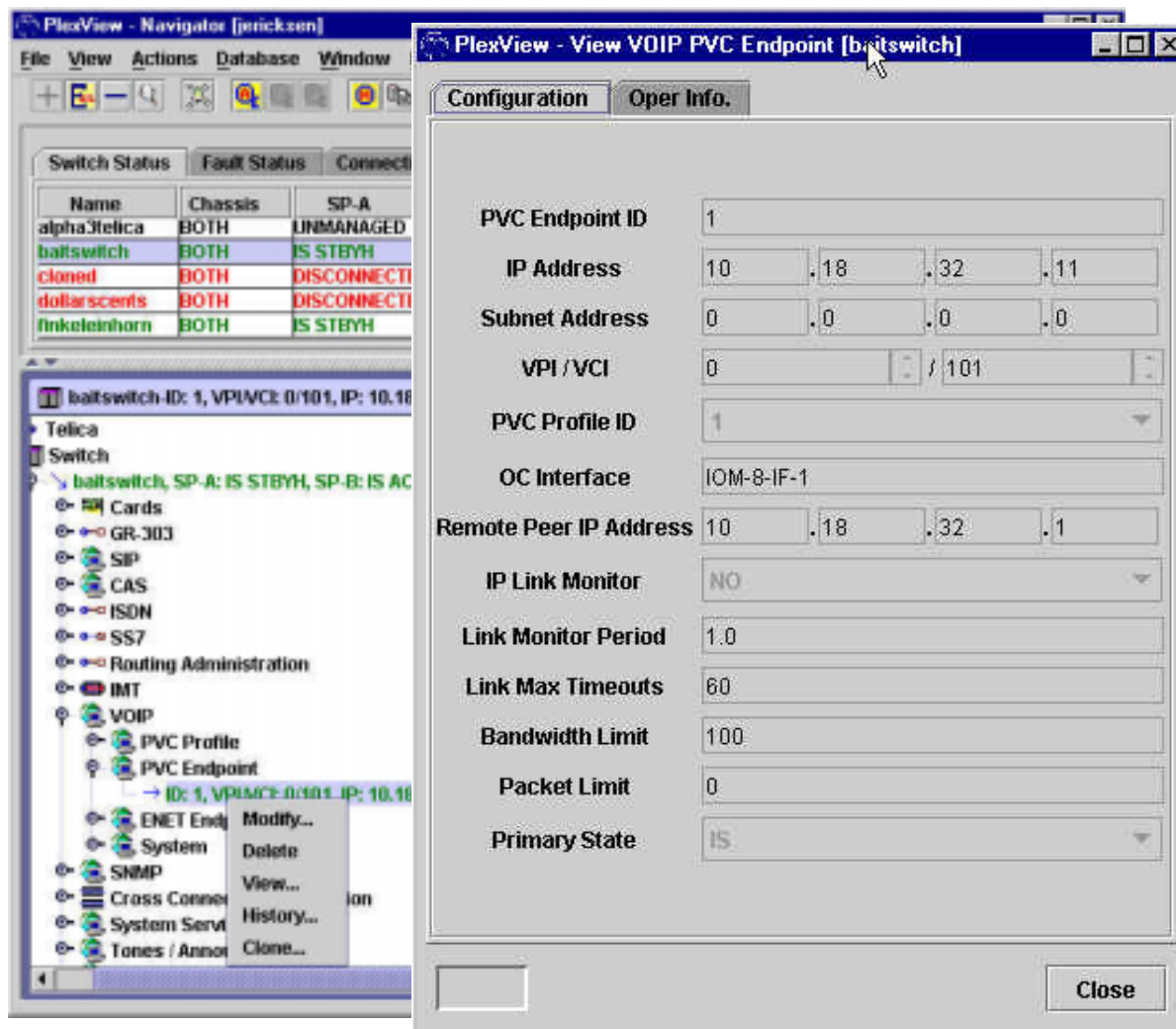


Figure 8. View End Point Provisioning

66. Correct the provisioning of the Plexus.

If **VoIP**, then continue to the next step.

If **VTtoA**, then go to [Step 69](#).

67. Remove a PVC endpoint.

If using **TL1**, use the DLT-PRFL-PVC-ENDPTVOIP command.

Reference: **DLP-588**

Command Syntax: DLT-PVC-ENDPTVOIP:[TID]:<pvcId>:
[CTAG];

Command Example: DLT-PVC-ENDPTVOIP::1;

If using **EMS**, right-click PVC Endpoint and then select *Delete*.

68. Provision the parameters associated with a PVC endpoint

If using **TL1**, use the ENT -PVC-ENDPTVOIP command and then go to [Step 70](#).

Command Syntax: ENT -PVC-ENDPTVOIP:[TID]:<pvcId>:
[CTAG]::IPADDR=<ipAddr>,VPI=<vpi>,
VCI=<vci>,PVCPRFL=<pvcPrflId>,
[INTFC=<intfc>],
[RMTPEERIP=<rmtPeerIp>],
[IPLNKMON=<ipLnkMon>]:<pst>;

Command Example:ENT -PVC-ENDPTVOIP::1:::
IPADDR=192.9.20.27,PVCPRFL=1,
INTFC=IOM-8-IF-1,:PST=IS;

If using **EMS**, right-click PVC Endpoint and then select *Modify*. Make required changes and then go to [Step 70](#).

69. Change a VOA PVC endpoint

If using **TL1**, use the ED -PVC-ENDPTVOA command.

Reference: **DLP-593**

Command Syntax: ED -PVC-ENDPTVOA:[TID]:
<dpcDstMgBncId>:[CTAG]::
[CONNPRFLID=<connPrflId>],
[INTERFACEID=<interfaceId>],
[VPI=<vpi>],[VCI=<vci>],
[NAME=<name>],[CMDMDE=<cmdmde>]:
[<pst>;

Command Example: ED -PVC-ENDPTVOA::
192-47-32-5-100::: CONNPRFLID=1,
INTERFACEID=IOM-8-OC12-1,:IS;

If using **EMS**, right-click PVC Endpoint and then select *Modify*. Make required changes.

70. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

71. Has the alarm cleared?

If **YES**, then go to [Step 85](#).
If **NO**, then go to [Step 84](#).



Note: When all four ports of an ANA, PNA or ENA module installed in I/O-8 and 10 are used, an IOM in I/O-11 cannot be used.

72. Are there an IOM in I/O-11 slot and PNA, ANA or ENA IOMs in slots 8 and 10?
- If YES, then continue to the next step.
If NO, then go to [Step 84](#).
73. You cannot use all four ports of PNA, ANA or ENA IOMs in slots 8 and 10 with an IOM in I/O-11. Do one of the following:
- Delete the fourth port of the PNA, ANA or ENA IOM in slots 8.
If using **TL1**, place the port out of service using the appropriate `ED-OC<3-12>::<oc-id>:::OOS` command and then delete the port with the `DEL-OC<3-12>::<oc-id>` command.
If using **EMS**, right-click the PVC End point (IF-4) and select *Delete*.
 - Place the IOM in I/O-11 out-of-service (OOS) and then delete the IOM.
If using **TL1**, use the appropriate using the `ED-EQPT::IOM-11:::OOS` command and then delete the IOM using the `DLT-EQPT::IOM-11` command.
If using **EMS**, right-click the module in slot 11, select modify, change provisioning to OOS and then delete the module.
74. Verify that the alarm has cleared.
- If using **EMS**, check alarms. Refer to [Step 5](#).
- If using **TL1**, retrieve alarms by using the `RTRV-ALM-<ReptAid>` command.
Refer to [Step 8](#).
75. Has the alarm cleared?
- If **YES**, then go to [Step 85](#).
If **NO**, then go to [Step 84](#).
76. Has an Ethernet cable been disconnected from the Plexus or the hub or router?
- If **YES**, then reconnect the cable and go to [Step 79](#).
If **NO**, then continue to the next step.
77. Can you ping the router?
- If **YES**, then replace the cable between the hub/router and go to [Step 79](#).
If **NO**, then troubleshoot the network problem.
78.  **YOU HAVE COMPLETED THIS PROCEDURE.**

79. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

80. Has the alarm cleared?

If **YES**, then go to [Step 85](#).

If **NO**, then go to [Step 84](#).

81. IOM is rebooting and initializing. This can take several minutes.

82. Wait several minutes and then retrieve information about the IOM

If using **TL1**, use the RTRV-EQPT or RTRV-EQPT-ALL command to determine status of module.

Command Example: RTRV-EQPT : : IOM-3 ;

If using **EMS**, right-click the module and select *View*. If the module is protected, right-click the protection module and select *View*.

83. Has the IOM completed initialization?

If **YES**, then go to [Step 85](#).

If **NO**, then go to [Step 84](#).

84. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

85.  **YOU HAVE COMPLETED THIS PROCEDURE.**

NOTES:

TAP-102 - CLEAR MODULE ALARMS

SUMMARY: This procedure provides steps to perform trouble analysis practices for determining the cause and correction of the problems. This procedure assumes that the module had been operating error-free previously.



DANGER: *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



Caution: *Take precautions to prevent service disruptions when performing this procedure by carefully following steps.*



Note: This procedure assumes you are already logged into the Element Management System (EMS) or the TL1 interface (craft port or Telnet session).

Illustrations of EMS screens show screens to be selected and are not related to a particular alarms and may differ depending upon software version of the switch.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Do you know the alarm or are you sure you are in the correct procedure?
If **YES**, then go to [Step 10](#).
If **NO**, then go to the **TAP-IXL** to determine alarm and TAP or IXL step to which to go.
3. Are you using the Element Management System (EMS) or a TL1 interface?
If **EMS**, then continue to the next step
If **TL1**, then go to [Step 8](#).



Note: In the following steps, you will use EMS to retrieve alarms or log information.

4. Ensure you have selected the switch for which you will be troubleshooting alarms.
5. In the toolbar, select *Actions*, then *View* and then *Alarms*.

PlexView - View Switch [richfamous]

Configuration | Oper. Info | Stats | PM Stats | Conditions | **Alarms** | IP Route

Alarm ID	Entity Type	Notification...	Condition Ty...	Service Effect	Date	Time	Description
Chassis	EQUIPMENTUNIT	CRITICAL	PRCDRERR	SERVICEAFFEC...	06-09	11-14-11	2- No BITS Inputs are provisioned In Service
IOM-13-REAR	EQUIPMENTUNIT	CRITICAL	PRCDRERR	SERVICEAFFEC...	06-09	11-14-22	9- IOM-13 rear module does not match front mo...
SP-B	PACKETLINK	MAJOR	CSC	SERVICEAFFEC...	06-09	11-12-15	1- SP-B 100baseT loss of carrier on signaling l...
303IF-1	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-09	14-46-02	12- GR303 TMC channel down - IfGrpNum-1
303IF-1	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-09	14-46-02	13- GR303 EOC channel down - IfGrpNum-1
303IF-99	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-10	12-50-28	14- GR303 TMC channel down - IfGrpNum-99
303IF-99	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-10	12-50-28	15- GR303 EOC channel down - IfGrpNum-99
TMG-B	EQUIPMENTUNIT	MINOR	FRNGSYNC	NONSERVICEA...	06-09	11-14-12	3- TMG-B - Clock in FreeRun
IOM-7	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-56	5- Module in Slot 7 present but not provisioned
IOM-6	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-57	6- Module in Slot 6 present but not provisioned
IOM-1	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-57	7- Module in Slot 1 present but not provisioned
TMG-A	EQUIPMENTUNIT	MINOR	FRNGSYNC	NONSERVICEA...	06-09	11-15-27	10- TMG-A - Clock in FreeRun
IOM-12	EQUIPMENTUNIT	MINOR	PROTNA	NONSERVICEA...	06-09	11-14-11	8- Module in slot 12 is unprotected
ISDNIF-1200...	ISDNL2	MINOR	LAPDIRR	NONSERVICEA...	06-10	13-18-17	11- LAPD - Link down - Intfcd 12001 linkld 1200...

Refresh poll | Status

Refresh

0 30 60 90 120 150 180 210 240 270 300

Figure 1. Viewing Alarms

6. Click the Notification column to sort the alarms from CRITICAL to MINOR. You will troubleshoot CRITICAL alarms first.
7. Locate the IOM alarm and then go to [Step 10](#).

8. If using craft port connection or a Telnet session, then enter the RTRV-ALM-<ReptAid> command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: RTRV-ALM-ALL;

Command Example: RTRV-ALM-T3;

9. Determine alarms that apply to modules for troubleshooting using this procedure.

Note: Alarms are listed in numerical order of the alarm ID used in TL1. The “AID” column in the table relates to the EMS column, “Alarm ID.” If the version of software running on the SP does not output the alarm ID, you will have to search the “REPT string” to find the alarm.



If you cannot find the alarm, return to the **TAP-IXL** to find the alarm. You may be in the wrong procedure.

Clear critical alarms first, then major and finally minor alarms.

10. Locate the alarms in the appropriate table, and then go to the designated step and perform the steps to clear the alarm. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table A. Critical Module Alarms](#)

If the alarm is a **MAJOR** alarm, then go to [Table B. Major Module Alarms.](#)

If the alarm is a **MINOR** alarm, then go to [Table C. Minor Module Alarms.](#)

Table A. Critical Module Alarms

ID	REPT String for Critical Alarms	CONDTYPE	TYPE	AID
58*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d-REAR
60*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d
75	Module in slot %d - not operational but provisioned as in-service	INTERR	EQPT	IOM-%d
850	Restore performed - INIT-SYS required for correct operation	PRCDRERR	COM	SP-%c

Table B. Major Module Alarms

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
58*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d-REAR
60*	Slot %d rear module has been removed	REPLUNITMISS	EQPT	IOM-%d

Table C. Minor Module Alarms

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
79	Module in Slot %d present but not provisioned	PRCDRERR	EQPT	IOM-%d
839	Module in slot %d is unprotected	PROTNA	EQPT	IOM-%d

TABLE A (continued)

ID	INFORMATION for Critical Alarms	GO TO
58	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to Step 11.
60	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to Step 11.
75	Indicates a module that was provisioned but is autonomously out of service. IOM may be faulted or missing	Go to Step 25.
850	In process of upgrading software.	Go to Step 41.

TABLE B (continued)

ID	INFORMATION for Major Alarms	GO TO
58	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to Step 11.
60	The rear module in a slot has been removed from the chassis or is not detected to be present. Maintenance procedure or faulted IOM.	Go to Step 11.

TABLE C (continued)

ID	INFORMATION for Minor Alarms	GO TO
79	Indicates a module is plugged in, but does not have any provisioning to indicate CLEI, software revision, redundancy role, etc. Refer to ENT-EQPT. Module may be in incorrect slot or has not been provisioned.	Go to Step 25.
839	Module in slot %d is unprotected. Protection module is faulted or removed or provisioning error.	Go to Step 32.

11. Has the rear module been removed?
If **YES**, someone is performing a maintenance procedure. Go to [Step 45](#).
If **NO**, then continue to the next step.
12. Check part number located next to top ejector handle. Is it the correct module type and part number to correspond with the front module?
If **YES**, then continue to the next step.
If **NO**, then go to [Step 28](#).
13. Loosen top and bottom screw and using ejector handles disconnect the rear module from the midplane and reconnect.
14. Disconnect the front module from the midplane and reconnect.
15. Wait for the front module to reboot and initialize. This can take several minutes.
16. Verify that the alarm has cleared.
If using **EMS**, check alarms. Refer to [Step 5](#).
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).
17. Has the alarm cleared?
If **YES**, then go to [Step 45](#).
If **NO**, then continue to the next step.



Caution: *The following steps will disrupt traffic on ALL ports of the IOM.*

18. Replace the faulted rear IOM.
Reference: **DLP-515**
19. Verify that the alarm has cleared.
If using **EMS**, check alarms. Refer to [Step 5](#).
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).
20. Has the alarm cleared?
If **YES**, then go to [Step 45](#).
If **NO**, then continue to the next step.

21. Switch the module to protection

If using **TL1**, use the SW-TOPROTN-EQPT command.

Command Syntax: SW-TOPROTN-EQPT::IOM-{1...17};

Command Example: SW-TOPROTN-EQPT::IOM-3;

If using **EMS**, right-click the IOM and then select *Switch To Protection*.

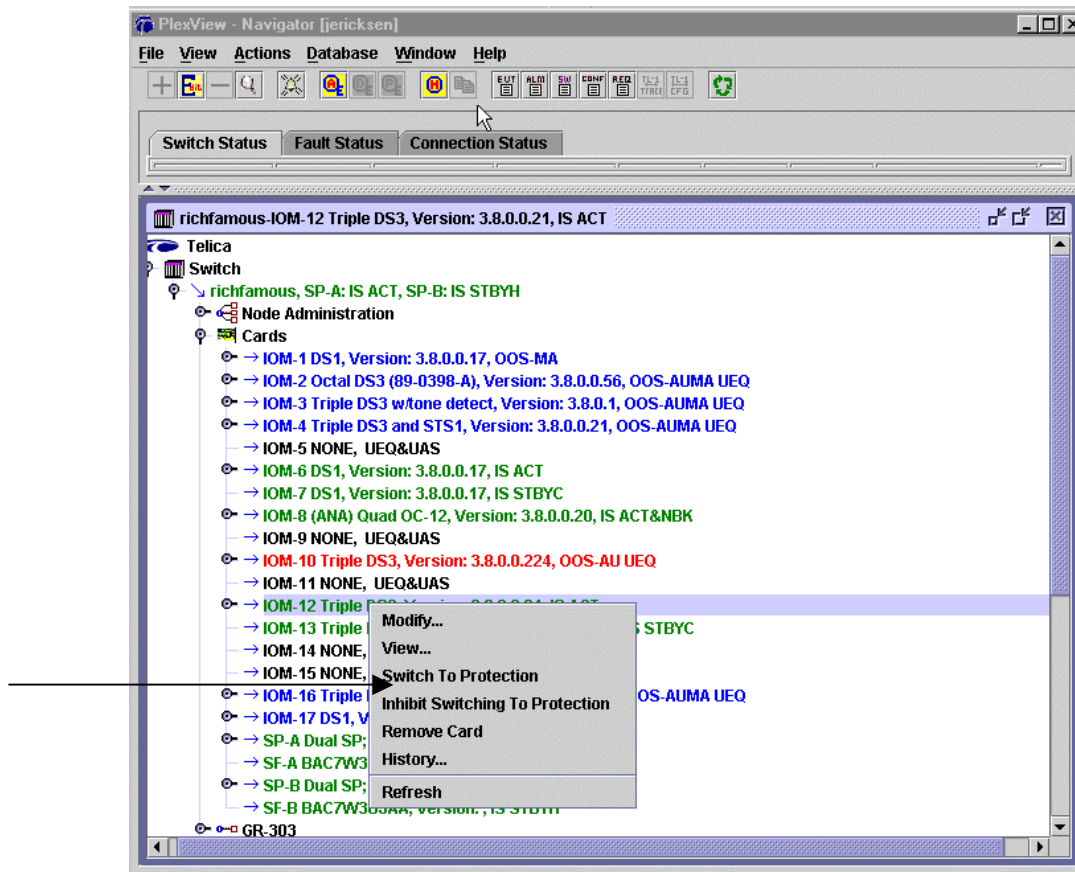


Figure 2, Switch to Protection

22. Replace the front IOM.

Reference: **DLP-515**

23. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

24. Has the alarm cleared?
If **YES**, then go to [Step 45](#).
If **NO**, then go to [Step 44](#).
25. Is a module installed in the indicated slot?
If **YES**, then go to [Step 27](#).
If **NO**, then continue to the next step.
26. Install the correct module and then to [Step 29](#).
Reference: **DLP-515**
27. Check part number located next to top ejector handle and office records for modules installed to ensure correct module is installed. Is the installed module the correct part number?
If **YES**, then go to [Step 31](#).
If **NO**, then continue to the next step.
28. Remove the module and replace with the correct module.
Reference: **DLP-515**
29. Verify that the alarm has cleared.
If using **EMS**, check alarms. Refer to [Step 5](#).
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).
30. Has the alarm cleared?
If **YES**, then go to [Step 45](#).
If **NO**, then go to [Step 44](#).
31. This alarm indicates the status that the module has not been provisioned which may be a normal condition at this time. If the module requires provisioning refer to the appropriate provisioning procedures in the *Installation and Operation Manual*.



YOU HAVE COMPLETED THIS PROCEDURE.

32. Is there a protection module?
If **YES**, then continue to the next step.
If **NO**, then install a protection module and go to [Step 35](#).
33. Remove and replace the protection module.
Reference: **DLP-515**

34. Wait until the module has initialized.

35. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

36. Has the alarm cleared?

If **YES**, then go to [Step 45](#).

If **NO**, then go to [Step 44](#).

37. Check provisioning of thresholds.

If using **TL1**, check using the RTRV-EQPT command.

Command Example: RTRV-EQPT;

If using **EMS**, right-click the IOM and select *View*.

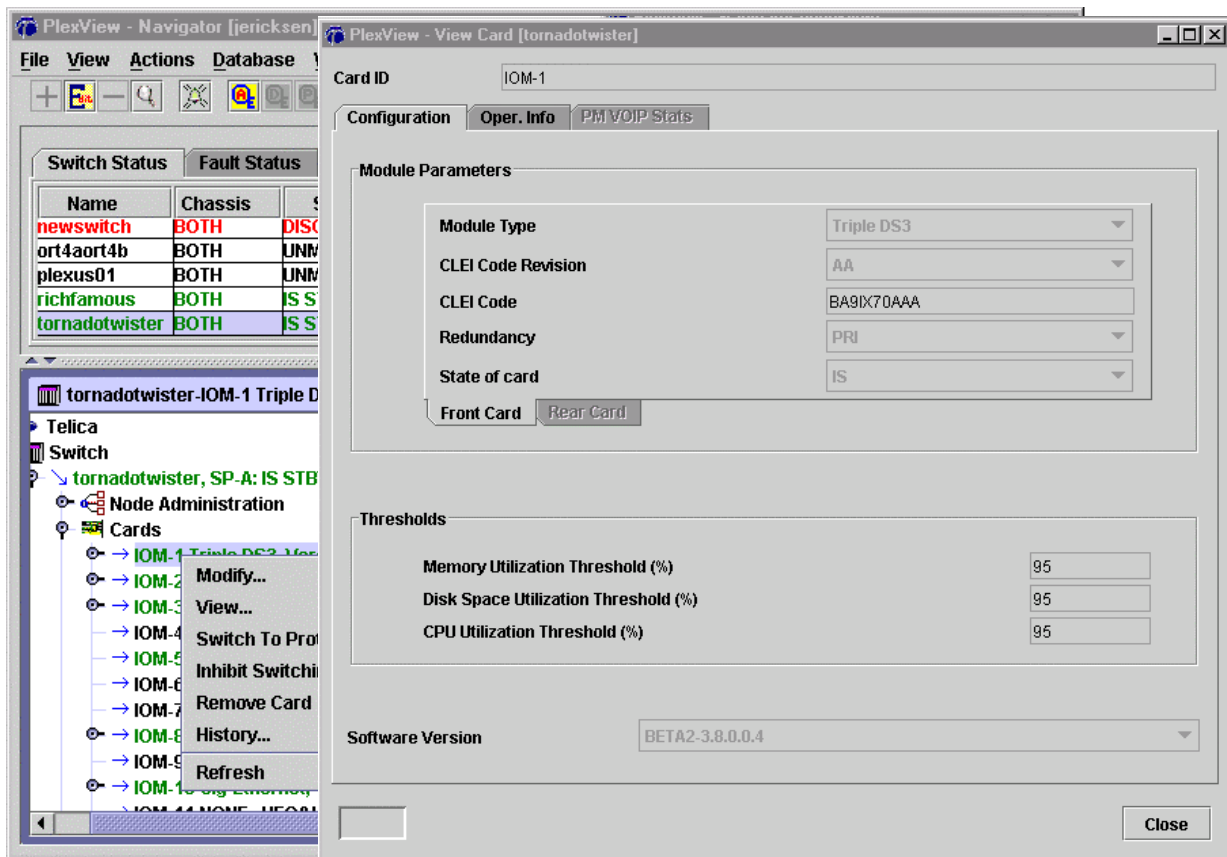


Figure 3. Retrieve IOM Configuration

38. Are the thresholds high enough?
- If **YES**, then go to [Step 44](#).
If **NO** and using **TL1**, then increase thresholds using the ED-EQPT command.
If **NO** and using **EMS**, right-click the IOM and select *Modify*. Make changes and then select *Apply*.
39. Verify that the alarm has cleared.
- If using **EMS**, check alarms. Refer to [Step 5](#).
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).
40. Has the alarm cleared?
- If **YES**, then go to [Step 45](#).
If **NO**, then go to [Step 44](#).
41. IOM is rebooting and initializing. This can take several minutes.
42. Wait several minutes and then retrieve information about the IOM.
- If using **TL1**, check using the RTRV-EQPT command.
Command Example: RTRV-EQPT;
If using **EMS**, right-click the IOM and select *View*. See [Figure 3](#).
43. Has the IOM completed initialization?
- If **YES**, then go to [Step 45](#).
If **NO**, then continue to the next step.
44. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.
45.  **YOU HAVE COMPLETED THIS PROCEDURE.**

TAP-103 - CLEAR SYSTEM PROCESSOR OR SWITCH FABRIC ALARMS

SUMMARY: This procedure provides steps to troubleshoot and clear alarms associated with the System Processor (SP) module. This procedure assumes that the module had been operating error-free previously.



DANGER: *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



Caution: *Take precautions to prevent service disruptions when performing this procedure by carefully following steps.*



Note: This procedure assumes you are already logged into the Element Management System (EMS) or the TL1 interface (craft port or Telnet session).

Illustrations of EMS screens show screens to be selected and are not related to a particular alarm and may differ depending upon software version of the switch.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Do you know the alarm or are you sure you are in the correct procedure?

If **YES**, then continue to the next step.
If **NO**, then go to the **TAP-IXL** to determine alarm and TAP or IXL step to which to go.
3. Are you using the Element Management System (EMS) or a TL1 interface?

If **EMS**, then continue to the next step
If **TL1**, then go to [Step 8](#).



Note: In the following steps, you will use EMS to retrieve alarms or log information.

4. Ensure you have selected the switch for which you will be troubleshooting alarms.
5. In the toolbar, select *Actions*, then *View* and then *Alarms*.

The screenshot shows the PlexView - Navigator application window. The 'Actions' menu is open, showing options like 'Add...', 'Modify...', 'Delete', 'View...', 'Status...', 'Order Entry...', 'Deactivate Active Order', 'Pending...', 'History...', 'Clone...', 'Logs', 'Switch', 'Card', and 'Port'. The 'View...' option is selected. Below the menu, a table shows the status of various components. The 'View Switch' dialog is also open, showing a list of alarms sorted by notification type (CRITICAL, MAJOR, MINOR).

Section	SP-B	Critical	Major	Minor	EM Status
CTED	DISCONNECTED	0	0	0	UNKNOWN
ED	UNMANAGED	16	54	1	SYNC REQUIRED
ED	UNMANAGED	16	2	4	SYNCHRONIZED
	IS ACT	2	5	7	SYNCHRONIZED
	IS ACT	1	0	10	SYNC REQUIRED

Alarm ID	Entity Type	Notification...	Condition Ty...	Service Effect	Date	Time	Description
Chassis	EQUIPMENTUNIT	CRITICAL	PRCDRERR	SERVICEAFFEC...	06-09	11-14-11	2- No BITS Inputs are provisioned In Service
IOM-13-REAR	EQUIPMENTUNIT	CRITICAL	PRCDRERR	SERVICEAFFEC...	06-09	11-14-22	9- IOM-13 rear module does not match front mo...
SP-B	PACKETLINK	MAJOR	CSC	SERVICEAFFEC...	06-09	11-12-15	1- SP-B 100baseT loss of carrier on signaling l...
303IF-1	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-09	14-46-02	12- GR303 TMC channel down - IfGrpNum-1
303IF-1	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-09	14-46-02	13- GR303 EOC channel down - IfGrpNum-1
303IF-99	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-10	12-50-28	14- GR303 TMC channel down - IfGrpNum-99
303IF-99	ISDNL2	MAJOR	LAPDIRR	SERVICEAFFEC...	06-10	12-50-28	15- GR303 EOC channel down - IfGrpNum-99
TMG-B	EQUIPMENTUNIT	MINOR	FRNGSYNC	NONSERVICEA...	06-09	11-14-12	3- TMG-B - Clock in FreeRun
IOM-7	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-56	5- Module in Slot 7 present but not provisioned
IOM-6	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-57	6- Module in Slot 6 present but not provisioned
IOM-1	EQUIPMENTUNIT	MINOR	PRCDRERR	NONSERVICEA...	06-09	11-14-57	7- Module in Slot 1 present but not provisioned
TMG-A	EQUIPMENTUNIT	MINOR	FRNGSYNC	NONSERVICEA...	06-09	11-15-27	10- TMG-A - Clock in FreeRun
IOM-12	EQUIPMENTUNIT	MINOR	PROTNA	NONSERVICEA...	06-09	11-14-11	8- Module in slot 12 is unprotected
ISDNIF-1200...	ISDNL2	MINOR	LAPDIRR	NONSERVICEA...	06-10	13-18-17	11- LAPD - Link down - IntfId 12001 linkId 1200...

Figure 1. Viewing Alarms

6. Click the Notification column to sort the alarms from CRITICAL to MINOR. You will troubleshoot CRITICAL alarms first.
7. Locate the alarm and then go to [Step 10](#).

8. If using craft port connection or a Telnet session, then enter the RTRV-ALM-<ReptAid> command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: RTRV-ALM-ALL;

Command Example: RTRV-ALM-T3;

9. Determine alarms that apply to SPs or SFs for troubleshooting using this procedure.

Note: Alarms are listed in numerical order of the alarm ID used in TL1. The “AID” column in the table relates to the EMS column, “Alarm ID.” If the version of software running on the SP does not output the alarm ID, you will have to search the “REPT string” to find the alarm.



If you cannot find the alarm, return to the **TAP-IXL** to find the alarm. You may be in the wrong procedure.

Clear critical alarms first, then major and finally minor alarms.

10. Locate the alarms in the appropriate table, and then go to the designated step and perform the steps to clear the alarm. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table A. Critical SP or SF Alarms](#).

If the alarm is a **MAJOR** alarm, then go to [Table B. Major SP or SF Alarms](#).

If the alarm is a **MINOR** alarm, then go to [Table C. Minor SP or SF Alarms](#).

Table A. Critical SP or SF Alarms

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
702	Failed to Initialize H.248 - No Signaling IP provisioned	PRCDERR	COM	COM
1181	Signaling Access Interface not up	PRCDRERR	COM	COM

Table B. Major SP or SF Alarms

ID	REPT string for Major Alarms	CONDTYPE	TYPE	AID
9	SP-%c 10/100baseT loss of carrier on SP to SP interface	CONTCOM	PLK	SP-%c
12	SP-%c 10/100baseT loss of carrier on signaling interface	CSC	PLK	SP-%c
15	SP-%c 10/100baseT loss of carrier on management interface	OSLINK	PLK	SP-%c
62	SF-%c removed	REPLUNITMISS	EQPT	SF-%c
64	SP-%c removed	REPLUNITMISS	EQPT	SP-%c
67	SF-%c rear module removed	REPLUNITMISS	EQPT	SF-%c-REAR
69	SP-%c rear removed	REPLUNITMISS	EQPT	SP-%c
845	SP-%c software version mismatch - prov %s running %s	PRCDRERR	EQPT	SP-%c
958	SP-%c lost heartbeat with %s-%d-SP-%c	GP	COM	MGC-%d-SP-%c or SG-%d-SP-%c
960	SP-%c failover due to IP connectivity fault - SP-%c has %d conns - SP-%c has %d	GP	COM	MGC-%d-SP-%c or SG-%d-SP-%c
1072	SP-%c lost local heartbeat on %s interface	CONTCOM		SP-%
1081	SP-%c Terminated	MAN		SP-%
1177	SP-%c 100baseT loss of carrier on signaling access interface	CSC	COM	SP-%c

TABLE A (continued)

ID	INFORMATION for Critical Alarms	GO TO
702	Indicates the signaling IP address was not configured using ED-CHASSIS-EQPT.	Go to Step 74.
1181	Cannot access IP addresses of signaling equipment	Go to Step 11.

TABLE B (continued)

ID	INFORMATION for Major Alarms	GO TO
9	There is no valid Ethernet signal detected on the replication Ethernet of the designated SP. Faulted rear SP.	Go to Step 23.
12	There is no valid Ethernet signal detected on the signaling Ethernet of the designated SP. Disconnected cable, Ethernet hub/switch has failed or lost power or faulted ENET chip on rear SP.	Go to Step 23.
15	There is no valid Ethernet signal detected on the management Ethernet of the designated SP. Disconnected cable, Ethernet hub/switch has failed or lost power or faulted ENET chip on rear SP	Go to Step 24.
62	The SF front module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to Step 34.
64	The SP front module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to Step 53.
67	The SF rear module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to Step 43.
69	The SP rear module has been removed from the chassis or is not detected to be present. Maintenance or faulted SF.	Go to Step 61.
845	Upgraded or replaced SP. Usually seen during upgrade procedure	Go to Step 76.
958	Indicates a software process on the SP is not responding. Software fault on the indicated SP or hardware fault on the front SP module.	Go to Step 82
960	This happens when one SP can communicate to more SPs than the other SP in the same chassis. Verify IP connectivity on OS or check IP cabling.	Go to Step 24.
1072		Go to Step 78.
1081		Go to Step 53.
1177	SP-%c 100baseT loss of carrier on signaling access interface	Go to Step 23.

Table C. Minor SP or SF Alarms

ID	REPT string for Minor Alarms	CONDTYPE	TYPE	AID
846	SP-%c software version %s not on disk	PRCDRERR	EQPT	SP-%c
849	Standby SP-%c version-%s is incompatible with Active SP-%c	PRCDRERR	EQPT	SP-%c
853	SP-%c security log is 90 percent full	SECBUFTHX	SECU	SP-%c
967	Chassis not synchronized with NTP Server %s or %s	EXT	COM	COM

11. Determine if the signaling IP addresses have been provisioned and are correct using the RTRV-CHASSIS-EQPT command.

Reference: **DLP-544**

Command Syntax: RTRV-CHASSIS-EQPT : [<TID>] : [<com>] :
[CTAG];

Command Example: RTRV-CHASSIS-EQPT;

Comment: If a response of “Specified Object Entity Does Not Exist”, it means that no IP addresses have been provisioned.

12. Are the IP addresses provisioned and correct?

If **YES**, then go to [Step 23](#).

If **NO**, then continue to the next step.

TABLE C (continued)

ID	INFORMATION for Minor Alarms	GO TO
846	SP-%c software version %s not on disk. Corrupted disk file system or Software or CPU subsystem error.	Go to Step 77 .
849	Standby SP-%c version-%s is incompatible with Active SP-%c. Upgrade was not completed.	Go to Step 76 .
853	SP-%c security log is 90 percent full. Log is close to full, clear log	Go to Step 73 .
967	Chassis not synchronized with NTP Server %s or %s. NTP server is down, its IP address has changed or the Plexus NTP IP address is misconfigured. Ping NTP server.	Go to Step 70 .

13. Change the IP addresses of the using the ED-CHASSIS-EQPT command.

Reference: **DLP-544**

Command Syntax: ED-CHASSIS-EQPT:[TID]:[<com>]:[CTAG]::
[SHELFID=<shelfId>],[CHASSISTYPE=
<chassisType>],[CLLI=<clli>],[LOC=<loc>],
[EMIPSPA=<emIPSPA>],[CRAFTIPSPA=
<craftIPSPA>],[SIGNALINGIPSPA=
<signalingIPSPA>],[EMIPSPB=<emIPSPB>],
[CRAFTIPSPB=<craftIPSPB>],
[SIGNALINGIPSPB=<signalingIPSPB>],
[EMIPMASK=<emIPMask>],[CRAFTIPMASK=
<craftIPMask>],[SIGNALINGIPMASK=
<signalingIPMask>],[SIGNALINGIPCHASSIS=
<signalingIPChassis>],[DNSIP1=<dnsIP1>],
[DNSIP2=<dnsIP2>],[NTPSERVIP1=
<ntp servIP1>],[NTPSERVIP2=<ntp servIP2>],
[DNSNAME=<dnsName>];

Command Example: ED-CHASSIS-EQPT:::::
SIGNALINGIPSPA=10.6.25.26,
SIGNALINGIPSPB=10.6.25.27,
SIGNALINGIPMASK=255.255.0.0,
SIGNALINGIPCHASSIS=10.6.25.28;

14. Remove the **Standby SP** to reboot it using the RMV-EQPT command.

Command Syntax: RMV-EQPT::SP-B;

15. Restore the **Standby SP** using the RST-EQPT command.

Command Syntax: RST-EQPT::SP-B;

16. Ensure that the **protection** System Processor has a state of IS and STBYH and that the new version is shown by using the RTRV-EQPT command **before continuing** to the next step.

Command Example: **RTRV-EQPT;**

17. Fail over by switching the working SP **to the protection** SP using the SW-TOPROTN-EQPT command. Switching will terminate Telnet session.

Command Syntax: SW-TOPROTN-EQPT:[TID]:sp-{a|b}:[CTAG];

Command Example: **SW-TOPROTN-EQPT::SP-A;**

18. Log back into the Plexus using a Telnet session, typing **2361** for Port and **VT100** for TermType if required, to the IP address of the other (now active or **working**) System Processor. If you changed the Craft IP address, you will log into that IP address.
19. Ensure that the **protection** System Processor has a state of IS and STBYH and that the new version is shown by using the RTRV-EQPT command **before continuing** to the next step.

Command Example: **RTRV-EQPT;**

20. Ensure that the signaling IP addresses are correct using the RTRV-CHASSIS-EQPT command.

Reference: **DLP-544**

Command Syntax: RTRV-CHASSIS-EQPT:[<TID>]:[<com>]:
[CTAG];

Command Example: RTRV-CHASSIS-EQPT;

If the addresses are **correct**, then continue to the next step.

If the addresses are **incorrect**, then go to [Step 13](#).

21. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).

22. Has the alarm cleared?

If **YES**, then go to [Step 87](#).

If **NO**, then continue to the next step.

23. Should the Plexus be connected to a signaling gateway?
- If **YES**, then continue to the next step.
If **NO**, ensure Ethernet loopback plugs are inserted in the signaling ENET jacks on the rear SPs and then go to [Step 84](#).
24. Has the Ethernet cable been disconnected from the Plexus or the hub or router?
- If **YES**, then reconnect the cable and go to [Step 28](#)
If **NO**, then continue to the next step.
25. Can you ping the router?
- If **YES**, then go to [Step 27](#).
If **NO**, then troubleshoot the network problem (router, cable, etc.)
26.  **YOU HAVE COMPLETED THIS PROCEDURE.**
27. Can you ping the signaling gateway?
- If **YES**, then continue to the next step.
If **NO**, then troubleshoot the network problem
28. Verify that the alarm has cleared.
- If using **EMS**, check alarms. Refer to [Step 5](#).
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.
Refer to [Step 8](#).
29. Has the alarm cleared?
- If **YES**, then go to [Step 87](#).
If **NO**, then continue to the next step.
30. Remove and replace the indicated rear SP with a replacement SP.
- Reference: **DLP-512**
31. **Wait** for the System Processors to synchronize with each other. This is indicated with an autonomous message.
- Output Example:**
- ```
alpha1telica 2001-06-27 13:28:36
A 11 REPT EVT EQPT
"SP-A:INIT-51,TC,06-27,13-28-35,,,,,:\"Protection
SP-B is synchronized and ready to provide service\""
```

32. Verify that the alarm has cleared.
- If using **EMS**, check alarms. Refer to [Step 5](#).
- If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).
33. Has the alarm cleared?
- If **YES**, then go to [Step 87](#).  
If **NO**, then go to [Step 86](#).
34. Is maintenance being performed and has the front Switch Fabric (SF) module been removed?
- If **YES**, then go to [Step 87](#).  
If **NO**, then continue to the next step.
35. Loosen top and bottom screws and using ejector handles disconnect the module from the midplane and reconnect.
36. Loosen top and bottom screws and using ejector handles disconnect the front **SP** module from the midplane and reconnect.
37. Wait for the module to reboot, initialize and synchronize. This can take several minutes.
38. Verify that the alarm has cleared.
- If using **EMS**, check alarms. Refer to [Step 5](#).
- If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).
39. Has the alarm cleared?
- If **YES**, then go to [Step 87](#).  
If **NO**, then continue to the next step.
40. Replace the indicated SF module.
- Reference: **DLP-513**
41. Verify that the alarm has cleared.
- If using **EMS**, check alarms. Refer to [Step 5](#).
- If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).
42. Has the alarm cleared?
- If **YES**, then go to [Step 87](#).  
If **NO**, then go to [Step 86](#).

43. Is maintenance being performed and has the rear Switch Fabric (SF) module been removed?  
  
    If **YES**, then go to [Step 87](#).  
    If **NO**, then continue to the next step.
44. Loosen top and bottom screws and using ejector handles disconnect the module from the midplane and reconnect.
45. Loosen top and bottom screws and using ejector handles disconnect the front module from the midplane and reconnect.
46. Loosen top and bottom screws and using ejector handles disconnect the front **SP** module from the midplane and reconnect.
47. Wait for the module to reboot, initialize and synchronize. This can take several minutes.
48. Verify that the alarm has cleared.  
  
    If using **EMS**, check alarms. Refer to [Step 5](#).  
  
    If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
    Refer to [Step 8](#).
49. Has the alarm cleared?  
  
    If **YES**, then go to [Step 87](#).  
    If **NO**, then continue to the next step.
50. Replace the indicated rear SF module.  
  
    Reference:   **DLP-513**
51. Verify that the alarm has cleared.  
  
    If using **EMS**, check alarms. Refer to [Step 5](#).  
  
    If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
    Refer to [Step 8](#).
52. Has the alarm cleared?  
  
    If **YES**, then go to [Step 87](#).  
    If **NO**, then go to [Step 86](#).
53. Is maintenance being performed and has the front System Processor (SP) module been removed?  
  
    If **YES**, then go to [Step 87](#).  
    If **NO**, then continue to the next step.

54. Loosen top and bottom screws and using ejector handles disconnect the SP module from the midplane and reconnect.
55. Wait for the module to reboot, initialize and synchronize. This can take several minutes.
56. Verify that the alarm has cleared.
  - If using **EMS**, check alarms. Refer to [Step 5](#).
  - If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).
57. Has the alarm cleared?
  - If **YES**, then go to [Step 87](#).
  - If **NO**, then continue to the next step.
58. Replace the indicated SP module.
  - Reference: **DLP-512**
59. Verify that the alarm has cleared.
  - If using **EMS**, check alarms. Refer to [Step 5](#).
  - If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).
60. Has the alarm cleared?
  - If **YES**, then go to [Step 87](#).
  - If **NO**, then go to [Step 86](#).
61. Is maintenance being performed and has the rear System Processor (SP) module been removed?
  - If **YES**, then go to [Step 87](#).
  - If **NO**, then continue to the next step.
62. Loosen top and bottom screws and using ejector handles disconnect the module from the midplane and reconnect.
63. Loosen top and bottom screws and using ejector handles disconnect the front module from the midplane and reconnect.
64. Wait for the module to reboot, initialize and synchronize. This can take several minutes.
65. Verify that the alarm has cleared.
  - If using **EMS**, check alarms. Refer to [Step 5](#).
  - If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

66. Has the alarm cleared?

If **YES**, then go to [Step 87](#).

If **NO**, then continue to the next step.

67. Replace the indicated rear SP module.

Reference: **DLP-512**

68. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

69. Has the alarm cleared?

If **YES**, then go to [Step 87](#).

If **NO**, then go to [Step 86](#).

70. Determine if the Network Time Protocol (NTP) server is down or if its IP address has changed.

If the **NTP server is down**, then go to [Step 87](#).

If **IP addresses** have changed, then continue to the next step.

71. If you do not have a Telnet session open one to the Plexus by Telnetting to the IP address of the active or working System Processor, entering **2361** for Port and **VT100** for TermType if required. Then log in with the ACT-USER command.

Reference: **DLP-504**

72. Provision the NTP IP addresses using the ED-CHASSIS-EQPT command and then go to [Step 84](#).

Reference: **DLP-544**

73. The security log is close to full, clear the log.

If using **TL1**, clear the log using the SET-ATTR-LOG command and then go to [Step 84](#).

Reference: **DLP-555**

If using **EMS**, right-click the switch, select *Set Log Attributes*. Then select *SEC* for *Log Name*, *CLR* for *Clear Log* and then click *Apply*. Screens are shown in [Figure 2](#).

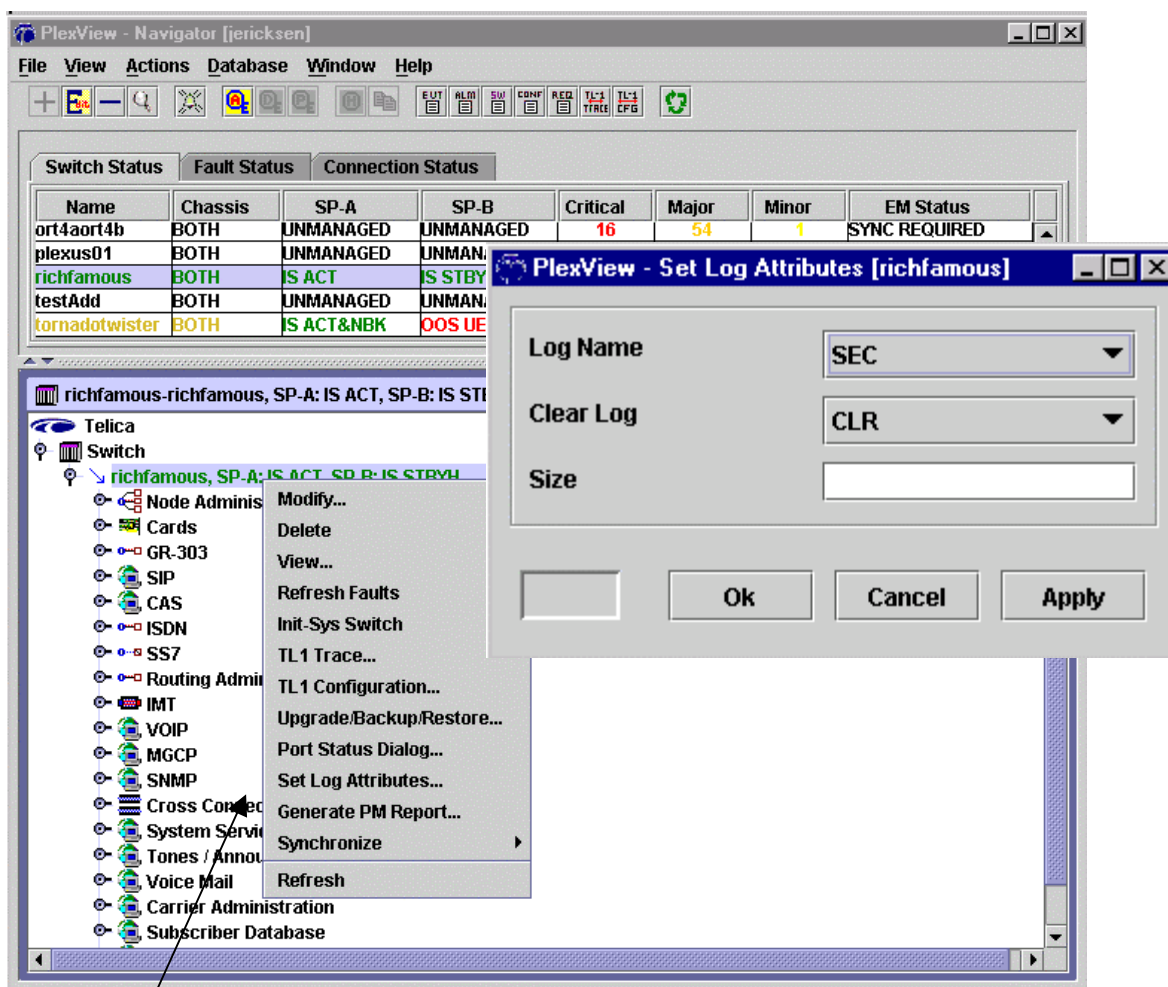


Figure 2. Log Attributes

74. You must change IP addresses using TL1. If you do not have a Telnet session open one to the Plexus by Telneting to the IP address of the active or working System Processor, entering **2361** for Port and **VT100** for TermType if required. Then log in with the ACT - USER command.

Reference: **DLP-504**

75. Provision the IP addresses and then go to [Step 84](#).

Reference: **DLP-544**

76. Maintenance is being performed and the software is being upgraded. Complete upgrade and then go to [Step 87](#).
77. Contact Telica Technical Services at 888-440-8354 or 888-440-TELI to perform software upgrade and then go to [Step 87](#).

78. Switch the SP to protection.

If using **TL1**, use the SW- TOPROTN- EQPT command.

Command Syntax: SW- TOPROTN- EQPT : : SP- {A|B};

Command Example: SW- TOPROTN- EQPT : : SP- A;

If using **EMS**, right-click the SP and then select *Switch To Protection*. Screen is shown in Figure 3.

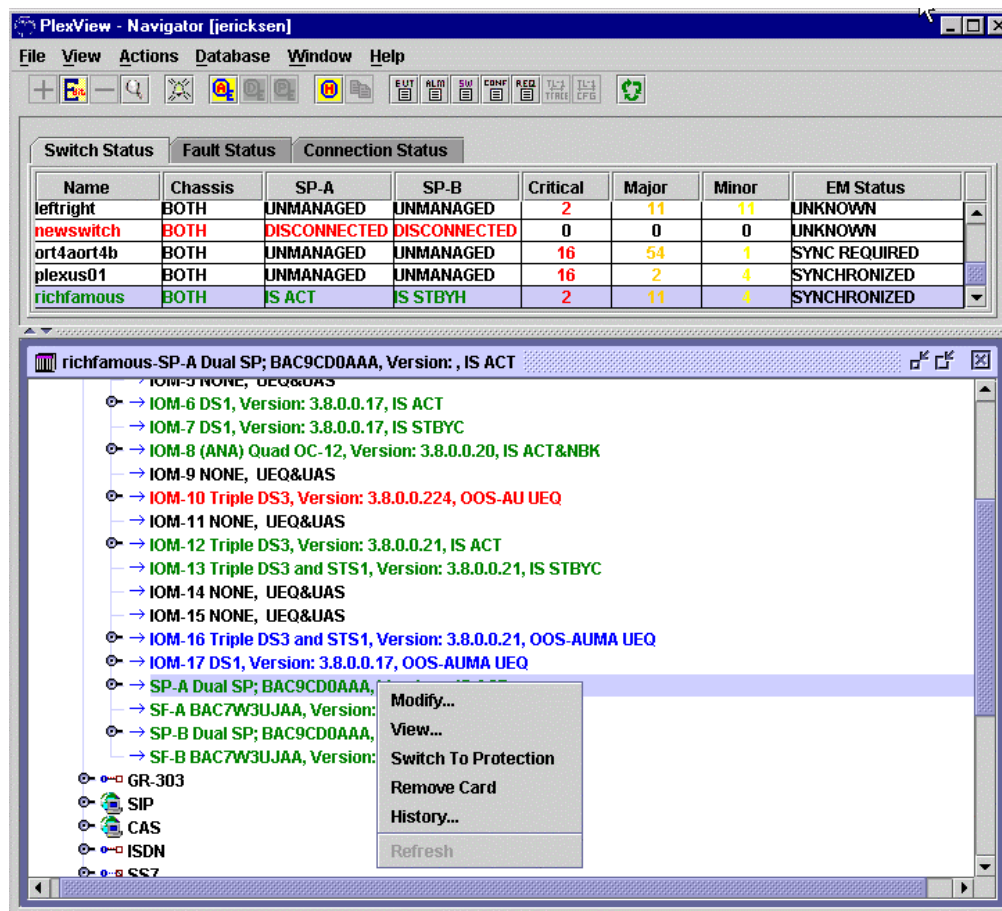


Figure 3. Right-clicking of SP

79. Wait for the System Processors to synchronize with each other. This is indicated with an autonomous message.

Output Example:

```
alpha1telica 2001-06-27 13:28:36
A 11 REPT EVT EQPT
 "SP-A:INIT-51,TC,06-27,13-28-35,,,,,:\"Protection
SP-B is synchronized and ready to provide service\""
```

**80.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

**81.** Has the alarm cleared?

If **YES**, then go to [Step 87](#).

If **NO**, then continue to the next step.

**82.** Remove the SP from service.

If using **TL1**, use the RMV-EQPT command to remove the SP from service.

Command Example: RMV-EQPT::SP-A;

If using **EMS**,

**83.** After a minute, restore the SP.

If using **TL1**, using the RST-EQPT command.

Command Example: RST-EQPT::SP-A;

If using **EMS**,

**84.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

**85.** Has the alarm cleared?

If **YES**, then go to [Step 87](#).

If **NO**, then continue to the next step.

**86.** Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

**87.**  **YOU HAVE COMPLETED THIS PROCEDURE.**



## TAP-104 - CLEAR TIMING OR BITS ALARMS

**SUMMARY:** This procedure provides steps to perform trouble analysis practices for determining the cause and correction of the problems. This procedure assumes that the BITS had been operating error-free previously.



**DANGER:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



**Caution:** *Take precautions to prevent service disruptions when performing this procedure by carefully following steps.*



**Note:** This procedure assumes you are already logged into the Element Management System (EMS) or the TL1 interface (craft port or Telnet session).

Illustrations of EMS screens show screens to be selected and are not related to a particular alarms and may differ depending upon software version of the switch.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Do you know the alarm or are you sure you are in the correct procedure??  
If **YES**, then continue to the next step.  
If **NO**, then go to the **TAP-IXL** to determine alarm and TAP or IXL step to which to go.
3. Are you using the Element Management System (EMS) or a TL1 interface?  
If **EMS**, then continue to the next step  
If **TL1**, then go to [Step 8](#).



**Note:** In the following steps, you will use EMS to retrieve alarms or log information.

4. Ensure you have selected the switch for which you will be troubleshooting alarms.
5. In the toolbar, select *Actions*, then *View* and then *Alarms*.

The screenshot shows the PlexView - Navigator application. The 'Actions' menu is open, showing options like 'Add...', 'Modify...', 'Delete', 'View...', 'Status...', 'Order Entry...', 'Deactivate Active Order', 'Pending...', 'History...', 'Clone...', 'Logs', 'Switch', 'Card', and 'Port'. The 'View Switch [richfamous]' window is also open, showing a list of alarms. The 'Alarms' tab is selected, displaying a table with columns: Alarm ID, Entity Type, Notification, Condition Ty..., Service Effect, Date, Time, and Description. The table lists various alarms, including 'Chassis', 'IOM-13-REAR', 'SP-B', '303IF-1', '303IF-99', 'TMG-B', 'IOM-7', 'IOM-6', 'IOM-1', 'TMG-A', 'IOM-12', and 'ISDNIF-1200...'. The 'Notification' column is sorted by severity, with 'CRITICAL' alarms at the top.

| Alarm ID       | Entity Type   | Notification | Condition Ty... | Service Effect  | Date  | Time     | Description                                        |
|----------------|---------------|--------------|-----------------|-----------------|-------|----------|----------------------------------------------------|
| Chassis        | EQUIPMENTUNIT | CRITICAL     | PRCDRERR        | SERVICEAFFEC... | 06-09 | 11-14-11 | 2- No BITS Inputs are provisioned In Service       |
| IOM-13-REAR    | EQUIPMENTUNIT | CRITICAL     | PRCDRERR        | SERVICEAFFEC... | 06-09 | 11-14-22 | 9- IOM-13 rear module does not match front mo...   |
| SP-B           | PACKETLINK    | MAJOR        | CSC             | SERVICEAFFEC... | 06-09 | 11-12-15 | 1- SP-B 100baseT loss of carrier on signaling l... |
| 303IF-1        | ISDN2         | MAJOR        | LAPDIRR         | SERVICEAFFEC... | 06-09 | 14-46-02 | 12- GR303 TMC channel down - IfGrpNum-1            |
| 303IF-1        | ISDN2         | MAJOR        | LAPDIRR         | SERVICEAFFEC... | 06-09 | 14-46-02 | 13- GR303 EOC channel down - IfGrpNum-1            |
| 303IF-99       | ISDN2         | MAJOR        | LAPDIRR         | SERVICEAFFEC... | 06-10 | 12-50-28 | 14- GR303 TMC channel down - IfGrpNum-99           |
| 303IF-99       | ISDN2         | MAJOR        | LAPDIRR         | SERVICEAFFEC... | 06-10 | 12-50-28 | 15- GR303 EOC channel down - IfGrpNum-99           |
| TMG-B          | EQUIPMENTUNIT | MINOR        | FRNGSYNC        | NONSERVICEA...  | 06-09 | 11-14-12 | 3- TMG-B - Clock in FreeRun                        |
| IOM-7          | EQUIPMENTUNIT | MINOR        | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-56 | 5- Module in Slot 7 present but not provisioned    |
| IOM-6          | EQUIPMENTUNIT | MINOR        | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-57 | 6- Module in Slot 6 present but not provisioned    |
| IOM-1          | EQUIPMENTUNIT | MINOR        | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-57 | 7- Module in Slot 1 present but not provisioned    |
| TMG-A          | EQUIPMENTUNIT | MINOR        | FRNGSYNC        | NONSERVICEA...  | 06-09 | 11-15-27 | 10- TMG-A - Clock in FreeRun                       |
| IOM-12         | EQUIPMENTUNIT | MINOR        | PROTNA          | NONSERVICEA...  | 06-09 | 11-44-11 | 8- Module in slot 12 is unprotected                |
| ISDNIF-1200... | ISDN2         | MINOR        | LAPDIRR         | NONSERVICEA...  | 06-10 | 13-18-17 | 11- LAPD - Link down - Intfcd 12001 linkId 1200... |

Figure 1. Viewing Alarms

6. Click the Notification column to sort the alarms from CRITICAL to MINOR. You will troubleshoot CRITICAL alarms first.
7. Locate the IOM alarm and then go to [Step 10](#).

8. If using craft port connection or a Telnet session, then enter the RTRV-ALM-<ReptAid> command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: RTRV-ALM-ALL ;

Command Example: RTRV-ALM-T3 ;

9. Determine alarms that apply to timing for troubleshooting using this procedure.

**Note:** Alarms are listed in numerical order of the alarm ID used in TL1. The “AID” column in the table relates to the EMS column, “Alarm ID.” If the version of software running on the SP does not output the alarm ID, you will have to search the “REPT string” to find the alarm.



If you cannot find the alarm, return to the TAP-IXL to find the alarm. You may be in the wrong procedure.

Clear critical alarms first, then major and finally minor alarms.

10. Locate the alarms in the appropriate table, and then go to the designated step and perform the steps to clear the alarm. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (\*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table A. Critical Timing Alarms](#).

If the alarm is a **MINOR** alarm, then go to [Table B. Minor Timing Alarms](#).

**Table A. Critical Timing Alarms**

| <b>ID</b> | <b>REPT String for Critical Alarms</b>    | <b>CONDTYPE</b> | <b>TYPE</b> | <b>AID</b> |
|-----------|-------------------------------------------|-----------------|-------------|------------|
| 300       | All BITS Inputs have failed               | SYNCOOS         | T1          | TMG-5%c    |
| 302       | No BITS Inputs are provisioned In-Service | PRCDRERR        | EQPT        | CHASSIS    |

**Table B. Minor Timing Alarms**

|      | <b>REPT string for Minor Alarms</b>               | <b>CONDTYPE</b> | <b>TYPE</b> | <b>AID</b> |
|------|---------------------------------------------------|-----------------|-------------|------------|
| 289  | TMG-%c - Loss of Signal to BITS Input %c          | LOS             | T1          | TMG-%c     |
| 291  | TMG-%c - Loss of Frame to BITS Input %c           | LOF             | T1          | TMG-%c     |
| 293  | TMG-%c - Alarm Indication Signal on BITS Input %c | AIS             | T1          | TMG-%c     |
| 1060 | TMG-%c - Loss of Signal to BITS Input %c          | LOS             | E1          | TMG-%      |
| 1062 | TMG-%c - Loss of Frame to BITS Input %c           | LOS             | E1          | TMG-%      |
| 1064 | TMG-%c – Alarm Indication Signal on BITS Input %c | AIS             | E1          | TMG-%      |

11. An AIS (Alarm Indication Signal) is being received from the far-end BITS equipment or the T1 or E1 used for recovered line timing. Notify personnel at the far-end equipment.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Will the Plexus be using an NTP server, a BITS clock source or recovered line clock for timing?

If **NTP**, then continue to the next step.

If **BITS or recovered line clock**, then go to [Step 16](#).

14. You must change IP addresses using TL1. If you do not have a Telnet session open one to the Plexus by Telneting to the IP address of the active or working System Processor, entering **2361** for Port and **VT100** for TermType if required. Then log in with the **ACT-USER** command.

Reference: **DLP-504**

TABLE A (continued)

| ID  | INFORMATION for Critical Alarms                                                                                                                                                         | GO TO                          |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 300 | Indicates both timing inputs are Out-Of-Service, for example LOS, LOF. This could either be on the 2 T1 BITS inputs on the back the chassis or IOM inputs if line timing is being used. | Go to <a href="#">Step 27.</a> |
| 302 | Indicates the operators have not provisioned a timing source for the chassis.                                                                                                           | Go to <a href="#">Step 13.</a> |

TABLE B (continued)

| ID   | INFORMATION for Minor Alarms                                                                                                                     | GO TO                          |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 289  | Indicates the T1 input (A or B) on the Timing Module cannot detect a signal. Cabling or faulted SP TMG                                           | Go to <a href="#">Step 29.</a> |
| 291  | Indicates the T1 input (A or B) on the Timing Module cannot detect frame. Incorrect T1 framing format provisioned or invalid T1 input to Timing. | Go to <a href="#">Step 29.</a> |
| 293  | Indicates an AIS is being detected on the T1 input (A or B) to the Timing Module. Cabling                                                        | Go to <a href="#">Step 11.</a> |
| 1060 | Indicates the E1 input (A or B) on the Timing Module cannot detect a signal. Cabling or faulted SP TMG                                           | Go to <a href="#">Step 29.</a> |
| 1062 | Indicates the E1 input (A or B) on the Timing Module cannot detect frame. Incorrect E1 framing format provisioned or invalid E1 input to Timing. | Go to <a href="#">Step 29.</a> |
| 1064 | Indicates an AIS is being detected on the E1 input (A or B) to the Timing Module. Cabling                                                        | Go to <a href="#">Step 11.</a> |

15. Provision the NTP IP addresses using the ED-CHASSIS-EQPT command and then go to [Step 46.](#)

Reference: **DLP-544**

16. Verify source and state of timing reference.

If using **TL1**, use the RTRV-TMGREF command.

Command Example: RTRV-TMGREF ;

If using **EMS**, double-click *System Service* sand double-click *Timing Reference*.  
Refer to [Figure 2.](#)

17. Is it in service (IS) and is source correct?

If **YES**, then go to [Step 21.](#)

If **NO**, then continue to the next step.

18. Select the primary timing reference

If using **TL1**, using the ED-TMGREF command.

Command Syntax: ED-TMGREF:[TID]:[<src>]:[CTAG]::  
<primarySrcType>;

Command Example: ED-TMGREF:::::IOM-8;

Reference: **DLP-522**

If using **EMS**, double-click *System Services*, right-click *Timing Reference* and select *Modify*. Make the selection and click *Ok*. See [Figure 2](#).

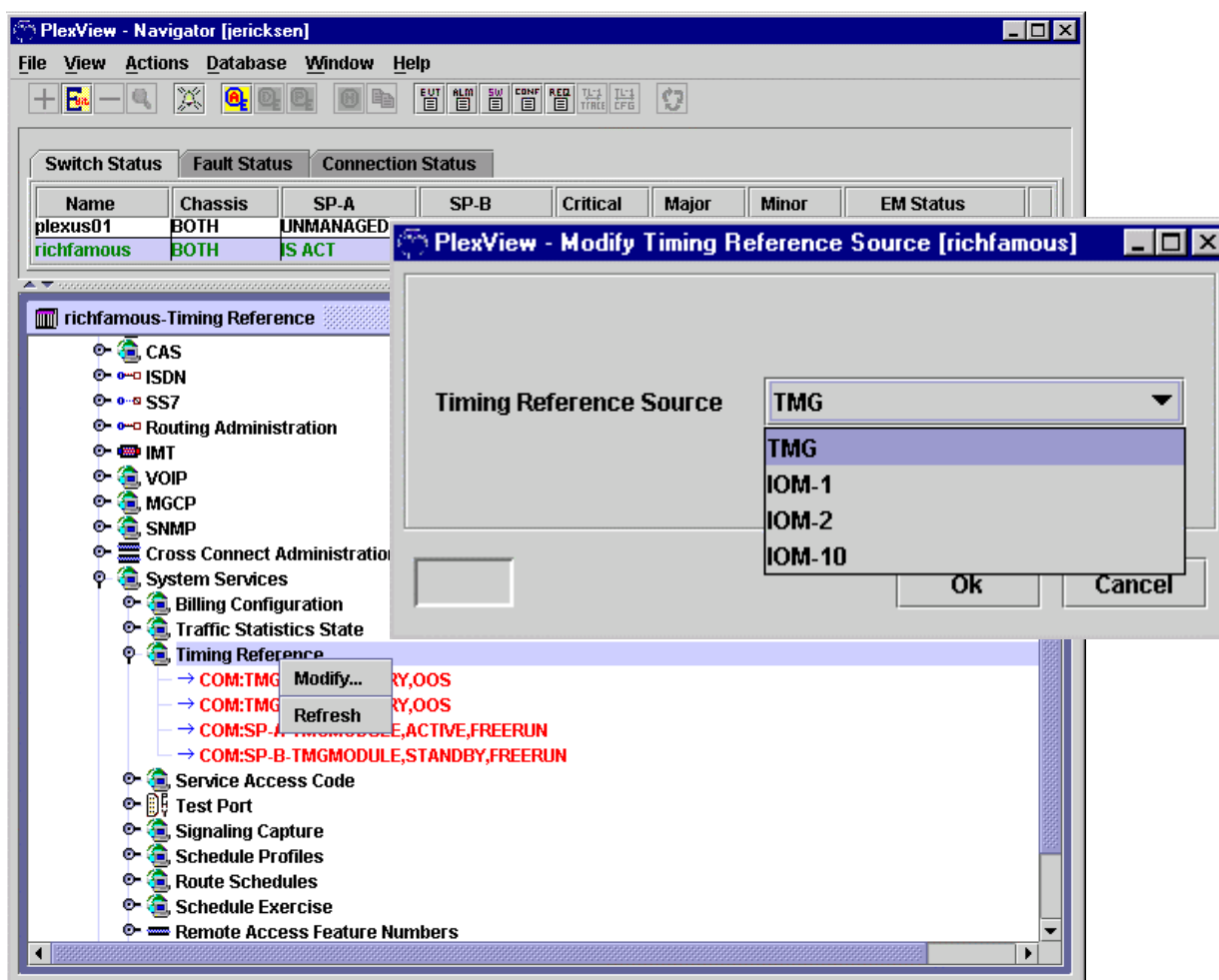


Figure 2. Timing Reference

19. Retrieve the primary timing reference.

If using **TL1**, use the RTRV-TMGREF command.

If using **EMS**, double-click *Timing Reference*.

20. Is the timing reference provisioning correct?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 18](#).

21. Check provisioning of T1 or E1 used for timing.

If using **TL1**, using the RTRV-T1 (or RTRV-E1) command for both TMG-A and TMG-B.

Command Example: RTRV-T1::tmg-a;

Command Example: RTRV-E1::IOM-1-PORT-1;

Reference: **DLP-522**

If using **EMS**:

For TMG and SP: double-click *Cards*, *SP*, and *Ports*. Right-click the *TMG* line, select *View*. Refer to [Figure 4](#) for illustrations of screens.

For recovered line timing: double-click *Cards*, *IOM* line, and *Ports*. Right-click the *IOM-Port* line, select *View*.

22. Is provisioning correct?

If **YES**, then go to [Step 24](#).

If **NO and using BITS**, then continue to the next step.

If **NO and using recovered line timing (IOM)**, then go to [Step 26](#).

23. Provision the BITS timing interface

If using **TL1**, using the ED-T1 (or ED-E1) command for both TMG-A and TMG-B.

Command Example: ED-T1::tmg-a:::fmt=esf,  
linecde=b8zs,tmgref=pri:is;

Reference: **DLP-522**

If using **EMS**, double-click *Cards*, *SP*, and *Ports*. Right-click the *TMG* line, select *Modify* and then make correct selections for all parameters. Refer to [Figure 4](#) for illustrations of screens.

24. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

Command Example: RTRV-ALM-T3;

25. Has the alarm cleared?

If **YES**, then go to [Step 49](#).

If **NO**, then go to [Step 48](#).

26. Provision both recovered line timing interfaces and then go to [Step 24](#).

If using **TL1**, using the ED-T1 (or ED-E1) command for both IOMs.

Command Syntax: ED-T1:[TID]:<ds\_id>:[CTAG]::  
[FMT=<fmt>],[LINECDE=<linecde>],  
[TMGREF=<tmgref>]: [<pst>];

Command Example: ED-T1::iom-1-port-1:::fmt=esf,  
linecde=b8zs,tmgref=pri:is;

Reference: **DLP-551**

If using **EMS**, double-click *Cards*, the *IOM* line and then the *Ports*. Right-click the port and then select *Modify*. Make changes as required to provisioning and select *Ok* or *Apply*. See [Figure 3](#) for an illustration of screens.

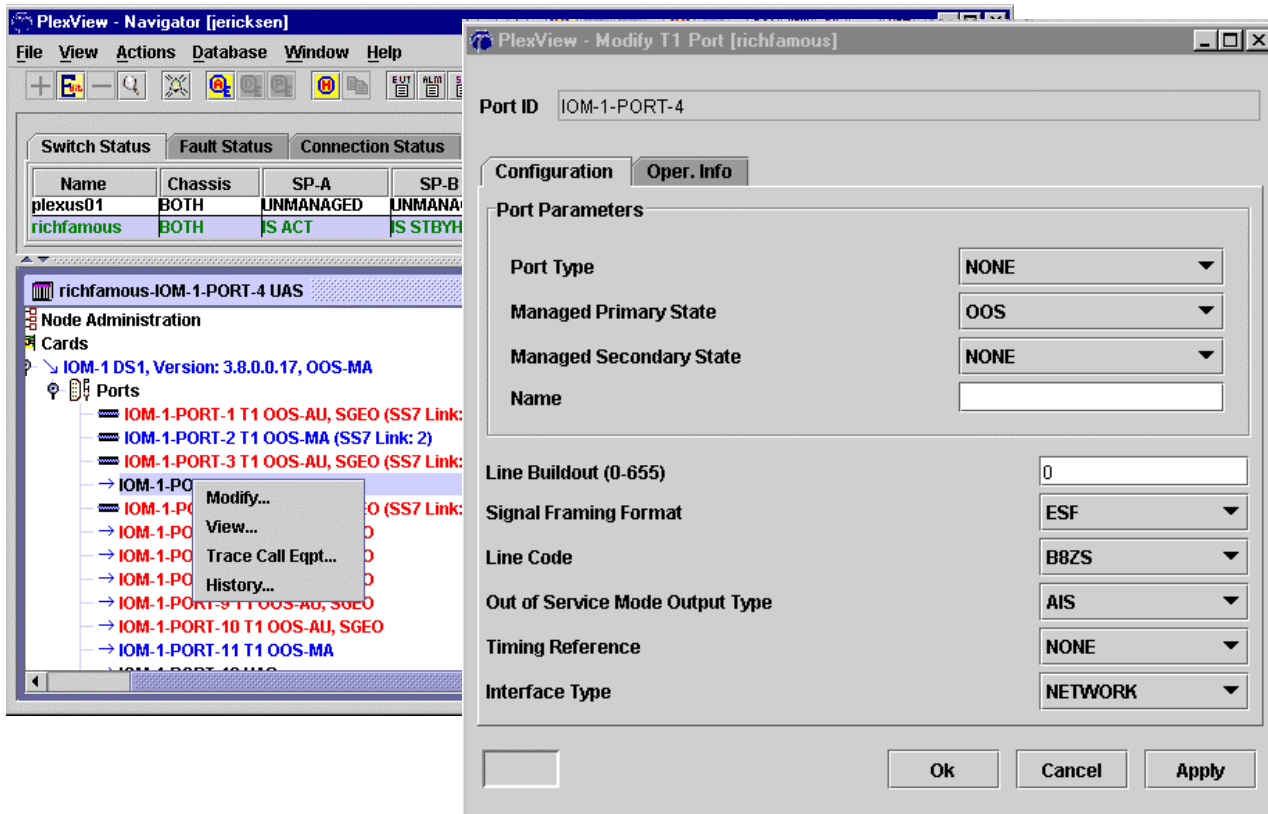


**Figure 3. Modify T1 Port Provisioning**



27. Verify state of timing reference.

If using **TL1**, use the RTRV - TMGREF command.

Command Example: RTRV - TMGREF ;

If using **EMS**, double-click *System Services* and double-click *Timing Reference*.  
See [Figure 2](#).

28. Is it in service (IS)?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 21](#) for provisioning.

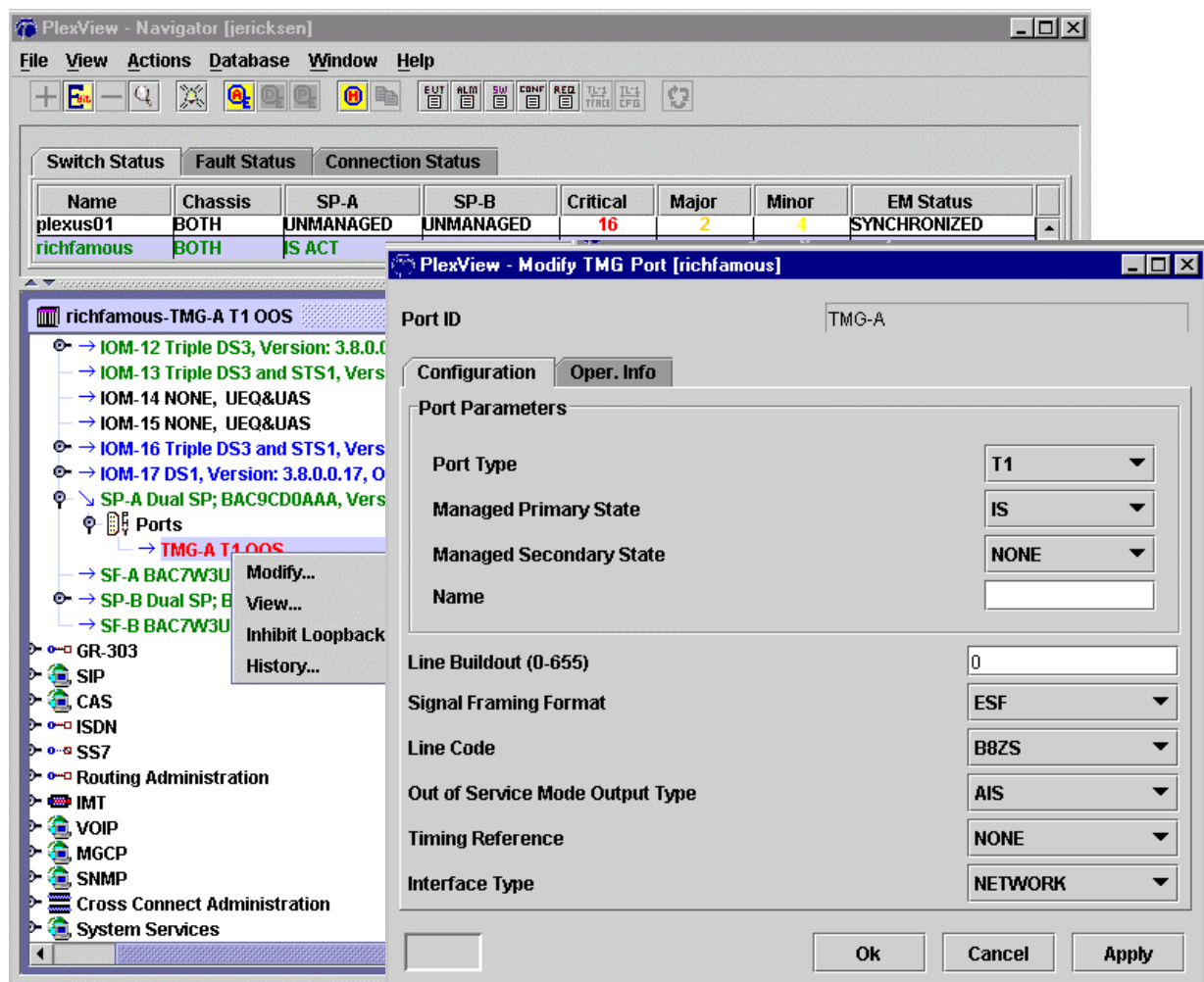


Figure 4. Modify SP Timing Provisioning

29. Check cabling to the BITS connectors on the rear Switch Fabric (SF) modules or cabling to IOM.
30. Have the wires to the BITS connector on the SF module been disconnected or the cable to the IOM?  
If **YES**, then continue to the next Step.  
If **NO**, then go to [Step 35](#).
31. Will BITS or T1/E1 of IOM be disconnected for a length of time?  
If **YES**, then  **YOU HAVE COMPLETED THIS PROCEDURE.**  
If **NO**, then continue to the next step.
32. Connect wiring or cabling.  
If BITS, then wire-wrap the BITS timing input(s) on the rear of the Switch Fabric module(s).  
Reference: **DLP-519**  
If recovered line timing, reconnect cable or determine cause of signal loss.
33. Verify that the alarm has cleared.  
If using **EMS**, check alarms. Refer to [Step 5](#).  
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).  
Command Example: RTRV-ALM-ALL;
34. Has the alarm cleared?  
If **YES**, then go to [Step 49](#).  
If **NO**, then continue to the next step.
35. If possible, check for the presence of an incoming BITS signal at the connector on the rear SF modules.
36. Is there a valid BITS signal?  
If **YES**, then go to [Step 38](#).  
If **NO**, then notify the far-end about missing BITS signal.
37.  **YOU HAVE COMPLETED THIS PROCEDURE.**

38. Is the SP/TMG module reporting the alarm, the active (working) module or the protection module?

If **protection**, then go to [Step 40](#).

If **active**, then continue to the next step.

39. Switch the SP to protection.

If using **TL1**, use the SW-TOPROTN-EQPT command.

Command Syntax: SW-TOPROTN-EQPT::SP-{A|B};

Command Example: SW-TOPROTN-EQPT::SP-A;

If using **EMS**, right-click the SP and then select *Switch To Protection*. Screen is shown in [Figure 5](#).

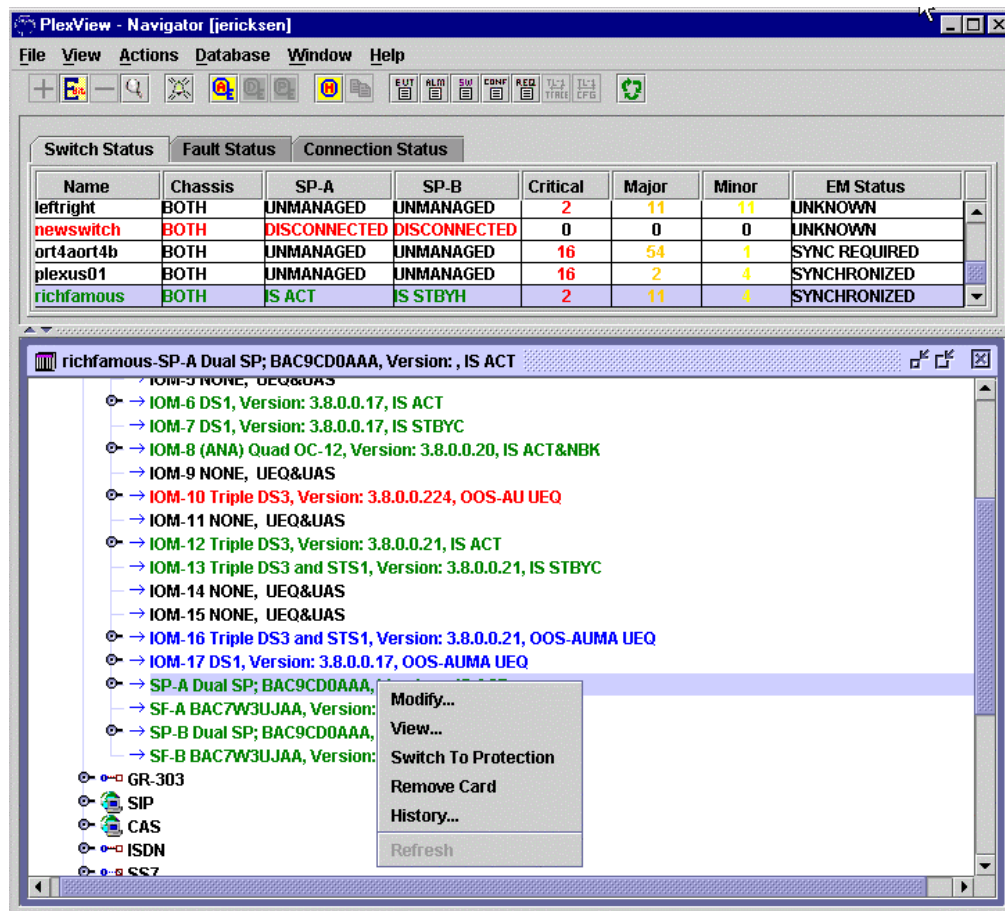


Figure 5. Right-clicking of SP

40. Disconnect cables from the associated SF rear module, loosen screws and remove the module; then replace the rear SF module, tighten screws and wire-wrap cables

Reference: **DLP-513**

41. Verify that the alarm has cleared.  
If using **EMS**, check alarms. Refer to [Step 5](#).  
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).  
Command Example: RTRV-ALM-ALL ;
42. Has the alarm cleared?  
If **YES**, then go to [Step 49](#).  
If **NO**, then continue to the next step.
43. Is the SP/TMG module reporting the alarm, the active (working) module or the protection module?  
If **protection**, then go to [Step 45](#).  
If **active**, then continue to the next step.
44. Switch the SP to protection,  
If using **TL1**, use the SW-TOPROTN-EQPT command.  
Command Syntax: SW-TOPROTN-EQPT : :SP-{A|B};  
Command Example: SW-TOPROTN-EQPT : :SP-A;  
If using **EMS**, right-click the SP and then select *Switch To Protection*. Screen is shown in [Figure 5](#).
45. Loosen screws, remove the SP/TMG front module and replace it.  
Reference: **DLP-512**
46. Verify that the alarm has cleared.  
If using **EMS**, check alarms. Refer to [Step 5](#).  
If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).  
Command Example: RTRV-ALM-T3 ;
47. Has the alarm cleared?  
If **YES**, then go to [Step 49](#).  
If **NO**, then continue to the next step.
48. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.
49.  **YOU HAVE COMPLETED THIS PROCEDURE.**

## TAP-105 - CLEAR CHASSIS, FAN AND POWER ALARMS

**SUMMARY:** This procedure provides steps to perform trouble analysis practices for determining the cause and correction of the problems. This procedure assumes that the fans and power had been operating error-free previously.



**DANGER:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



**Caution:** *Take precautions to prevent service disruptions when performing this procedure by carefully following steps.*



**Note:** This procedure assumes you are already logged into the Element Management System (EMS) or the TL1 interface (craft port or Telnet session).

Illustrations of EMS screens show screens to be selected and are not related to a particular alarms and may differ depending upon software version of the switch.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Do you know the alarm or are you sure you are in the correct procedure?  
If **YES**, then continue to the next step.  
If **NO**, then go to the **TAP-IXL** (step 18) to determine alarm and TAP or IXL step to which to go.
3. Are you using the Element Management System (EMS) or a TL1 interface?  
If **EMS**, then continue to the next step  
If **TL1**, then go to [Step 8](#).



**Note:** In the following steps, you will use EMS to retrieve alarms or log information.

4. Ensure you have selected the switch for which you will be troubleshooting alarms.
5. In the toolbar, select *Actions*, then *View* and then *Alarms*.

The screenshot shows the PlexView - Navigator application. The 'Actions' menu is open, showing options like 'Add...', 'Modify...', 'Delete', 'View...', 'Status...', 'Order Entry...', 'Deactivate Active Order', 'Pending...', 'History...', 'Clone...', 'Logs', 'Switch', 'Card', and 'Port'. The 'View' option is selected, leading to the 'View Switch [richfamous]' window. This window has tabs for 'Configuration', 'Oper. Info', 'Stats', 'PM Stats', 'Conditions', 'Alarms', and 'IP Route'. The 'Alarms' tab is active, displaying a table of alarms.

| Alarm ID       | Entity Type   | Notification... | Condition Ty... | Service Effect  | Date  | Time     | Description                                        |
|----------------|---------------|-----------------|-----------------|-----------------|-------|----------|----------------------------------------------------|
| Chassis        | EQUIPMENTUNIT | CRITICAL        | PRCDRERR        | SERVICEAFFEC... | 06-09 | 11-14-11 | 2- No BITS Inputs are provisioned In Service       |
| IOM-13-REAR    | EQUIPMENTUNIT | CRITICAL        | PRCDRERR        | SERVICEAFFEC... | 06-09 | 11-14-22 | 9- IOM-13 rear module does not match front mo...   |
| SP-B           | PACKETLINK    | MAJOR           | CSC             | SERVICEAFFEC... | 06-09 | 11-12-15 | 1- SP-B 100baseT loss of carrier on signaling l... |
| 303IF-1        | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-09 | 14-46-02 | 12- GR303 TMC channel down - IfGrpNum-1            |
| 303IF-1        | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-09 | 14-46-02 | 13- GR303 EOC channel down - IfGrpNum-1            |
| 303IF-99       | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-10 | 12-50-28 | 14- GR303 TMC channel down - IfGrpNum-99           |
| 303IF-99       | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-10 | 12-50-28 | 15- GR303 EOC channel down - IfGrpNum-99           |
| TMG-B          | EQUIPMENTUNIT | MINOR           | FRNGSYNC        | NONSERVICEA...  | 06-09 | 11-14-12 | 3- TMG-B - Clock in FreeRun                        |
| IOM-7          | EQUIPMENTUNIT | MINOR           | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-56 | 5- Module in Slot 7 present but not provisioned    |
| IOM-6          | EQUIPMENTUNIT | MINOR           | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-57 | 6- Module in Slot 6 present but not provisioned    |
| IOM-1          | EQUIPMENTUNIT | MINOR           | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-57 | 7- Module in Slot 1 present but not provisioned    |
| TMG-A          | EQUIPMENTUNIT | MINOR           | FRNGSYNC        | NONSERVICEA...  | 06-09 | 11-15-27 | 10- TMG-A - Clock in FreeRun                       |
| IOM-12         | EQUIPMENTUNIT | MINOR           | PROTNA          | NONSERVICEA...  | 06-09 | 11-44-11 | 8- Module in slot 12 is unprotected                |
| ISDNIF-1200... | ISDNL2        | MINOR           | LAPDIRR         | NONSERVICEA...  | 06-10 | 13-18-17 | 11- LAPD - Link down - IntfId 12001 linkId 1200... |

At the bottom of the 'View Switch' window, there is a 'Refresh poll' button and a 'Status' section with a progress bar ranging from 0 to 300.

Figure 1. Viewing Alarms

6. Click the Notification column to sort the alarms from CRITICAL to MINOR. You will troubleshoot CRITICAL alarms first.
7. Locate the IOM alarm and then go to [Step 10](#).

8. If using craft port connection or a Telnet session, then enter the RTRV-ALM-<ReptAid> command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: RTRV-ALM-ALL ;

Command Example: RTRV-ALM-T3 ;

9. Determine alarms that apply to chassis, power or fans for troubleshooting using this procedure.

**Note:** Alarms are listed in numerical order of the alarm ID used in TL1. The “AID” column in the table relates to the EMS column, “Alarm ID.” If the version of software running on the SP does not output the alarm ID, you will have to search the “REPT string” to find the alarm.



If you cannot find the alarm, return to the **TAP-IXL** to find the alarm. You may be in the wrong procedure.

Clear critical alarms first, then major and finally minor alarms.

10. If using EMS, you can check fan and power status by right-clicking the switch name, selecting *View*, then *Oper. Info* at the top and *Fans, Fault and Power* near the bottom. Refer to [Figure 2](#) at the end of this procedure.
11. Locate the alarms in the appropriate table, and then go to the designated step and perform the steps to clear the alarm. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (\*) can be critical or major alarms.

If the alarm is a **MAJOR** alarm, then go to [Table A. Major Alarms](#).

If the alarm is a **MINOR** alarm, then go to [Table B. Minor Alarms](#).

**Table A. Major Alarms**

| ID | REPT string for Major Alarms   | CONDTYPE     | TYPE | AID |
|----|--------------------------------|--------------|------|-----|
| 48 | Fan unit or fuse fault         | INT          | EQPT | Fan |
| 50 | Chassis over temperature fault | INT          | EQPT | Fan |
| 52 | Fan unit has been removed      | REPLUNITMISS | EQPT | Fan |

**Table B. Minor Alarms**

|    | REPT string for Minor Alarms | CONDTYPE | TYPE | AID      |
|----|------------------------------|----------|------|----------|
| 39 | Power Source %c lost voltage | PWR      | EQPT | Power-%c |

**12.** Is the fan shelf installed?

If **YES**, then continue to the next step

If **NO**, then install the fan shelf and go to [Step 15](#).

Reference: **DLP-507**

**13.** Check the fan fuses on the lower rear of the chassis. Is a fuse blown or inserted incorrectly?

If **YES**, then replace the blown fuse or insert it correctly.

If **NO**, then replace the fan shelf and go to [Step 15](#).

Reference: **DLP-507**

**14.** Are all the fans working?

If **YES**, then continue to the next step

If **NO**, then install the fan shelf and go to [Step 15](#).

Reference: **DLP-507**

**15.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

**16.** Has the FAN alarm cleared.

If **alarm is cleared**, then go to [Step 20](#).

If **alarm is NOT cleared**, then go to [Step 19](#).



TABLE A (continued)

| ID | INFORMATION for Major Alarms                                                                                                | GO TO                          |
|----|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 48 | Either a Fan has stopped spinning or a DC power fuse is faulted.                                                            | Go to <a href="#">Step 13.</a> |
| 50 | Indicates the temperature sensor on the Plexus has detected a high condition.                                               | Go to <a href="#">Step 18.</a> |
| 52 | The fan in a slot has been removed from the chassis or is not detected to be present.<br>Maintenance Procedure in progress. | Go to <a href="#">Step 12.</a> |

TABLE B (continued)

| ID | INFORMATION for Minor Alarms                                                                           | GO TO                          |
|----|--------------------------------------------------------------------------------------------------------|--------------------------------|
| 39 | Indicates Power rail A or B has been disconnected from 48 volts. Remote fuse, power fail or DC wiring. | Go to <a href="#">Step 17.</a> |

17. Determine the loss of power at the source (e.g., remote fuse or power failure) and rectify and then go to [Step 20.](#)
18. Is the temperature of the area, where the Plexus is installed, high (over 40 °C or 104 °F)?  
If **YES**, then rectify the temperature of the area and go to [Step 20.](#)  
If **NO**, then continue to the next step.
19. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.
20.  **YOU HAVE COMPLETED THIS PROCEDURE.**

PlexView - View Switch [richfamous]

Configuration Oper. Info Stats PM Stats Conditions Alarms IP Route

Switch Name (SID) richfamous

Status of Connection to SP A/B SP-A: IS ACT, SP-B: IS STBYH

Fan

Fan ID FAN

Fan Status OKAY

Fan Failures 0

Power

Power A OKAY

Power B OKAY

Faults

Critical Faults 3

Major Faults 10

Minor Faults 7

Temperature OKAY

Temperature Faults 0

HW Fans, Faults & Power

EM/Signaling/Craft Addresses DNS/NTP Addresses

Refresh poll Status

Refresh

0 30 60 90 120 150 180 210 240 270 300

Close

Figure 2. Fans Faults and Power

## TAP-106 - CLEAR MISCELLANEOUS ALARMS

**SUMMARY:** This procedure provides steps to perform trouble analysis practices for determining the cause and correction of the problems. This procedure assumes that the Plexus had been operating error-free previously. For some steps, information can only be obtained by using TL1 commands. Also, some commands may not be available because of the system software version. It is suggested that you open both EMS and a Telnet session.



**DANGER:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



**Caution:** *Take precautions to prevent service disruptions when performing this procedure by carefully following steps.*



**Note:** This procedure assumes you are already logged into the Element Management System (EMS) or the TL1 interface (craft port or Telnet session).

Illustrations of EMS screens show screens to be selected and are not related to a particular alarms and may differ depending upon software version of the switch.

1. Before performing this procedure, contact the maintenance personnel at the central reporting center and facility personnel at your location and the remote sites to inform them that you are working on the Plexus 9000.
2. Do you know the alarm or are you sure you are in the correct procedure?  
If **YES**, then continue to the next step.  
If **NO**, then go to the **TAP-IXL** to determine alarm and TAP or IXL step to which to go.
3. Are you using the Element Management System (EMS) or a TL1 interface?  
If **EMS**, then continue to the next step  
If **TL1**, then go to [Step 8](#).



**Note:** In the following steps, you will use EMS to retrieve alarms or log information.

4. Ensure you have selected the switch for which you will be troubleshooting alarms.
5. In the toolbar, select *Actions*, then *View* and then *Alarms*.

The screenshot shows the PlexView software interface. The top window, 'PlexView - Navigator [jericksen]', has a menu bar with 'File', 'View', 'Actions', 'Database', 'Window', and 'Help'. The 'Actions' menu is open, showing options like 'Add...', 'Modify...', 'Delete', 'View...', 'Status...', 'Order Entry...', 'Deactivate Active Order', 'Pending...', 'History...', 'Clone...', 'Logs', 'Switch', 'Card', and 'Port'. The 'Switch' option is selected, and a sub-menu is visible. The main window displays a table of switch status information.

| Section Status   | SP-B | Critical | Major | Minor         | EM Status |
|------------------|------|----------|-------|---------------|-----------|
| CTEDDISCONNECTED | 0    | 0        | 0     | UNKNOWN       |           |
| ED UNMANAGED     | 16   | 54       | 1     | SYNC REQUIRED |           |
| ED UNMANAGED     | 16   | 2        | 4     | SYNCHRONIZED  |           |
| IS ACT           | 2    | 5        | 7     | SYNCHRONIZED  |           |
| IS ACT           | 1    | 0        | 10    | SYNC REQUIRED |           |

The bottom window, 'PlexView - View Switch [richfamous]', has tabs for 'Configuration', 'Oper. Info', 'Stats', 'PM Stats', 'Conditions', 'Alarms', and 'IP Route'. The 'Alarms' tab is selected, displaying a table of alarms.

| Alarm ID       | Entity Type   | Notification... | Condition Ty... | Service Effect  | Date  | Time     | Description                                        |
|----------------|---------------|-----------------|-----------------|-----------------|-------|----------|----------------------------------------------------|
| Chassis        | EQUIPMENTUNIT | CRITICAL        | PRCDRERR        | SERVICEAFFEC... | 06-09 | 11-14-11 | 2- No BITS Inputs are provisioned In Service       |
| IOM-13-REAR    | EQUIPMENTUNIT | CRITICAL        | PRCDRERR        | SERVICEAFFEC... | 06-09 | 11-44-22 | 9- IOM-13 rear module does not match front mo...   |
| SP-B           | PACKETLINK    | MAJOR           | CSC             | SERVICEAFFEC... | 06-09 | 11-12-15 | 1- SP-B 100baseT loss of carrier on signaling l... |
| 303IF-1        | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-09 | 14-46-02 | 12- GR303 TMC channel down - IfGrpNum-1            |
| 303IF-1        | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-09 | 14-46-02 | 13- GR303 EOC channel down - IfGrpNum-1            |
| 303IF-99       | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-10 | 12-50-28 | 14- GR303 TMC channel down - IfGrpNum-99           |
| 303IF-99       | ISDNL2        | MAJOR           | LAPDIRR         | SERVICEAFFEC... | 06-10 | 12-50-28 | 15- GR303 EOC channel down - IfGrpNum-99           |
| TMG-B          | EQUIPMENTUNIT | MINOR           | FRNGSYNC        | NONSERVICEA...  | 06-09 | 11-14-12 | 3- TMG-B - Clock in FreeRun                        |
| IOM-7          | EQUIPMENTUNIT | MINOR           | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-56 | 5- Module in Slot 7 present but not provisioned    |
| IOM-6          | EQUIPMENTUNIT | MINOR           | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-57 | 6- Module in Slot 6 present but not provisioned    |
| IOM-1          | EQUIPMENTUNIT | MINOR           | PRCDRERR        | NONSERVICEA...  | 06-09 | 11-14-57 | 7- Module in Slot 1 present but not provisioned    |
| TMG-A          | EQUIPMENTUNIT | MINOR           | FRNGSYNC        | NONSERVICEA...  | 06-09 | 11-15-27 | 10- TMG-A - Clock in FreeRun                       |
| IOM-12         | EQUIPMENTUNIT | MINOR           | PROTNA          | NONSERVICEA...  | 06-09 | 11-44-11 | 8- Module in slot 12 is unprotected                |
| ISDNIF-1200... | ISDNL2        | MINOR           | LAPDIRR         | NONSERVICEA...  | 06-10 | 13-18-17 | 11- LAPD - Link down - Intfcd 12001 linkld 1200... |

At the bottom of the 'View Switch' window, there is a 'Refresh poll' button and a 'Status' section with a progress bar and a 'Refresh' button. The progress bar shows a value of 0, with a scale from 0 to 300.

Figure 1. Viewing Alarms

6. Click the Notification column to sort the alarms from CRITICAL to MINOR. You will troubleshoot CRITICAL alarms first.
7. Locate the IOM alarm and then go to [Step 10](#).

8. If using craft port connection or a Telnet session, then enter the RTRV-ALM-<ReptAid> command. ReptAid can be ALL, COM, E1, ENET, EQPT, ISDNL2, ISDNL3, LINE, LINK, OC, PLK, SLK, STS1, T0, T1, T3, or TRK depending upon SP software version.

Command Example: RTRV-ALM-ALL;

Command Example: RTRV-ALM-T3;

9. Determine miscellaneous alarms for troubleshooting using this procedure.

**Note:** Alarms are listed in numerical order of the alarm ID used in TL1. The “AID” column in the table relates to the EMS column, “Alarm ID.” If the version of software running on the SP does not output the alarm ID, you will have to search the “REPT string” to find the alarm.



If you cannot find the alarm, return to the TAP-IXL to find the alarm. You may be in the wrong procedure.

Clear critical alarms first, then major and finally minor alarms.

10. Locate the alarms in the appropriate table, and then go to the designated step and perform the steps to clear the alarm. Tables span two pages so follow across to facing page for “GO TO” step number. Alarm ID numbers followed by an asterisk (\*) can be critical or major alarms.

If the alarm is a **CRITICAL** alarm, then go to [Table A. Critical Miscellaneous Alarms](#).

If the alarm is a **MAJOR** alarm, then go to [Table B. Major Miscellaneous Alarms](#).

If the alarm is a **MINOR** alarm, then go to [Table C. Minor Miscellaneous Alarms](#).

**Table A. Critical Miscellaneous Alarms**

| ID   | REPT String for Critical Alarms                             | CONDTYPE  | TYPE | AID                             |
|------|-------------------------------------------------------------|-----------|------|---------------------------------|
| 420  | MTP3 - PAUSE - PC %s                                        | CCSNETIRR | COM  | PC-%s                           |
| 907  | M3UA - PAUSE - PC %s                                        | CCSNETIRR | COM  | PC-%s                           |
| 926  | M3UA - SP-%c - Remote Node Unreachable - ChassisId %d SP-%c | EXT       | COM  | COM                             |
| 1055 | M3UA - SP-%c - Remote Node Unreachable - PC-%d-%d-%d-SP-%c  | EXT       | COM  | COM                             |
| 1066 | IOM-%d-%s No Inverse ARP from the Far End                   | EXT       |      | IOM-%d-OC3-%d or IOM-%d-OC12-%d |
| 1073 | IOM-%d-%s Inverse ARP: Remote Peer IP %s mismatch           | EXT       |      | IOM-%d-OC3-%d or IOM-%d-OC12-%d |
| 1190 | MGCP - congestion threshold 3 exceeded                      | EXTERR    | COM  | COM                             |
| 1192 | SIP - congestion threshold 3 exceeded                       | EXTERR    | COM  | COM                             |

**Table B. Major Miscellaneous Alarms**

| ID  | REPT string for Major Alarms                                    | CONDTYPE  | TYPE | AID                |
|-----|-----------------------------------------------------------------|-----------|------|--------------------|
| 372 | MTP3 - link entered cong - linkId %d on %s                      | SLCR-3    | SLK  | SLK-%d             |
| 422 | MTP3 - PC %s congested                                          | SLCR-3    | COM  | PC-%s              |
| 540 | More than %d of trunk to DPC %s is OOS                          | TRKGRPLIM | TRK  | PC-%d-%d-%d        |
| 556 | More than %d percent of the trunks or lines in route %s are OOS | TRKGRPLIM | TRK  | RT-%s              |
| 638 | SVCID % Endpoint Out Of Service PC %s Cause %s                  | INTERR    | PLK  | SVC-%d-%d-%d-%d    |
| 639 | SVCID % Endpoint Out Of Service PC %s Cause %s                  | EXT       | PLK  | SVC-%d-%d-%d-%d-%d |
| 643 | PVCID % Out Of Service Cause %s                                 | INT       | PLK  | PVC-%d-%d-%d-%d-%d |
| 644 | PVCID % Out Of Service Cause %s                                 | EXT       | PLK  | PVC-%d-%d-%d-%d-%d |
| 711 | SCCP - User out of service - swItch %d spId %d PC %s ssn %d     | PROGFLT   | COM  | PC-%d-%d-%d-SSN-%d |
| 919 | More than %d percent of trunks in TrkGrp %d are OOS             | TRKGRPLIM | TRK  | TGRP-%d            |

**Table A. (continued)**

| ID   | INFORMATION for Critical Alarms                                                                                                                       | GO TO                          |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 420  | Destination is inaccessible to MTP3 as determined by routing management Failure on a remote Point Code device (SCP, SSP), link failures, faulted IOM. | Go to <a href="#">Step 11.</a> |
| 907  | Destn inaccessible to MTP3 as determined by routing mgmt. Network is down or gateway or cabling problem                                               | Go to <a href="#">Step 20.</a> |
| 926  | M3UA - SP-%c - Remote Node Unreachable - ChassisId %d SP-%c. Network is down or gateway or cabling problem                                            | Go to <a href="#">Step 20.</a> |
| 1055 | M3UA - SP-%c - Remote Node Unreachable -                                                                                                              | Go to <a href="#">Step 20.</a> |
| 1066 | Possible provisioning problem.                                                                                                                        | Go to <a href="#">Step 86.</a> |
| 1073 | Possible provisioning problem.                                                                                                                        | Go to <a href="#">Step 86.</a> |
| 1190 | MGCP based IAD is overloading the Plexus.                                                                                                             | Go to <a href="#">Step 92.</a> |
| 1192 | A SIP based feature server is overloading the Plexus.                                                                                                 | Go to <a href="#">Step 92.</a> |

**Table B. (continued)**

| ID  | INFORMATION for Major Alarms                                                                                                                                                                                                                                         | GO TO                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 372 | Indicates a congestion threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned or Equipment or facility faults have caused a large number of releases. Check for facilities faults, Check for SS7 link faults on other links. | Go to <a href="#">Step 26.</a> |
| 422 | Indicates a congestion threshold has been crossed for SS7 messaging to a Point Code. Call volumes are larger than planned or Equipment or facility faults have caused a large number of releases                                                                     | Go to <a href="#">Step 26.</a> |
| 540 | A large percentage of a trunkgroup has been provisioned out of service or has autonomously gone OOS due to a transmission failure. Facilities fault or provisioning.                                                                                                 | Go to <a href="#">Step 42.</a> |
| 556 | More than %d percent of the trunks or lines in route %s are OOS                                                                                                                                                                                                      | Go to <a href="#">Step 26.</a> |
| 638 | Indicates an AAL1 or AAL2 endpoint is out of service because of missing equipment or a faulted equipment modules.                                                                                                                                                    | Go to <a href="#">Step 37.</a> |
| 639 | Indicates an AAL1 or AAL2 endpoint is out of service because it is failing to set up an SVC to the remote endpoint. Faulted voice over packet facilities, e.g. LOS/LOF on ATM interface or Equipment at remote endpoint faulted or not provisioned                   | Go to <a href="#">Step 37.</a> |
| 643 | Indicates an AAL1 or AAL2 endpoint is out of service because of missing equipment or a faulted equipment                                                                                                                                                             | Go to <a href="#">Step 37.</a> |
| 644 | Indicates an AAL1 or AAL2 endpoint is out of service because it is failing the connectivity test with the remote equipment. Faulted voice over packet facilities, e.g. LOS/LOF on ATM interface or Equipment problem at remote endpoint.                             | Go to <a href="#">Step 37.</a> |
| 711 | Indicates the application process on a SCP entity specified by the Point Code (PC) not in-service. Examine the state of the SCP and applications or check if the PC is provisioned properly. Check the Plexus alarms to verify other PCs are in service              | Go to <a href="#">Step 58.</a> |
| 919 | Facilities faults or provisioning                                                                                                                                                                                                                                    | Go to <a href="#">Step 42.</a> |

**Table B. Major Alarms (continued)**

| ID   | REPT string for Major Alarms                                           | CONDTYPE  | TYPE   | AID              |
|------|------------------------------------------------------------------------|-----------|--------|------------------|
| 923  | ISUP ACC Congestion Level 2                                            | EXTERR    | COM    | COM              |
| 938  | GR303 TMC channel down - IfGrpNum-%d                                   | LAPDIRR   | ISDNL2 | 303IF-%d         |
| 940  | GR303 EOC channel down - IfGrpNum-%d                                   | LAPDIRR   | ISDNL2 | 303IF-%d         |
| 951  | IOM-%d VOIP PVC-%d endpoint down                                       | GP        | PLK    | IOM-%d-PVC-%d    |
| 969  | MGCP - unable to connect to DNS server                                 | EXT       | COM    | COM              |
| 1028 | ISDN - More than %d percent of B-Channels in IntfcId %d are OOS        | TRKGRPLIM | ISDNL3 | ISDNIF-%d        |
| 1032 | CAS - More than %d percent of lines on IntfcId %d are OOS              | TRKGRPLIM | PLK    | CAS-IF-%d        |
| 1037 | MGCP - More than %d percent of lines on IntfcId %d are OOS             | TRKGRPLIM | PLK    | MGCP-IF-%d       |
| 1045 | SP-%c lost heartbeat with PC-%d-%d-%d-SP-%c                            | GP        | COM    | BOTH-PC-%d-%d-%d |
| 1083 | IOM-%d-ENET-%d Source IP Address %s is the same as the Mate IP Address | MAN       |        | IOM-%-ENET-%     |
| 1175 | SIP - congestion threshold 2 exceeded                                  | EXTERR    | COM    | COM              |
| 1188 | CC - congestion threshold 2 exceeded                                   | EXTERR    | COM    | COM              |
| 1196 | ISDN - congestion threshold 2 exceeded                                 | EXTERR    | COM    | COM              |

**Table C. Minor Miscellaneous Alarms**

| ID  | REPT string for Minor Alarms                                    | CONDTYPE  | TYPE | AID         |
|-----|-----------------------------------------------------------------|-----------|------|-------------|
| 353 | MTP3 - link failed - linkId %d on %s                            | CCSNETIRR | SLK  | SLK-%d      |
| 367 | MTP3 - rmtly blkd - linkId %d on %s                             | CCSNETIRR | SLK  | SLK-%d      |
| 539 | More than %d%% of trunk to DPC %s is out-of-service             | TRKGRPLIM | TRK  | PC-%d-%d-%d |
| 555 | More than %d percent of the trunks or lines in route %s are OOS | TRKGRPLIM | TRK  | RT-%        |



**Table B. Major Alarms (continued)**

| ID   | INFORMATION for Major Alarms                                                                                                                                                                                                                                                                                                          | GO TO                          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 923  | Call volumes are larger than planned or Equipment or facility faults have caused a large number of releases.                                                                                                                                                                                                                          | Go to <a href="#">Step 26.</a> |
| 938  | Indicates the GR303 Trunk Management Channel is out of service. This means that both the working and protection channels are out of service. RDT problem or T1 problem. Verify that the T1 that is transporting the TMC is In Service or Check the configuration of the RDT                                                           | Go to <a href="#">Step 78.</a> |
| 940  | Indicates the GR303 Embedded Operations Channel (management function) is out of service. This means that both the working and protection channels are out of service.                                                                                                                                                                 | Go to <a href="#">Step 78.</a> |
| 951  | Indicates IP connectivity between the Plexus and the router is broken when using the PNA IOM for IP. Router is down, PNA IOM has faulted or the OC fiber has been removed or is faulty. Check the IOM and OC are in-service. If they are, check the IP configuration, or the ATM PVC configuration to see that it matches the router. | Go to <a href="#">Step 20.</a> |
| 969  | Indicates MGCP cannot connect to DNS server. Faulted voice over packet facilities, equipment at remote endpoint not provisioned or equipment at DNS server faulted.                                                                                                                                                                   | Go to <a href="#">Step 20.</a> |
| 1028 | Facilities faults or provisioning                                                                                                                                                                                                                                                                                                     | Go to <a href="#">Step 42.</a> |
| 1032 | Facilities faults or provisioning                                                                                                                                                                                                                                                                                                     | Go to <a href="#">Step 42.</a> |
| 1037 | Facilities faults or provisioning                                                                                                                                                                                                                                                                                                     | Go to <a href="#">Step 42.</a> |
| 1045 | SP-%c lost heartbeat with PC-%d-%d-%d-SP-%c                                                                                                                                                                                                                                                                                           | Go to <a href="#">Step 11.</a> |
| 1083 | Duplicate IP addresses                                                                                                                                                                                                                                                                                                                | Go to <a href="#">Step 86.</a> |
| 1175 | A SIP based feature server is overloading the Plexus.                                                                                                                                                                                                                                                                                 | Go to <a href="#">Step 92.</a> |
| 1188 | MGCP based IAD is overloading the Plexus.                                                                                                                                                                                                                                                                                             | Go to <a href="#">Step 92.</a> |
| 1196 | An ISDN based piece of equipment is overloading the Plexus.                                                                                                                                                                                                                                                                           | Go to <a href="#">Step 92.</a> |

**Table C. (continued)**

| ID  | INFORMATION for Minor Alarms                                                                                                                                                                    | GO TO                          |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 353 | Indicates an SS7 link is Out of Service due to a faulted facility (T1) or IOM. Faulted facility (T1) or faulted IOM running MTP2                                                                | Go to <a href="#">Step 11.</a> |
| 367 | Indicates the remote SS7 link has been blocked by the remote end. A maintenance operation has blocked the link                                                                                  | Go to <a href="#">Step 50.</a> |
| 539 | Indicates a threshold was crossed for number of trunks out of service to a Point Code. A maintenance operation has removed too many trunks or facilities (T1 or other) have rendered trunks OOS | Go to <a href="#">Step 11.</a> |
| 555 | Too many trunks are out of service.                                                                                                                                                             | Go to <a href="#">Step 26.</a> |

**Table C. Minor Miscellaneous Alarms (continued)**

| <b>ID</b> | <b>REPT string for Minor Alarms</b>                                        | <b>CONDTYPE</b> | <b>TYPE</b> | <b>AID</b>       |
|-----------|----------------------------------------------------------------------------|-----------------|-------------|------------------|
| 567       | LAPD - Link down - IntfcId %d linkId %d on %s                              | LAPDIRR         | ISDNL2      | ISDNIF-%d-LNK-%d |
| 901       | MTP3 - link util for 1min period above thresh - linkId %d util %d percent  | SLCR            | SLK         | SLK-%d           |
| 903       | MTP3 - link util for 5min period above thresh - linkId %d util %d percent  | SLCR            | SLK         | SLK-%d           |
| 905       | MTP3 - link util for 15min period above thresh - linkId %d util %d percent | SLCR            | SLK         | SLK-%d           |
| 918       | More than %d percent of trunks in TrkGrp %d are OOS                        | TRKGRPLIM       | TRK         | TGRP-%d          |
| 922       | ISUP ACC Congestion Level 1                                                | EXTERR          | COM         | COM              |
| 942       | GR303 TMC protection channel down - IfGrpNum-%d                            | LAPDIRR         | ISDNL2      | 303IF-%d         |
| 944       | GR303 EOC protection channel down - IfGrpNum-%d                            | LAPDIRR         | ISDNL2      | 303IF-%d         |
| 956       | MG overload detected CPU usage %d                                          | EXT             | COM         | COM              |
| 972       | MGCP - cannot reach provisioned gateway %s - last address attempted %s     | EXT             | COM         | COM              |
| 1026      | ISDN - More than %d percent of B-Channels in IntfcId %d are OOS            | TRKGRPLIM       | ISDNL3      | ISDNIF-%d        |
| 1030      | CAS - More than %d percent of lines on IntfcId %d are OOS                  | TRKGRPLIM       | PLK         | CAS-IF-%d        |
| 1035      | MGCP - More than %d percent of lines on IntfcId %d are OOS                 | TRKGRPLIM       | PLK         | MGCP-IF-%d       |
| 1049      | SMDI - Voice Mail Link Down - MSRID %d smdiLnkId %d - %s                   | REMLINK         | LINK        | SMDI-LNK-%d--%d  |
| 1071      | %s - IP-%s is unreachable                                                  | GP              | COM         | COM              |
| 1086      | SP-%c - EMS connectivity failure - IP-%s                                   | EXT             | COM         | SP-%             |
| 1174      | SIP - congestion threshold 1 exceeded                                      | EXTERR          | COM         | COM              |
| 1195      | ISDN - congestion threshold 1 exceeded                                     | EXTERR          | COM         | COM              |

**Table C. (continued)**

| <b>ID</b> | <b>INFORMATION for Minor Alarms</b>                                                                                                                                                                                                                                             | <b>GO TO</b>                    |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 567       | LAPD - Link down - IntfcId %d linkId %d on %s. Far end equipment problem or interface or link is OOS or provisioning                                                                                                                                                            | Go to <a href="#">Step 45.</a>  |
| 901       | Indicates a 1 min threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.                                                                                          | Go to <a href="#">Step 26..</a> |
| 903       | Indicates a 5 min threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.                                                                                          | Go to <a href="#">Step 26.</a>  |
| 905       | Indicates a 15 min threshold has been crossed for SS7 messaging over a link. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.                                                                                         | Go to <a href="#">Step 26.</a>  |
| 918       | More than %d percent of trunks in TrkGrp %d are OOS. Facilities Faults caused trunks to go OOS or Provisioning has taken trunks OOS.                                                                                                                                            | Go to <a href="#">Step 42.</a>  |
| 922       | ISUP ACC Congestion Level. Call volumes are larger than planned. Equipment or facility faults have caused a large number of releases.                                                                                                                                           | Go to <a href="#">Step 26.</a>  |
| 942       | Indicates the protection GR303 Trunk Management Channel is out of service. TMC down.                                                                                                                                                                                            | Go to <a href="#">Step 78.</a>  |
| 944       | Indicates the protection GR303 Embedded Operations Channel (management function) is out of service. EOC is down.                                                                                                                                                                | Go to <a href="#">Step 78.</a>  |
| 956       | MG overload detected CPU usage %d. Transport or equipment faults causing and overload, exceptionally high call setup/release rates from the MGC.                                                                                                                                | Go to <a href="#">Step 64.</a>  |
| 972       | MGCP - cannot reach provisioned gateway %s - last address attempted %s. The IAD which is using the Media Gateway Control Protocol is off-line, or there are IP network problems. Try pinging the IAD using the IP address or name. Check the IAD is powered up and operational. | Go to <a href="#">Step 73.</a>  |
| 1026      | Facilities faults or provisioning                                                                                                                                                                                                                                               | Go to <a href="#">Step 42.</a>  |
| 1030      | Facilities faults or provisioning                                                                                                                                                                                                                                               | Go to <a href="#">Step 42.</a>  |
| 1035      | Facilities faults or provisioning                                                                                                                                                                                                                                               | Go to <a href="#">Step 42.</a>  |
| 1049      | SMDI - Voice Mail Link Down - MSRID %d smdiLnkId %d - %s                                                                                                                                                                                                                        | Go to <a href="#">Step 81.</a>  |
| 1071      | IP addresses                                                                                                                                                                                                                                                                    | Go to <a href="#">Step 86.</a>  |
| 1086      | EMS lost connectivity to SPs                                                                                                                                                                                                                                                    | Go to <a href="#">Step 90.</a>  |
| 1174      | A SIP based feature server is overloading the Plexus.                                                                                                                                                                                                                           | Go to <a href="#">Step 92.</a>  |
| 1195      | An ISDN based piece of equipment is overloading the Plexus.                                                                                                                                                                                                                     | Go to <a href="#">Step 92.</a>  |

- 11.** Retrieve the status of the point code using the RTRV-STATUS-PC command.

Reference: **DLP-641**

Command Syntax: RTRV-STATUS-PC: [TID]:<ss7Pc>:[CTAG];

- 12.** Analyze the retrieved information. Are the MTP layer 3 test on the point code (SS7PCSTARSLT) equal to “success”, the point code (SS7PCSTASTATE) equal to “Y” (active) and the congestion of PC (SS7PCSTACONG) equal to “PRIORITY0” (uncongested)?

If **YES**, then go to [Step 14](#).

If **NO**, then continue to the next step.

- 13.** Determine why the PC test was unsuccessful or the PC is inactive or congested and correct.

- 14.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

Command Example: RTRV-ALM-T3;

- 15.** Has the alarm cleared?

If **YES**, then go to [Step 96](#).

If **NO**, then continue to the next step.

- 16.** Is the cabling or signal between the Plexus and the STP faulted?

If **YES**, then correct fault and go to [Step 18](#).

If **NO**, then continue to the next step.

- 17.** Replace the IOM that is sends and receives signaling to and from the STP.

Reference: **DLP-515**

- 18.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

Command Example: RTRV-ALM-T3;

- 19.** Has the alarm cleared?

If **YES**, then go to [Step 96](#).

If **NO**, then go to [Step 95](#).

20. Check the cabling of the appropriate network access module. Is it OK?
- If **YES**, then continue to the next step.  
If **NO**, then correct cabling and go to [Step 84](#).
21. Is the Network Access IOM faulted?
- If there are IOM or facilities faults, clear those first.
- Reference: **TAP-101**
- If **NO**, then continue to the next step.
22. Is the network, router or gateway connected to the Network Access IOM down?
- If **YES**, notify the appropriate personnel and then go to [Step 96](#).  
If **NO**, then continue to the next step
23. Check the IP or the ATM PVC configuration to ensure that it matches the router.
- If using **TL1**, use the RTRV-PVC-ENDPTVOIP to check provisioning.
- Command Example: RTRV-PVC-ENDPTVOIP::IOM-8-PVC-1;
- Command Example: RTRV-PVC-ENDPTVOA::192-47-32-5-100;
- If using **EMS**, double-click *VOIP* and then *PVC Endpoint*. Right-click the endpoint to check. See to [Figure 2](#) for an illustration of screens.
24. Is the provisioning correct?
- If **incorrect**, correct provisioning and then go to [Step 96](#).  
If **correct**, then continue to the next step.
25. Verify that the far-end equipment is operational and provisioned correctly and then go to [Step 95](#).

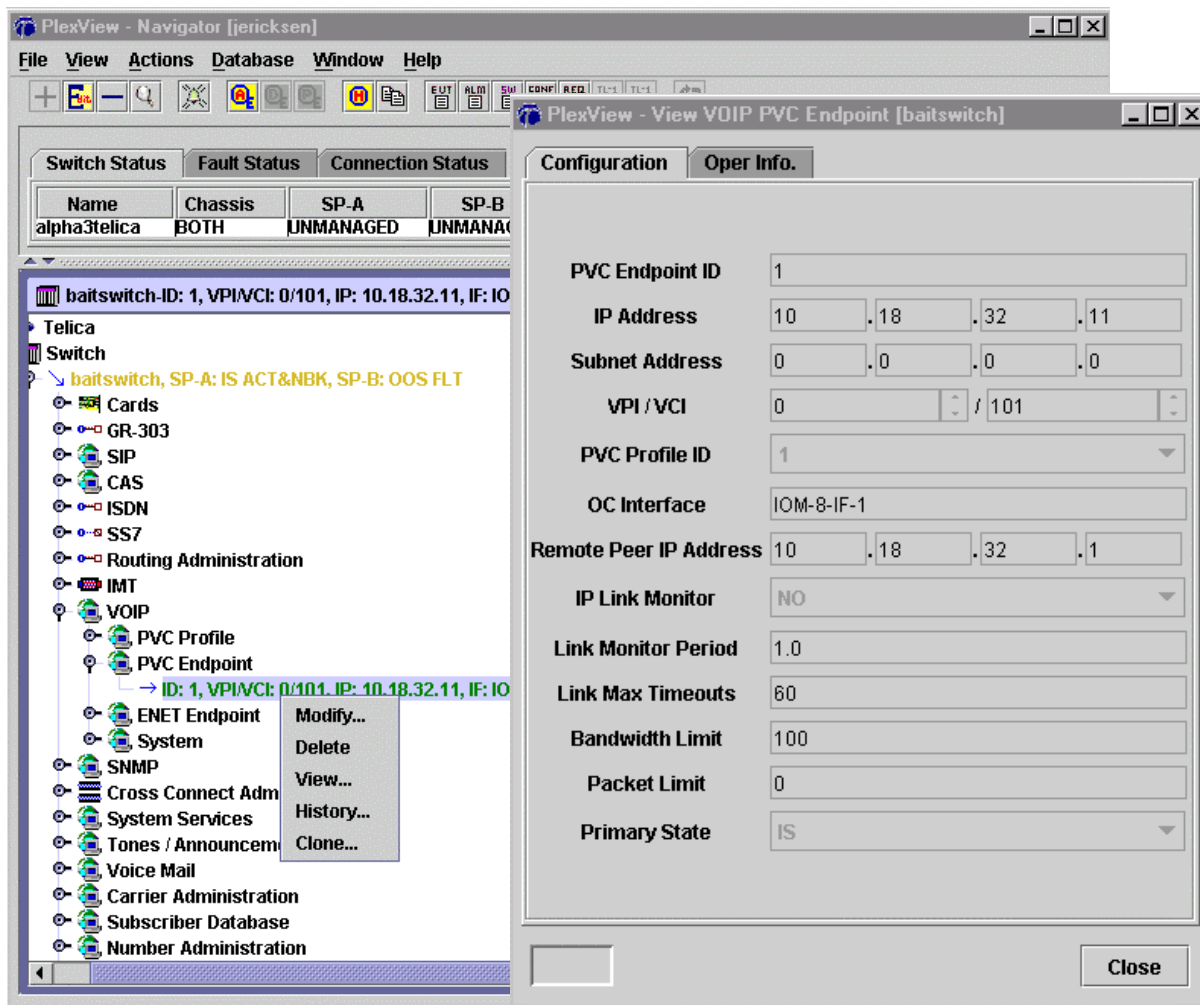


Figure 2. PVC Endpoint

26. Retrieve statistics for call control

If using **TL1**, use the RTRV-STATS-CC command. Reference **DLP-571** for detailed information for the command.

Command Syntax: RTRV-STATS-CC: [TID]: [<COM>]: [CTAG];

**Output Example:**

```
telica 2001-02-16 14:37:49
M 0 COMPLD
"TOTCLS=338,ANSCLS=278,UNANSCLS=58,STNDGCLS=0,
CFRTEUN=2,CFRSRUN=0,INSS7CLS=278,OUTSS7CLS=93,INISDNCL
S=0,OUTISDNCLS=185"
/* RTRV-STATS-CC */
```

If using **EMS**, right click the switch name, select *View, Stats*. Click *Refresh* to update the view. See illustration below.

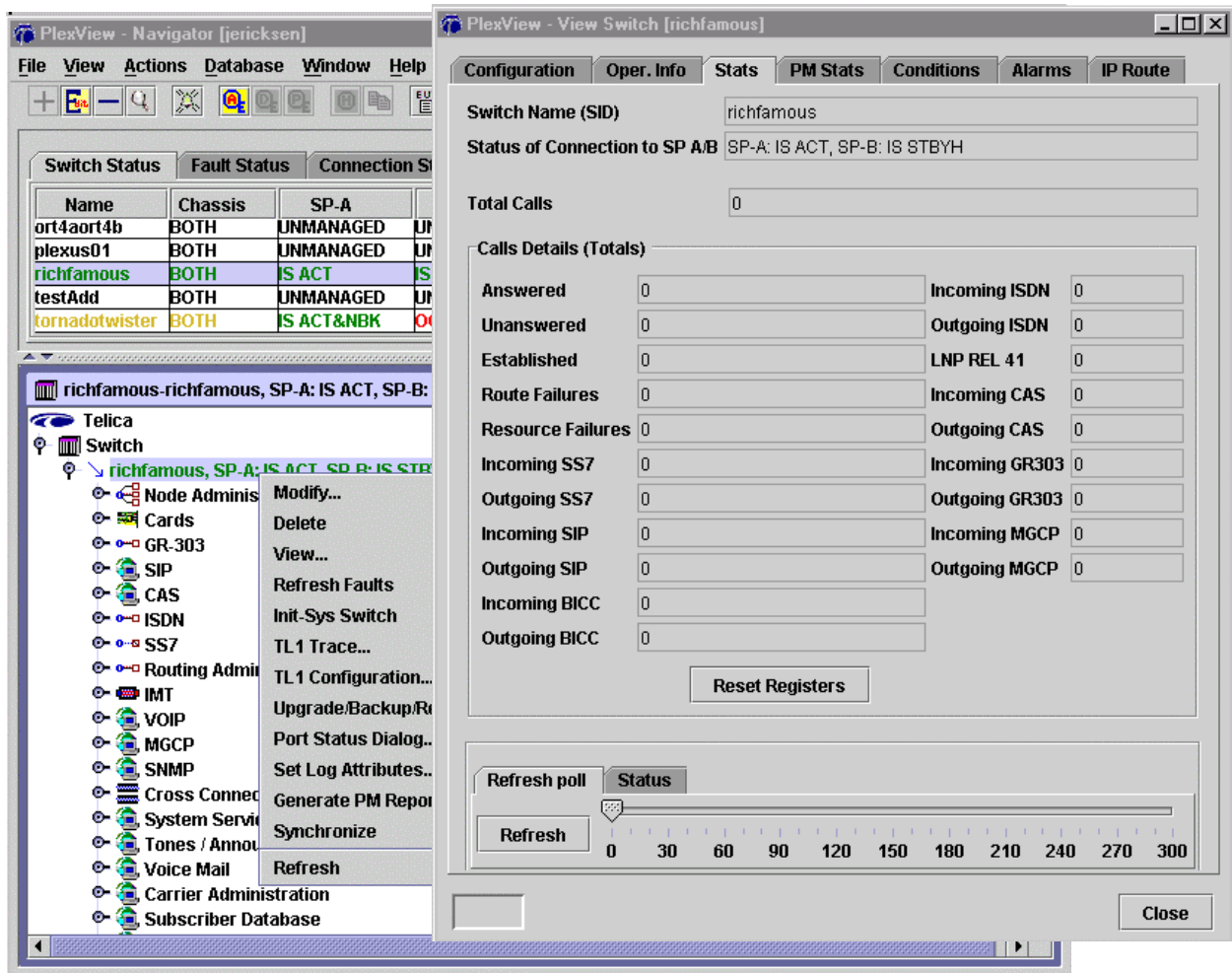


**Figure 3. Call Control Stats**

27. Analyze the retrieved information. Note if there a large number of CFRTEUN (call failure, route unavailable) and/or CFRSRUN (call failure, resources unavailable) reported.
28. Retrieve status of an SS7 route using the `RTRV-STATUS-ROUTESS7` command. Reference **DLP-640** for detailed information for the command.

Command Syntax: `RTRV-STATUS-ROUTESS7:[TID]:[<routeSs7Aid>]:[CTAG];`

Command Example: `RTRV-STATUS-ROUTESS7;`

**Output Example:**

```
Telica 2003-02-08 13:33:01
M 0 COMPLD
"1-1-1-1:ROUTESTARSLT=SUCCESS,
SS7ROUTESTASTATE=ALLOWED"
/* RTRV-STATUS-ROUTESS7 */
;
```

29. Analyze the retrieved information. Is the status request operation on the SS7 route (ROUTESTARSLT) equal to “success” and the current state of a route (SS7ROUTESTASTATE) equal to “allowed”?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 32](#).

30. Retrieve status of link set using the RTRV-STATUS-LSET command. Reference **DLP-596** for detailed information for the command.

Command Syntax: RTRV-STATUS-LSET:[TID]:<ss7LsetStaId>:  
[CTAG];

Command Example: RTRV-STATUS-LSET::1-1-1-1;

**Output Example:**

```
telica 2003-02-08 12:27:42
M 0 COMPLD
"1-1-1-1:LSETSTARSLT=SUCCESS,
SS7LSETSTANMBACTLNKS=2, SS7LSETSTASTATE=ACTIVE"
/* RTRV-STATUS-LSET */
```

31. Analyze the retrieved information. Are the MTP layer 3 test on the link set (LSETSTARSLT) equal to “success” and the current state of a link set (SS7LSETSTASTATE) equal to “active”?

If **YES**, then go to [Step 84](#).

If **NO**, then continue to the next step.

32. Determine if SS7 links are down and if so the cause.

If the problem is at **Plexus**, continue to the next step.

If problem is at **far-end**, notify personnel at far-end equipment.

If reason for failure **cannot be determined**, then go to [Step 95](#).

33. Check configuration of the SS7 route using the RTRV-ROUTE-SS7 command.

Reference: **DLP-552**.

Command Syntax: RTRV-ROUTE-SS7:[TID]:[<routeSs7>]:  
[CTAG];



34. Is provisioning correct?

If **YES**, then go to [Step 37](#).

If **NO**, then continue to the next step.

35. Provision an SS7 route using the RTRV-ROUTE-SS7 command.

Reference: **DLP-552**.

36. Is there another route to configure?

If **YES**, then go to [Step 35](#).

If **NO**, then go to [Step 84](#).

37. Are IOMs in I/O-8 and I/O-10 installed and operating?

If **YES**, then continue to the next step.

If IOM is **missing**, consult office records to determine missing module, install and provision.

Reference: **DLP-586, DLP-523, DLP-587, and DLP-593**

If IOM is **faulted**, then replace IOM.

Reference: **DLP-515**

38. Check SVC provisioning using the RTRV-SVC-ENDPTVOA command.

Reference: **DLP-593**

39. Is the provisioning correct?

If **YES**, then continue to the next step.

If **NO**, then correct provisioning.

Reference: **DLP-593**

40. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

41. Has the alarm cleared?

Command Example: RTRV-ALM-ALL;

If **alarm is cleared**, then go to [Step 96](#).

If **alarm is NOT cleared**, then go to [Step 95](#).

42. Verify there are no IOM or facilities faults.

Reference: **TAP-101**

If there are no IOM or facilities faults, then continue to the next step.  
If there are IOM or facilities faults, clear those first.

43. Check provisioning of CICs using RTRV-PRFL CIC and RTRV-TRKGRP commands.  
Reference **DLP-527** and **DLP-528**.

44. Correct or update provisioning if required and then go to [Step 84](#).

45. If alarm was an ISDN alarm, check provisioning of ISDN interface using the RTRV-ISDN-IF command. Is it correct?

Reference: **DLP-546**

If **YES**, then continue to the next step.  
If **NO**, then correct provisioning.

46. If alarm was an ISDN alarm, check provisioning of ISDN link using the RTRV-ISDN-LNK command. Is it correct?

Reference: **DLP-529**

If **YES**, then continue to the next step.  
If **NO**, then correct provisioning.

47. If alarm was a CAS alarm, check provisioning of CAS interface using the RTRV-CAS-IF command. Is it correct?

Reference: **DLP-546**

If **YES**, then continue to the next step.  
If **NO**, then correct provisioning.

48. If alarm was a CAS alarm, check provisioning of CAS line using the RTRV-CAS-LINE command. Is it correct?

Reference: **DLP-529**

If **YES**, then continue to the next step.  
If **NO**, then correct provisioning.

49. Is there is a problem with remote equipment?

If **YES**, then go to [Step 96](#).  
If **NO**, then go to [Step 95](#).

50. Check utilization of SS7 link using appropriate using appropriate test equipment.

51. Add more SS7 links if necessary and then go to [Step 84](#).

52. This indicates remote congestion between STP and SSP. Notify responsible personnel and then go to [Step 96](#).

53. Notify personnel at far-end and then go to [Step 96](#).

54. Check provisioning of PVC endpoints using RTRV-PVC-ENDPTVOIP and RTRV-PVC-ENTPTVOA commands.

Reference: **DLP-588** and **DLP-593**.

55. Corrected or update provisioning if required and then go to [Step 84](#).

56. Check provisioning of ISDN link and correct if required.

57. Ensure link is not in an out-of-service (OOS) state and then go to [Step 84](#).

58. Check provisioning of point codes (PCs) using the RTRV-PC command. Is provisioning correct?

Reference: **DLP-549**

If **YES**, then continue to the next step.

If **NO**, then correct provisioning.

59. Retrieve status of a point code using the RTRV-STATUS-PC command.

Reference: **DLP-641** for detailed information for the command.

Command Syntax: RTRV-STATUS-PC:[TID]:[<pcId>]:[CTAG];

Command Example: RTRV-STATUS-PC::2-2-2;

60. Analyze the retrieved information. Are the MTP layer 3 test on the point code (SS7PCSTARSLT) equal to “success”, the point code (SS7PCSTASTATE) equal to “Y” (active) and the congestion of PC (SS7PCSTACONG) equal to “PRIORITY0” (uncongested)?

If **YES**, then go to [Step 62](#).

If **NO**, then continue to the next step.

61. Determine why the PC test was unsuccessful or the PC is inactive or congested and correct.

62. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

- 63.** Has the alarm cleared?

Command Example: RTRV-ALM-ALL;

If **alarm is cleared**, then go to [Step 96](#).

If **alarm is NOT cleared**, then go to [Step 95](#).

- 64.** Ensure there are no IOM alarms. If there are IOM alarms, clear those first.

- 65.** Retrieve statistics for call control using the RTRV-STATS-CC command.

Reference: Reference **DLP-571** for detailed information.

Command Syntax: RTRV-STATS-CC:[TID]: [<COM>]: [CTAG];

Command Example: RTRV-STATS-CC;

- 66.** Analyze the retrieved information. Are there a large number of CFRTEUN (call failure, route unavailable) and/or CFRSRUN (call failure, resources unavailable) reported?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 68](#).

- 67.** Determine the reason and correct.

- 68.** Retrieve statistics for ISUP messages using the RTRV-STATS-ISUPMSG command.

Reference: Reference **DLP-536** for detailed information.

Command Syntax: RTRV-STATS-ISUPMSG:[TID]:<ss7Pc>:  
[CTAG];

Command Example: RTRV-PM-ISUPMSG::8-8-8;

- 69.** Analyze the retrieved information. Are the numbers of IAM,ACM, ANM and release messages fairly similar or is there a large disparity between them?

If **YES**, there is a similarity in numbers, then go to [Step 71](#).

If **NO**, numbers vary greatly, then continue to the next step.

- 70.** Determine the reason and correct.

- 71.** Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

72. Has the alarm cleared?

Command Example: RTRV-ALM-ALL;

If **alarm is cleared**, then go to [Step 96](#).

If **alarm is NOT cleared**, then go to [Step 95](#).

73. Ping the IAD (Integrated Access Device) between the Plexus and the gateway. Was ping successful?

If **YES**, then go to [Step 75](#).

If **NO**, then continue to the next step.

74. Is the IAD powered up and operational?

If **YES**, then continue to the next step.

If **NO**, then troubleshoot the IAD.

75. Is there a network problem?

If **YES**, then correct the network problem and go to [Step 84](#).

If **NO**, then go to [Step 84](#).

76. Has IOM with SS7 link switched to protection?

If **YES**, then correct problem with IOM. Reference TAP-101.

If **NO**, then continue to the next step.

77. Determine if the connection of an A-link to and STP has been lost, correct if required and then go to [Step 84](#).

78. Is there a problem with the T1 between the Plexus and the RDT?

If **YES**, then clear T1 faults first.

Reference: **TAP-101**

If **NO**, then continue to the next step.

79. Verify that the RDT is functioning properly.

80. Verify GR303 provisioning of the Plexus and the provisioning of the RDT is correct.

81. Verify that Voice Mail System (VMS) is operational.

If **YES** (operational), then continue to the next step.

If **NO** (not operational), notify appropriate personnel and go to [Step 96](#).

82. Verify VMS link provisioning using the RTRV-VMS-LNK command. Is it correct?

Reference: **DLP-646**

Command Syntax: RTRV-VMS-LNK:[TID]:[<vmsLnkAid>]:  
[CTAG];

Command Example: RTRV-VMS-LNK::1-1;

If **YES**, then continue to the next step.

If **NO**, correct provisioning using the ED-VMS-LNK command.

83. Verify VMS DS0 provisioning using the RTRV-VMS-CKTID command. Is it correct?

Command Syntax: RTRV-VMS-CKTID:[TID]:[<ds0Aid>]:[CTAG];

Command Example: RTRV-VMS-CKTID::IOM-1-T3-1-PORT-1-T0-1;

Reference: **DLP-646**

If **YES**, then continue to the next step.

If **NO**, correct provisioning using the ED-VMS-CKTID command.

84. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

85. Has the alarm cleared?

If **alarm is cleared**, then go to [Step 96](#).

If **alarm is NOT cleared**, then go to [Step 95](#).

86. Check the IP or the ENET end point configuration to ensure that it matches the router.

Command Example: RTRV-ENET-ENDPTVOIP::IOM-8-PVC-1;

If **incorrect**, correct provisioning and then go to [Step 96](#).

If **correct**, then continue to the next step.

87. Verify that the far-end equipment is operational and provisioned correctly.

88. Verify that the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command.  
Refer to [Step 8](#).

89. Has the alarm cleared?

If **alarm is cleared**, then go to [Step 96](#).

If **alarm is NOT cleared**, then go to [Step 95](#).

90. Contact the personnel at the location of the EMS server to determine if there is a problem with the EMS server?

If **YES, there is a problem with the EMS server**, then go to [Step 96](#).

If **NO**, then continue to the next step.

91. Determine if there is a network problem such as cabling or routing?

If **YES**, then correct the network problem and go to [Step 96](#).

If **NO**, then go to [Step 95](#).



**Note:** MGCP based IADs, a SIP based feature server, or an ISDN based piece of equipment is overloading the Plexus and has caused the alarm that has brought you to these steps. You will have to isolate which devices are sending all the signaling messages.

92. Determine which device is causing the problem and correct the problem at that equipment.

93. Determine if the alarm has cleared.

If using **EMS**, check alarms. Refer to [Step 5](#).

If using **TL1**, retrieve alarms by using the RTRV-ALM-<ReptAid> command. Refer to [Step 8](#).

94. Has the alarm cleared?

If **alarm is cleared**, then go to [Step 96](#).

If **alarm is NOT cleared**, then go continue to the next step.

95. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

96.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**NOTES:**



## 5.1 DLPS IN NUMERICAL ORDER

| NUMBER  | TITLE NAME                                                                                  |
|---------|---------------------------------------------------------------------------------------------|
| DLP-504 | Establish a Telnet Session                                                                  |
| DLP-507 | Replace a Fan Shelf                                                                         |
| DLP-508 | Replace the Fan Filter                                                                      |
| DLP-511 | Upgrade an I/O Module                                                                       |
| DLP-512 | Replace/Upgrade a System Processor                                                          |
| DLP-513 | Replace Switch Fabric Module                                                                |
| DLP-514 | Module Installation or Removal                                                              |
| DLP-515 | Replace a Faulted DS1 or DS3 IOM                                                            |
| DLP-516 | Connect the Plexus 9000 to a Craft Terminal                                                 |
| DLP-532 | Perform Loopbacks                                                                           |
| DLP-534 | Retrieve Stats, PM Data and Initialize Registers for ISDN Messages                          |
| DLP-535 | Replace a Module, Fan or Fan Filter                                                         |
| DLP-536 | Retrieve Stats, PM Data and Initialize Registers for ISUP Messages                          |
| DLP-537 | Provision T1 Registers and Thresholds and Retrieve PM Data                                  |
| DLP-538 | Provision T3 Registers and Thresholds and Retrieve PM Data                                  |
| DLP-544 | Provision or Check IP Addresses                                                             |
| DLP-554 | Remove or Restore Modules From/To Service                                                   |
| DLP-555 | Log Commands                                                                                |
| DLP-556 | Allow or Inhibit Loopbacks                                                                  |
| DLP-560 | Save or Restore System Configuration File                                                   |
| DLP-561 | Provision PM Day                                                                            |
| DLP-568 | Retrieve Alarms or Conditions                                                               |
| DLP-569 | Test Using the Monitor Test Jacks                                                           |
| DLP-571 | Retrieve Stats, PM Data and Initialize Registers for Call Control                           |
| DLP-595 | Edit States of ISDN B Channel, Interface, SS7 link set or Signaling Link                    |
| DLP-596 | Retrieve Status of SS7 Linkset, Retrieve PM Data of Linkset Or Initialize Linkset Registers |
| DLP-606 | Capturing Signaling                                                                         |
| DLP-609 | Retrieve or Delete Alarm Queue                                                              |
| DLP-610 | Provision and Schedule System Backup                                                        |
| DLP-611 | Allow, Inhibit or Schedule Failovers                                                        |
| DLP-612 | Operate a Circuit Query or Validation Test                                                  |
| DLP-613 | Switch ISDN D Channel to Protection                                                         |
| DLP-614 | Trace Call                                                                                  |
| DLP-615 | Capturing Calls                                                                             |
| DLP-616 | Generate or Retrieve SECULOG                                                                |
| DLP-621 | Change I/O Module Software Version                                                          |
| DLP-624 | Retrieve Status of Media Gateway and Voice Server IOMs                                      |

| <b>NUMBER</b> | <b>TITLE NAME</b>                                                                               |
|---------------|-------------------------------------------------------------------------------------------------|
| DLP-626       | Retrieve COT or CFV for a Subscriber                                                            |
| DLP-631       | Retrieve RDT Layer 2 and 3 timers                                                               |
| DLP-635       | Retrieve Signaling Layer2/3 Status, PM Data and Initialize Registers                            |
| DLP-636       | Retrieve PM Data For SS7 Route and Initialize Registers                                         |
| DLP-640       | Retrieve SS7 Route Status and PM Data and Initialize SS7 Route Registers                        |
| DLP-641       | Retrieve Point Code Status and DPC PM Data and Initialize DPC Registers                         |
| DLP-642       | Retrieve Signaling Link Status and PM Data and Initialize Registers                             |
| DLP-643       | Retrieve Status of GR303 Interface Group and CRV                                                |
| DLP-644       | Retrieve PM Data of SIP Messages                                                                |
| DLP-645       | Retrieve Status for TDM, ATM and Packet Terminations                                            |
| DLP-647       | Retrieve ISDN Status                                                                            |
| DLP-652       | Retrieve ENET Stats                                                                             |
| DLP-653       | Retrieve PM Data and Set/Retrieve Thresholds for VCC                                            |
| DLP-654       | Retrieve PM Data and Set/Retrieve Thresholds for Voice Processors                               |
| DLP-666       | Provision GMSC Registers and Retrieve PM Data                                                   |
| DLP-667       | Replace a Network Access or Voice Server IOM                                                    |
| DLP-670       | Retrieve PM Data and Initialize registers for Voice Mail System                                 |
| DLP-571       | Retrieve PM Data and Initialize registers for Release Causes                                    |
| DLP-572       | Retrieve Failure Conditions or Fraud Call Details, Release a Call and Verify a Translation Plan |
| DLP-573       | Retrieve PM Data and Initialize registers for LAPD Message Statistics                           |

## 5.2 DLPS BY TASK GROUPS

| NUMBER                                               | TITLE NAME                                                               |
|------------------------------------------------------|--------------------------------------------------------------------------|
| <b>Connections</b>                                   |                                                                          |
| DLP-516                                              | Connect the Plexus 9000 to a Craft Terminal                              |
| DLP-504                                              | Establish a Telnet Session                                               |
| DLP-544                                              | Provision or Check IP Addresses                                          |
|                                                      |                                                                          |
| <b>Remove and Replace</b>                            |                                                                          |
| DLP-621                                              | Change I/O Module Software Version                                       |
| DLP-514                                              | Module Installation or Removal                                           |
| DLP-554                                              | Remove or Restore Modules                                                |
| DLP-507                                              | Replace Fan Shelf                                                        |
| DLP-508                                              | Replace Fan Filter                                                       |
| DLP-515                                              | Replace a Faulted DS1 or DS3 IOM                                         |
| DLP-535                                              | Replace a Module, Fan or Fan Filter                                      |
| DLP-667                                              | Replace a Network Access or Voice Server IOM                             |
| DLP-513                                              | Replace Switch Fabric Module                                             |
| DLP-512                                              | Replace/Upgrade a System Processor                                       |
| DLP-560                                              | Save or Restore System Configuration File                                |
| DLP-511                                              | Upgrade an I/O Module                                                    |
|                                                      |                                                                          |
| <b>Test</b>                                          |                                                                          |
| DLP-556                                              | Allow or Inhibit Loopbacks                                               |
| DLP-611                                              | Allow, Inhibit or Schedule Failovers                                     |
| DLP-615                                              | Capturing Calls                                                          |
| DLP-606                                              | Capturing Signaling                                                      |
| DLP-612                                              | Operate a Circuit Query or Validation Test                               |
| DLP-532                                              | Perform Loopbacks                                                        |
| DLP-569                                              | Test Using the Monitor Test Jacks                                        |
| DLP-614                                              | Trace Call                                                               |
|                                                      |                                                                          |
| <b>Provision Schedules, Registers and Thresholds</b> |                                                                          |
| DLP-595                                              | Edit States of ISDN B Channel, Interface, SS7 link set or Signaling Link |
| DLP-616                                              | Generate or Retrieve SECULOG                                             |
| DLP-555                                              | Log Commands                                                             |
| DLP-610                                              | Provision and Schedule System Backup                                     |
| DLP-666                                              | Provision GMSC Registers and Retrieve PM Data                            |
|                                                      |                                                                          |
| DLP-561                                              | Provision PM Day                                                         |
| DLP-537                                              | Provision T1 Registers and Thresholds and Retrieve PM Data               |

| <b>NUMBER</b>     | <b>TITLE NAME</b>                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------|
| DLP-538           | Provision T3 Registers and Thresholds and Retrieve PM Data                                      |
| DLP-613           | Switch ISDN D Channel to Protection                                                             |
|                   |                                                                                                 |
| <b>Retrievals</b> |                                                                                                 |
| DLP-568           | Retrieve Alarms or Conditions                                                                   |
| DLP-626           | Retrieve COT or CFV for a Subscriber                                                            |
| DLP-652           | Retrieve ENET Stats                                                                             |
| DLP-572           | Retrieve Failure Conditions or Fraud Call Details, Release a Call and Verify a Translation Plan |
| DLP-647           | Retrieve ISDN Status                                                                            |
| DLP-609           | Retrieve or Delete Alarm Queue                                                                  |
| DLP-573           | Retrieve PM Data and Initialize registers for LAPD Message Statistics                           |
| DLP571            | Retrieve PM Data and Initialize registers for Release Causes                                    |
| DLP-670           | Retrieve PM Data and Initialize registers for Voice Mail System                                 |
| DLP-653           | Retrieve PM Data and Set/Retrieve Thresholds for VCC                                            |
| DLP-654           | Retrieve PM Data and Set/Retrieve Thresholds for Voice Processors                               |
| DLP-636           | Retrieve PM Data For SS7 Route and Initialize Registers                                         |
| DLP-644           | Retrieve PM Data of SIP Messages                                                                |
| DLP-641           | Retrieve Point Code Status and DPC PM Data and Initialize DPC Registers                         |
| DLP-631           | Retrieve RDT Layer 2 and 3 timers                                                               |
| DLP-635           | Retrieve Signaling Layer2/3 Status, PM Data and Initialize Registers                            |
| DLP-642           | Retrieve Signaling Link Status and PM Data and Initialize Registers                             |
| DLP-640           | Retrieve SS7 Route Status and PM Data and Initialize SS7 Route Registers                        |
| DLP-571           | Retrieve Stats, PM Data and Initialize Registers for Call Control                               |
| DLP-534           | Retrieve Stats, PM Data and Initialize Registers for ISDN Messages                              |
| DLP-536           | Retrieve Stats, PM Data and Initialize Registers for ISUP Messages                              |
| DLP-645           | Retrieve Status for TDM, ATM and Packet Terminations                                            |
| DLP-643           | Retrieve Status of GR303 Interface Group and CRV                                                |
| DLP-624           | Retrieve Status of Media Gateway and Voice Server IOMs                                          |
| DLP-596           | Retrieve Status of SS7 Linkset, Retrieve PM Data of Linkset Or Initialize Linkset Registers     |
|                   |                                                                                                 |

## DLP-504 - ESTABLISH A TELNET SESSION

**SUMMARY:** This procedure provides the steps necessary establish a Telnet session to access the craft interface and use TL1 commands to provision or retrieve performance, status and alarm information.



**Note:** In this procedure the command syntax and examples are in **courier** font. The command verb and modifiers, TID and CTAG, appear in uppercase. [Square brackets] enclose a parameter that is optional and can be omitted. Variables appear in lowercase, in <angle brackets>, and require site-specific information. For example:

```
ENT-USER-SECU:[TID]::<uid>:[CTAG]::<pid>
```

Variable definitions except for TID and CTAG appear beneath each command. Default values are shown in **bold**. Integer ranges are shown within braces (i.e., {0 .. 100}).

The TID is the *target identifier* that is used to identify target network elements. The TID may consist of 1 to 20 ASCII characters.

The CTAG is the *correlation tag* that is used to correlate an input command with a corresponding response message. The CTAG is a decimal number of six characters or less.

The **COMPLD** message in the system response indicates that the command has executed successfully.

The **DENY** message in the system response indicates the command was not executed. This most commonly occurs when the input command was not entered correctly. You should verify the command syntax in the *TL1 Commands Reference Guide*, and then execute that command again.

1. The following information or equipment is required in order to complete this procedure.
  - IP addresses of both System Processors of the Plexus 9000
  - PC or laptop with Ethernet connectivity to the Plexus 9000
  - PC or laptop with an IP address
  - The PC or laptop with a VT100 emulation program (i.e., HyperTerminal)
  - DB-9 null modem (P/N 45-2XXX-1-0) cable for craft port connection if required
  - A known valid username and password for the Plexus 9000
2. Are the IP addresses of the Plexus 9000 known?

If **YES** then continue to the next step.

If **NO**, then determine the IP addresses with the RTRV-CHASSIS EQPT command.
3. Is the computer to be used and the Plexus 9000 connected to a LAN?

If **YES**, then continue to the next Step.

If **NO**, then connect a crossover Ethernet cable directly from the local computer to the Ethernet connector on the Plexus 9000 or connect a straight-through Ethernet cable from the Plexus 9000 to an Ethernet hub and LAN network. Refer to [Table A](#) for the pin-out of a crossover cable.

**Table A. CROSSOVER ETHERNET CABLE PIN ID**

| Pin         | Signal     | Pin         | Signal     |
|-------------|------------|-------------|------------|
| 1           | Transmit + | 3           | Receive +  |
| 2           | Transmit - | 6           | Receive -  |
| 3           | Receive +  | 1           | Transmit + |
| 6           | Receive -  | 2           | Transmit - |
| 4, 5, 7 & 8 | Not Used   | 4, 5, 7 & 8 | Not Used   |

4. Verify that the PC and the Plexus 9000 have IP connectivity by using the ping command followed by the correct IP address of the Plexus 9000. Example: ping 198.100.10.5↵.
5. Was the ping command successful?

If **YES**, then go to [Step 7](#).

If **NO**, then continue to the next step.



**Note:** If using Microsoft Windows, the winipcfg command can be used to verify the computer's IP and subnet. If no IP address has been assigned to the computer, follow the Windows help instructions to assign a "Private IP Address" for a simple network. If using a crossover cable, specify a static IP address for the computer that is on the same network as the attached Plexus 9000.

6. Verify that the client computer (your PC) has an IP address on the same network as the Plexus 9000 or that a gateway between them exists.
7. Telnet to the IP address of the active or working System Processor entering **2361** for Port and **VT100** for TermType if required.
8. Hit the escape key once (twice if necessary).
9. Was log in successful? Refer to [Figure 1](#) for an illustration of the login screen.

If **YES**, then continue to the next step.

If **NO**, then check cabling and IP addresses and go to [Step 7](#).

```
TELICA IPort 7 TL1 Agent 1999-2000 Telica Inc.

Telica>
```

**Figure 1. Craft-port Login Screen.**

10.



**YOU HAVE COMPLETED THIS PROCEDURE.**

**NOTES:**



## DLP-507 - REPLACE A FAN SHELF

**SUMMARY:** This procedure explains how to replace the fan shelf assembly. It is important that the shelf be replaced quickly to prevent the Plexus from overheating.



**Warning:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards*



**Caution:** *The fan tray should be replaced within one minute to prevent the switch from overheating.*

1. Inspect the fan shelf's shipping container for any visible signs of damage. Claims for damage incurred in shipment should be made to the transportation company involved, in accordance with the company instructions.
2. Open the box containing the fan shelf. Carefully remove the fan shelf and place it on a bench for easier inspection.



**Warning:** *Place an approved anti static wrist strap between your wrist and the ESD ground jack on the shelf before handling the fan shelf.*

3. Inspect the fan shelf assembly for concealed damage, such as broken wires, bent connector pins, shelf deformation, cracked indicators, etc. If the fan shelf assembly appears to be damaged, then call Telica for an RMA number and shipping instructions.
4. Remove the Escutcheon panel from the front top of the chassis as shown in [Figure 1](#).
5. Ensure the fan shelf assembly is free of packaging and easily accessible for quick and easy installation into chassis.



**Caution:** *The fan tray **MUST** be replaced within one minute to prevent the switch from overheating.*

**The fan shelf assembly must be free of packaging and easily accessible for quick and easy installation into chassis.**

6. Loosen the thumbscrews and disconnect fan tray from chassis by pulling the thumbscrews towards you to allow the fans to spin down.
7. Wait ten (10) seconds until the fans have completely stopped spinning and remove the fan shelf from the chassis and place the shelf to the side.

8. Slide the replacement fan shelf assembly into the chassis, as shown in [Figure 1](#) and connect.
9. Tighten the thumbscrews on the fan shelf assembly to secure in place.
10. Attach the front Escutcheon panel to the front top of the chassis as shown in [Figure 1](#).
11. Place the old shelf in the container for return to Telica.
12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

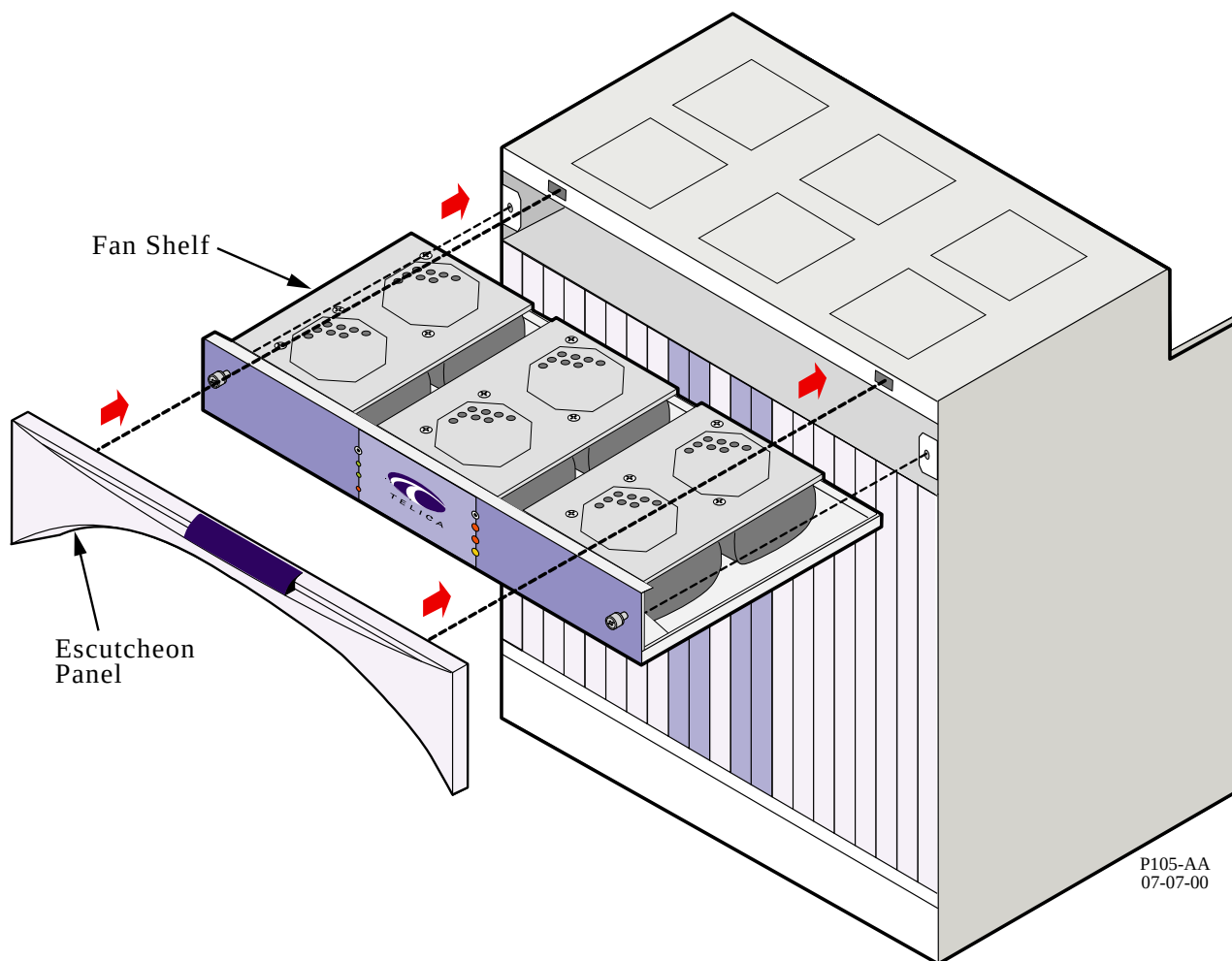


**Figure 1. Removing the Fan Shelf**

## DLP-508 - REPLACE THE FAN FILTER

**SUMMARY:** This procedure explains how to replace the fan filter. The fan filter should be replaced monthly.

1. Inspect the fan filter's shipping container for any visible signs of damage. Claims for damage incurred in shipment should be made to the transportation company involved, in accordance with the company instructions.
2. Open the box containing the filter, carefully remove the fan filter and place it on a bench for easier inspection.
3. Inspect the fan filter for concealed damage. If the fan filter appears to be damaged, then call Telica for an RMA number and shipping instructions.
4. Remove the fan filter grill cover from the front bottom of the chassis as shown in [Figure 1](#).
5. Slide the old fan filter out of the chassis very carefully to prevent loosening of filter debris. Refer to [Figure 1](#).
6. Insert the new fan filter into the chassis, as illustrated in [Figure 1](#).
7. Attach the fan filter grill cover to the front bottom of the chassis as shown in [Figure 1](#).
8.  **YOU HAVE COMPLETED THIS PROCEDURE.**

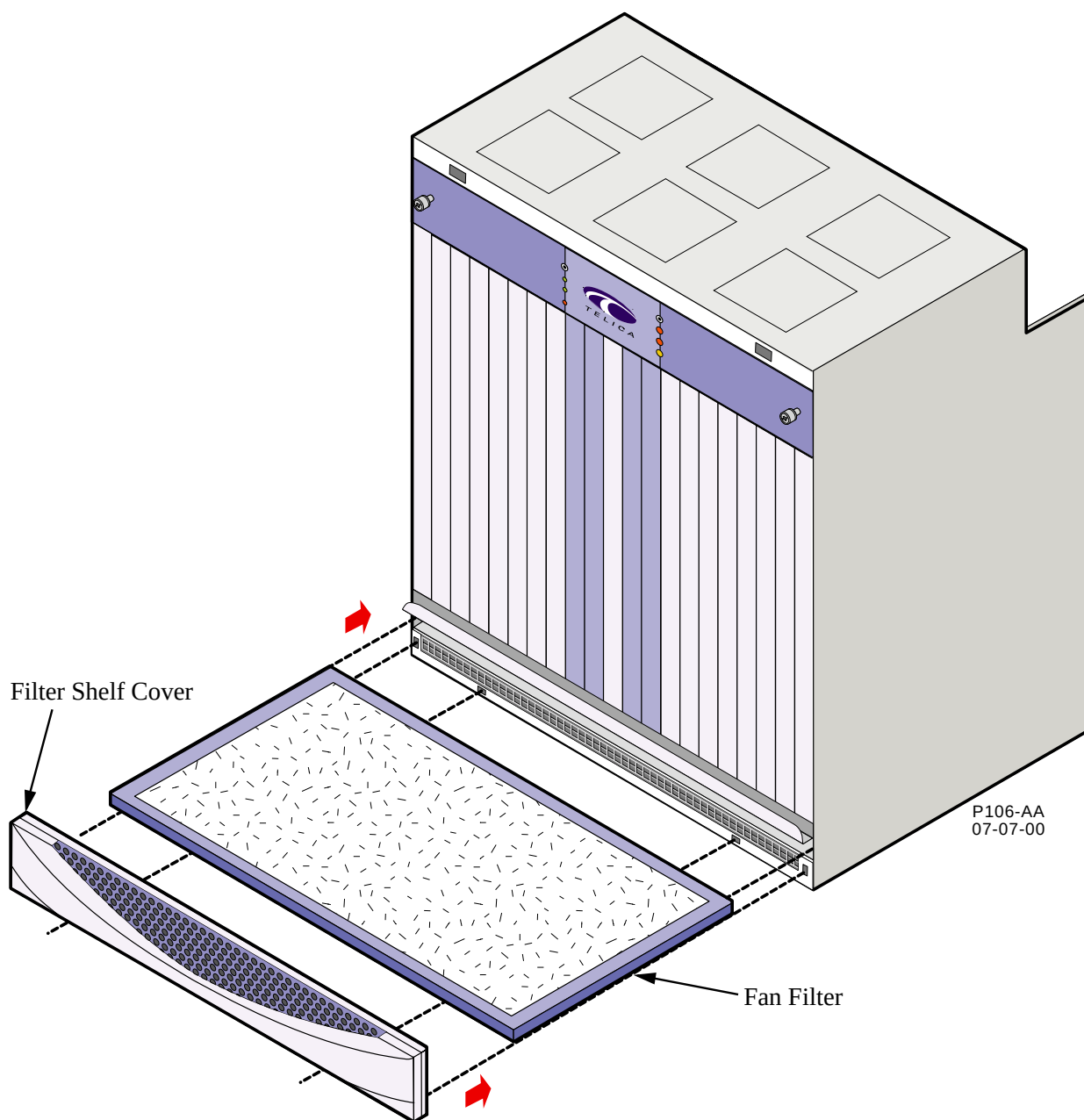


**Figure 1. Fan Filter Removal and Replacement**

## DLP-511 - UPGRADE AN I/O MODULE

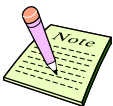
**SUMMARY:** This procedure provides steps to replace an unfaulted IOM with a newer version (i.e., Octal IOM with Octal\_2 IOM). You will be directed to call Telica Technical Services at 888-440-8354 or 888-440-TELI to find out if you can update the IOM software using the CPY-MEM command or if Technical Services must assist you in performing upgrade.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**DANGER:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards. A wrist strap and cord were included in Accessory Kit box that was shipped with the chassis.*



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - IOM to be replaced, its part number and its slot number
  - Part number of replacement IOM
2. Familiarize yourself with the installation and removal of circuit cards.

Reference:   **DLP-514**
3. If you are not logged into the Plexus, connect a craft terminal or telnet to the Plexus 9000 and log in or use EMS.

Reference:   **DLP-516** – Connect the Plexus 9000 to a Craft Terminal

Reference:   **DLP-504** - Establish a Telnet Session

4. Make test calls of different types to verify that the number of answered calls increments.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-STATS-CC command and go to [Step 6](#).

Command Example: **RTRV-STATS-CC::COM;**

5. Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Then select *View, Stats* and click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).

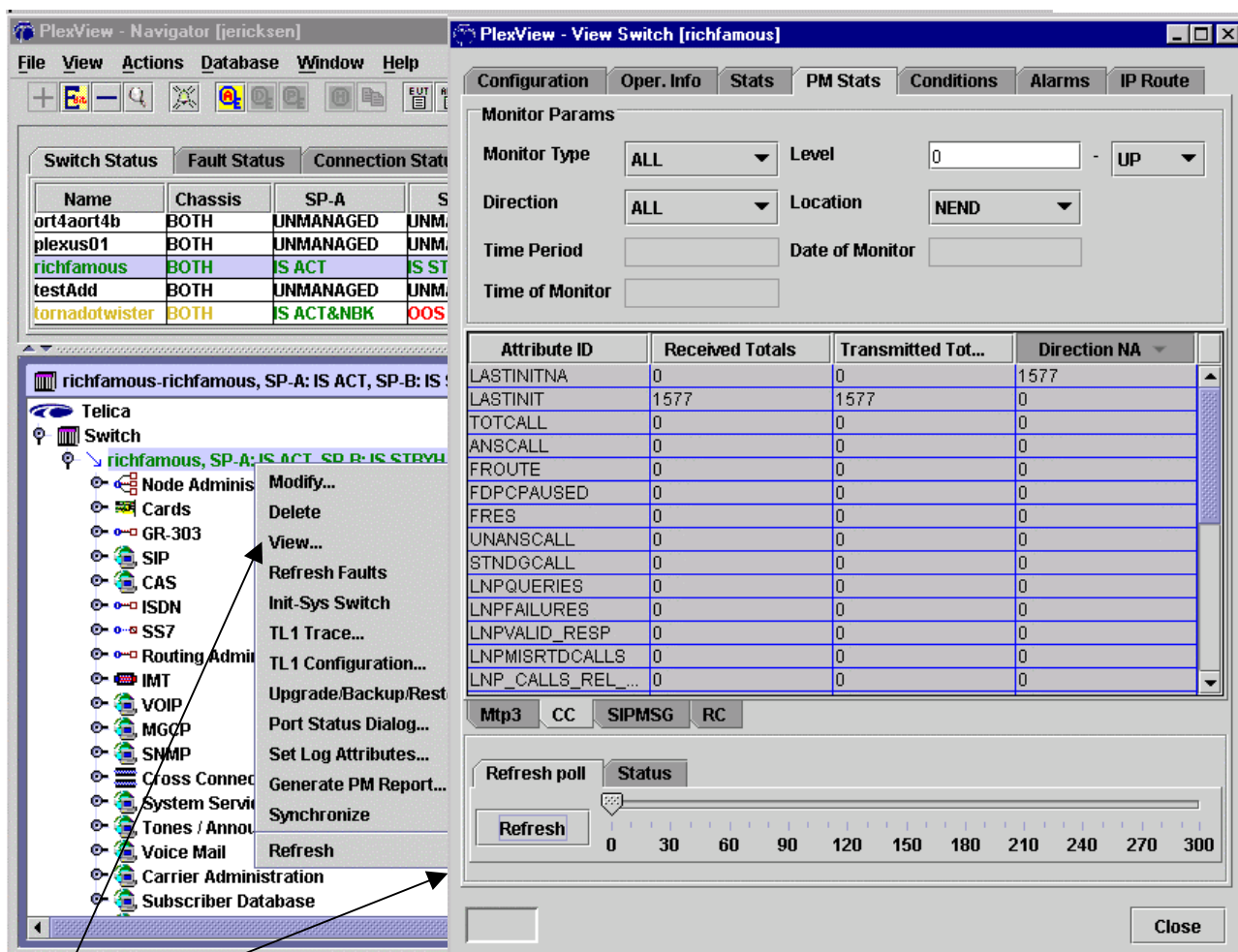


Figure 1. Call Control Stats

6. Are you able to make calls and is Plexus operating satisfactorily?

If **YES**, go to [Step 9](#).

If **NO**, then continue to the next step.

7. Troubleshoot and correct problems before upgrading software.

8.  **YOU HAVE COMPLETED THIS PROCEDURE.**
9. Select your task from the following and go to the indicated step.
- Replace a protected IOM ..... [Step 11](#)
  - Replace an unprotected IOM..... [Step 53](#)
  - Finished, no other task in the above list..... continue to the next step.

10.  **YOU HAVE COMPLETED THIS PROCEDURE.**

11. Look at the part number next to the top ejector handle on the front of the replacement module and the protection module.
12. Is the part number of the protection module equal to or greater than the replacement module? For DS3 IOMs, refer to [Table A](#). Octal DS3 IOMs can provide protection for triple DS3 IOMs.

If **YES**, then go to [Step 28](#).

If **NO**, then continue to the next step.

**Table A.**

| Description                                                                                     | Part Number | CLEI       |
|-------------------------------------------------------------------------------------------------|-------------|------------|
| Triple DS3 only Front                                                                           | 89-0365-A   | BA9IX70AAA |
|                                                                                                 | 89-0365-B   | BA9IX70AAB |
| Triple DS3/STS1 Front                                                                           | 89-0365-C   | BA9IX72AAA |
| Triple DS3 or STS1 Front                                                                        | 89-0397-A   | BA9IX04AAA |
| Triple DS3 Front with tone detection                                                            | 89-0410-A   | BA4A60ZFAA |
| Triple DS3 only Front                                                                           | 89-0422-A   | BA9AWV0FAA |
| Triple DS3 only Front with tone detection                                                       | 89-0424-A   | BA9AWX0FAA |
|                                                                                                 |             |            |
| Octal DS3 Front                                                                                 | 89-0382-A   | BAA9UV0GAA |
|                                                                                                 | 89-0382-B   | BAA9UVZGAA |
| Octal DS3/STS1 Front                                                                            | 89-0398-A   | BA9UVXGAA  |
| Octal DS3/STS1 Front with tone detections                                                       | 89-0411-A   | BA4A701FAA |
| Octal DS3 only Front                                                                            | 89-0423-A   | BA9AXW0FAA |
| Octal DS3 only Front with tone detection                                                        | 89-0425-A   | BA9AXY0FAA |
| <b>Note:</b> Shaded part numbers have been “manufacture discontinued,” but are still supported. |             |            |



**Note:** The following steps will replace a protection IOM with a newer version.

13. Remove the protection IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 15](#).

Command Syntax: `RMV-EQPT:[TID]:<equipmentId>:[CTAG];`

Command Example: **RMV-EQPT::IOM-5;**

14. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#).

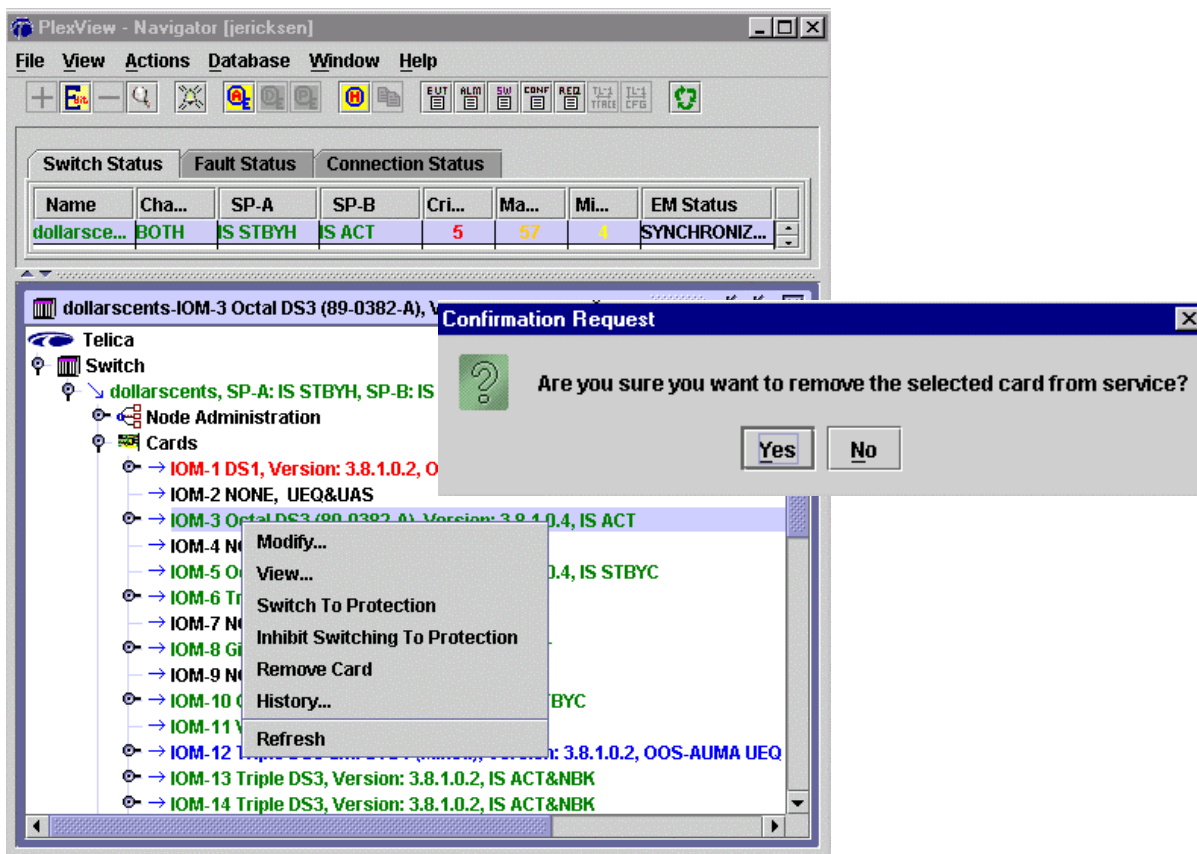


Figure 2. Removing a Module

15. Loosen the top and bottom screws of the protection IOM and then remove it.



16. Install the replacement protection module into the slot. Then tighten screws and check to ensure that the front is securely installed.

Comment: The IOM will enter its power-up and initialization routines. This will take several minutes. If the replacement IOM has the same software revision level and CLEI code, the IOM will begin operation.

17. Wait for the module to complete initialization. This can take several minutes.

18. Retrieve information about the IOM and note the CLEI and software version.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-INFO-EQPT command and go to [Step 20](#).

Command Example: **RTRV-INFO-EQPT::IOM-5;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,
<portCount>,<externalFaults>,<internalFaults>,
<inService>:<memFree>,<memUsed>,<nvMemFree>,
<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],
[<rearHwVersion>],[<rearSerialNumber>],[<prtg>"
;
```

Comment: The *prtg* parameter is not available in all software versions.

19. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Oper. Info*. Note the CLEI and software version. Refer to [Figure 3](#).
20. Retrieve provisioned information about the IOM using the RTRV-EQPT command and note CLEI (moduletype) and software version.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-EQPT command and go to [Step 22](#).

Command Example: **RTRV-EQPT::IOM-5;**

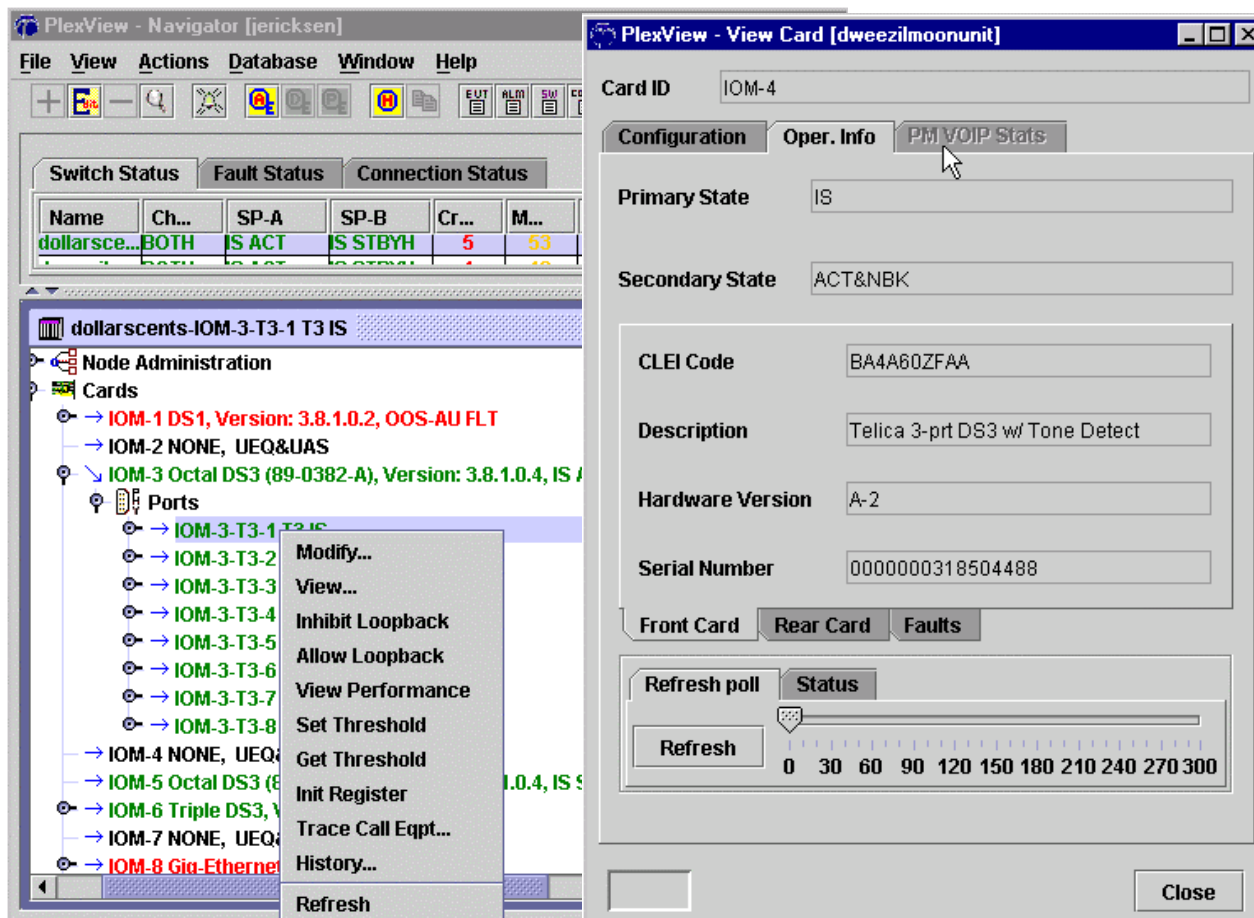


Figure 3. Retrieving Module Information

21. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View*. Note the CLEI and software version. Refer to [Figure 4](#).

22. Are the CLEI and/or software versions different?

If they are the same then go to [Step 24](#).

If **only** CLEI codes are different, then continue to the next step.

If the **software versions** are different, then go to **DLP-621** to correct software versions before continuing to [Step 24](#).

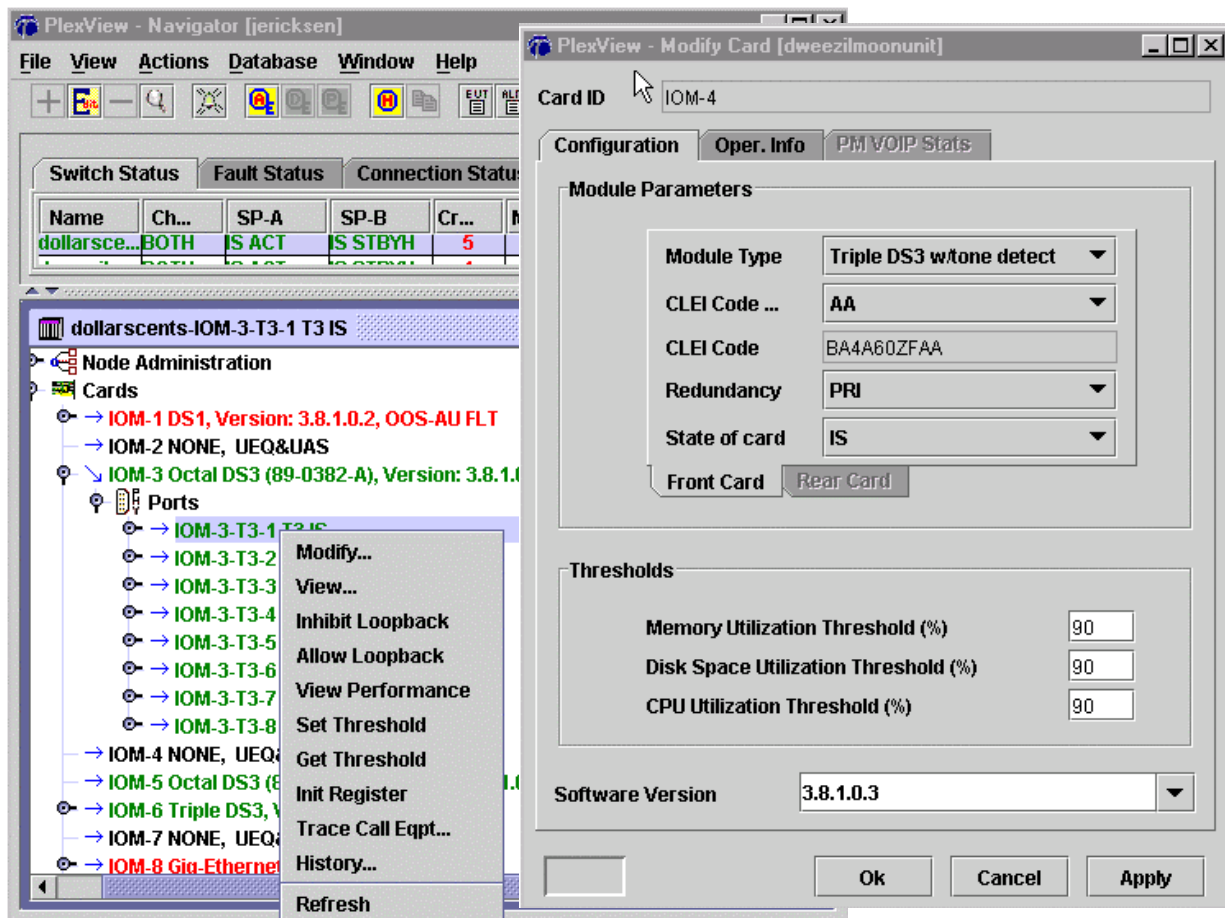


Figure 4. Retrieving Module Configuration

23. Change the provisioned CLEI to the module CLEI.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the ED-EQPT command and go to [Step 25](#).

Command Syntax: ED-EQPT::IOM-{1. . . 17}:[CTAG]::  
IOMODULETYPE=<ioModuleType>;

Command Example: ED-EQPT::IOM-3::IOMODULETYPE=  
BA9UVXGAA;

24. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Modify*. Change the CLEI and then select *Ok* or *Apply*. Refer to [Figure 5](#).

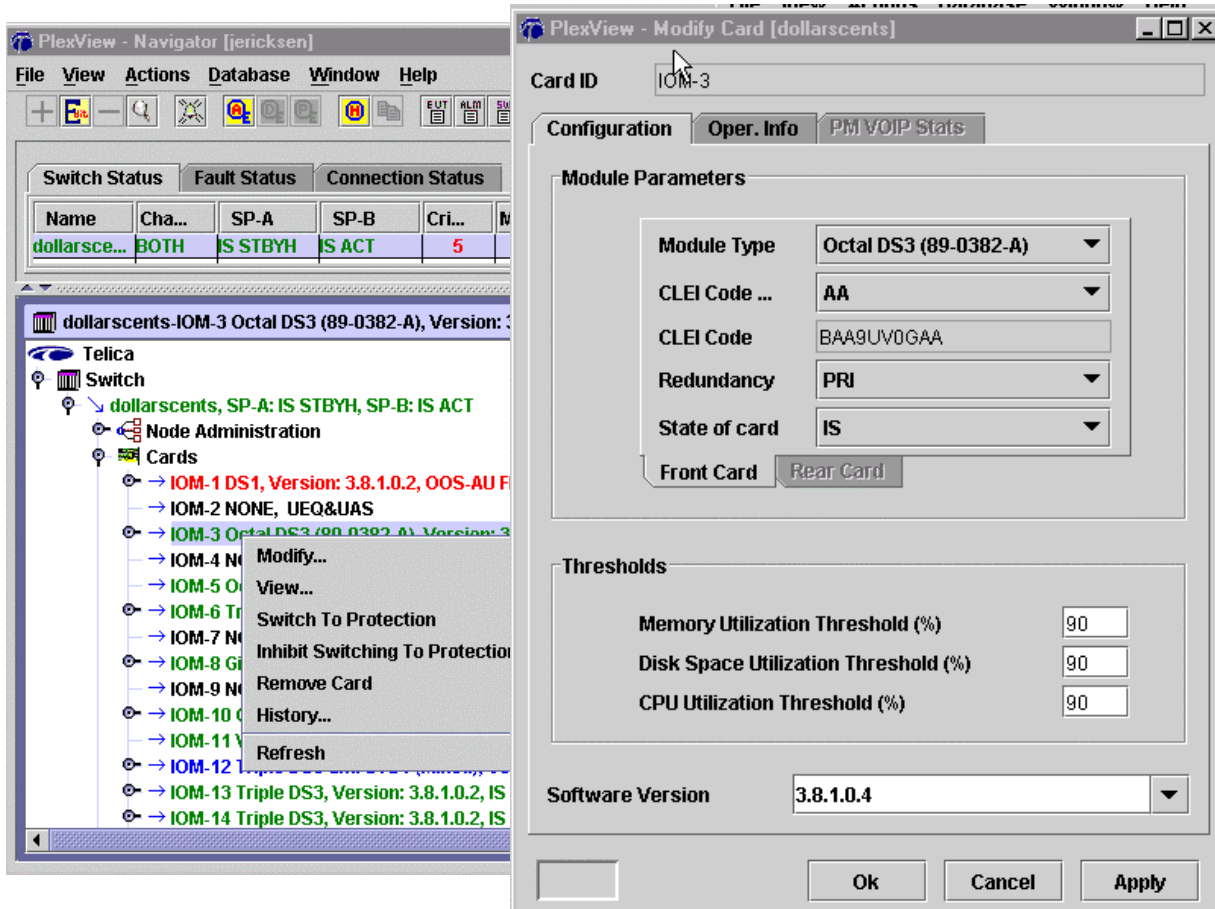


Figure 5. Modifying Module Configuration

25. Retrieve information about the IOM

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-EQPT command and go to [Step 27](#).

Command Example: RTRV-EQPT : : IOM-4 ;

26. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select View. Refer to [Step 21](#) and [Figure 4](#).

27. Is the state of the protection IOM now STBYC?

If **YES**, then continue to the next step.

If **NO** and **less than 5 minutes** has passed, then go to [Step 24](#) and repeat.

If **NO** and **over 5 minutes** has passed, then go to [Step 70](#).



**Note:** The following steps will switch and lock the working IOM to protection, replace the IOM and then allow it the switch back to the working IOM.

28. Switch the IOM to be replaced to protection.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the **SW-TOPROTN-EQPT** command and go to [Step 30](#).

Command Example: **SW-TOPROTN-EQPT::IOM-4;**

Response:

```
telica 2003-02-16 16:20:28
M 0 COMPLD
/* SW-TOPROTN-EQPT */
;
```

Autonomous Response:

```
telica 2003-02-16 16:20:30
A 1 REPT EVT EQPT
"IOM-1:NORMAL,TC,02-16,16-20-30,,,,,:\"Module in
slot 4 failed over to slot 5\""
```

29. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM, select *Modify* and then select *Switch to Protection*. A confirmation screen will appear. Select *Yes* to switch to protection. Refer to [Figure 6](#).

30. Inhibit the protection IOM from switching to the working IOM being replaced

If using **EMS**, then continue to the next step.

If using **TL1**, execute the **INH-SWTOWKG-EQPT** command and then go to [Step 32](#).

Command Example: **INH-SWTOWKG-EQPT::IOM-4**

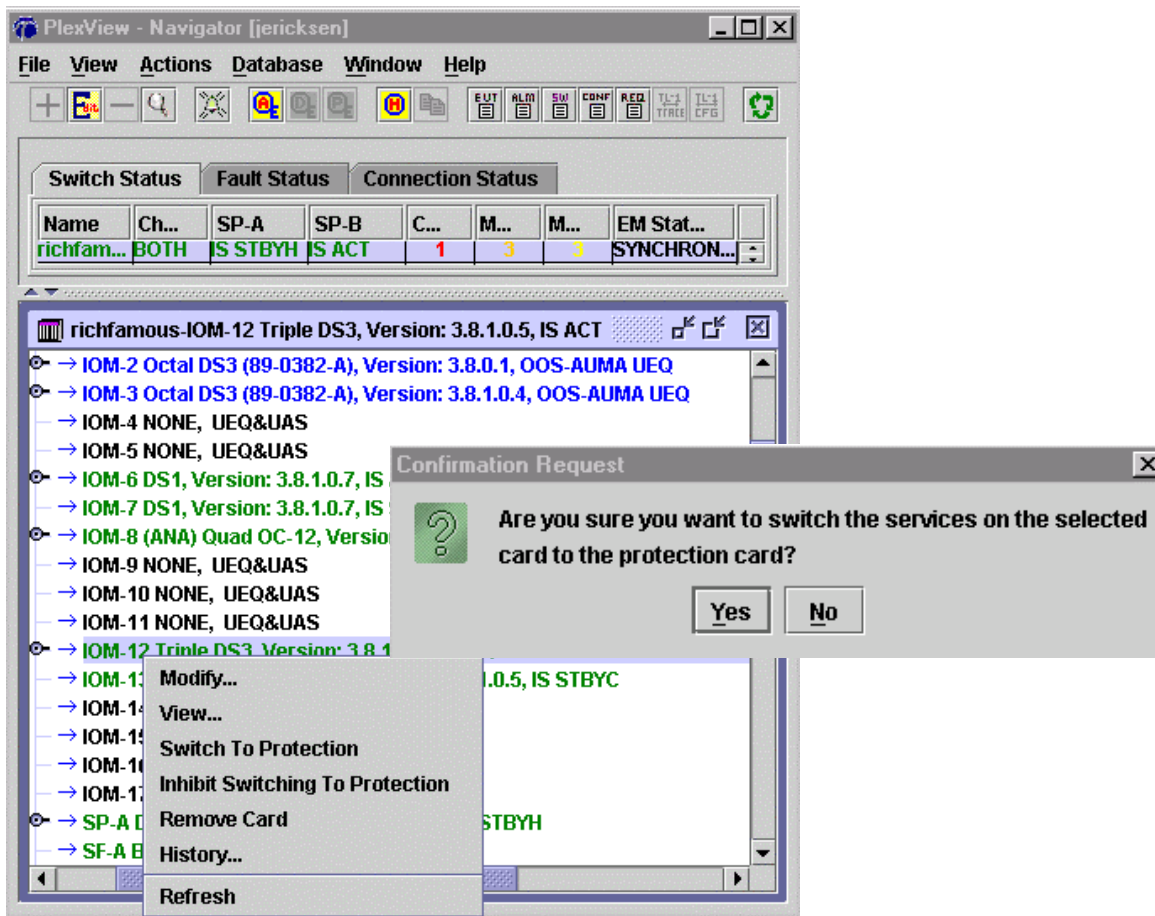


Figure 6. Switch to Protection

31. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM, select *Modify* and then select *Switch to Protection*. A confirmation screen will appear. Select *Yes* to switch to protection. Refer to [Figure 7](#).

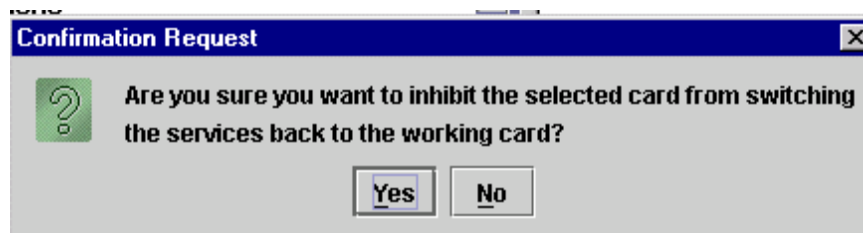


Figure 7. Inhibit Switch to Protection

32. Ensure the protection IOM is now the working IOM

If using **EMS**, then retrieve IOM information. Refer to [Step 21](#) and [Figure 4](#).

If using **TL1**, then execute the using the RTRV-EQPT command.

33. Is the protection IOM now in an IS WRK state and the IOM to be replaced in an OOS MA state?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 51](#).

34. Loosen the top and bottom screws of the installed IOM and then remove it.
35. Install the replacement module into the slot. Then tighten screws and check to ensure that the front is securely installed.

Comment: The IOM will enter its power-up and initialization routines. This will take several minutes. If the replacement IOM has the same software revision level and CLEI code, the IOM will begin operation.

36. Wait for the module to complete initialization. This can take several minutes.
37. Retrieve information about the IOM

If using **EMS**, then retrieve IOM information. Refer to [Step 19](#) and [Figure 3](#).

If using **TL1**, then execute the using the RTRV-INFO-EQPT command and note the CLEI and software version.

Command Example: **RTRV-INFO-EQPT::IOM-4;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,
<portCount>,<externalFaults>,<internalFaults>,
<inService>:<memFree>,<memUsed>,<nvMemFree>,
<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],
[<rearHwVersion>],[<rearSerialNumber>], [<prtg>"
;
```

Comment: The *prtg* parameter is not available in all software versions.

38. Retrieve provisioned information about the IOM

If using **EMS**, then retrieve information. Refer to [Step 21](#) and [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command and note CLEI and software version.

Command Example: **RTRV-EQPT::IOM-4;**



39. Are the CLEI and/or software versions different?

If they are the same then go to [Step 41](#).

If **only** CLEI codes are different, then continue to the next step.

If the **software versions** are different, then go to **DLP-621** to correct software version before continuing to [Step 41](#).

40. Change the provisioned CLEI to the module CLEI

If using **EMS**, then change CLEI. Refer to [Step 24](#) and [Figure 5](#).

If using **TL1**, then execute the ED-EQPT command.

Command Syntax: ED-EQPT::IOM-{1 . . . 17}:[CTAG]::  
IOMODULETYPE=<ioModuleType>;

Command Example: ED-EQPT::IOM-3::IOMODULETYPE=  
BA9UVXGAA;

41. Retrieve information about the IOM.

If using **EMS**, then retrieve information. Refer to [Step 21](#) and [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command using the RTRV-EQPT command and.

Command Example: **RTRV-EQPT::IOM-4;**

42. Is the IOM in a state with no faults?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 51](#).

43. Switch the protection IOM back to the working IOM

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RST-EQPT command and then go to [Step 45](#).

Command Example: **RST-EQPT::IOM-5;**

Response:

```
telica 2003-02-16 16:20:28
M 0 COMPLD
/* RST-EQPT */
;
```

44. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module.

45. Wait for the module to initialize.



46. Retrieve information about the IOM.

If using **EMS**, then retrieve information. Refer to [Step 21](#) and [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command using the RTRV-EQPT command and.

Command Example: **RTRV-EQPT::IOM-4;**

47. Is the state of replaced IOM now IS and the protection IOM now STBYC?

If **YES**, then continue to the next step.

If **NO and less than 5 minutes has passed**, then go to [Step 46](#) and repeat.

If **NO and over 5 minutes has passed**, then go to [Step 51](#).

48. Make test calls of different types and execute the RTRV-STATS-CC command to verify that the number of answered calls increments.

Command Example: **RTRV-STATS-CC::COM;**

49. Are you able to make calls and is Plexus operating satisfactorily?

If **YES**, then go to [Step 9](#).

If **NO**, then continue to the next step.

50. Troubleshoot and correct problems and go to [Step 9](#).

51. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

52.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The following steps will replace an unprotected IOM with a newer version.



**Caution:** *Removing an unprotected IOM will disrupt traffic on that IOM.*

53. Remove the IOM from service with the RMV-EQPT command.

Command Syntax: **RMV-EQPT:[TID]:<equipmentId>:[CTAG];**

Command Example: **RMV-EQPT::IOM-1;**

54. Loosen the top and bottom screws of the installed IOM and then remove it.

55. Install the replacement module into the slot. Then tighten screws and check to ensure that the front is securely installed.

Comment: The IOM will enter its power-up and initialization routines. This will take several minutes. If the replacement IOM has the same software revision level and CLEI code, the IOM will begin operation.

56. Wait for the module to complete initialization. This can take several minutes.
57. Retrieve information about the IOM using the RTRV-INFO-EQPT command and note the CLEI and software version.

Command Example: **RTRV-INFO-EQPT::IOM-4;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,<portCount>
',
<externalFaults>,<internalFaults>,<inService>:<memFree>
>,
<memUsed>,<nvMemFree>,<nvMemUsed>,<spAveBusy>:[<rearCle
i>],[<rearDesc>],[<rearHwVersion>],[<rearSerialNumber>
>],[<prtgt>"
;
```

Comment: The *prtgt* parameter is not available in all software versions.

58. Retrieve provisioned information about the IOM using the RTRV-EQPT command and note CLEI and software version.

Command Example: **RTRV-EQPT::IOM-4;**

59. Are the CLEI and/or software versions different?

If they are the same then go to [Step 61](#).

If **only** CLEI codes are different, then continue to the next step.

If the **software versions** are different, then go to **DLP-621** to correct software version before continuing to [Step 61](#).

60. Change the provisioned CLEI to the module CLEI using the ED-EQPT command.

Command Syntax: **ED-EQPT::IOM-{1. . . 17}: [CTAG]::  
IOMODULETYPE=<ioModuleType>;**

Command Example: **ED-EQPT::IOM-3::IOMODULETYPE=  
BA9UVXGAA;**

61. Retrieve information about the IOM using the RTRV-EQPT command and.  
Command Example: **RTRV-EQPT::IOM-4;**
62. Is the IOM in a state with no faults?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 70](#).
63. Wait for the module to initialize.
64. Restore the IOM to service with the RST-EQPT command.  
Command Syntax: **RST-EQPT:[TID]:<equipmentId>:[CTAG];**  
Command Example: **RST-EQPT::IOM-1;**
65. Check status of card using the RTRV-EQPT command.  
Command Example: **RTRV-EQPT::IOM-4;**
66. Is the state of replaced IOM now IS and the protection IOM now STBYC?  
If **YES**, then continue to the next step.  
If **NO and over 5 minutes has passed**, then go to [Step 70](#), else go to [Step 65](#) and repeat.
67. Make test calls of different types.  
If using **EMS**, then make test calls. Refer to [Step 5](#) and [Figure 1](#).  
If using **TL1**, then execute the RTRV-STATS-CC command to verify that the number of answered calls increments.  
Command Example: **RTRV-STATS-CC::COM;**
68. Are you able to make calls and is Plexus operating satisfactorily?  
If **YES**, then go to [Step 9](#).  
If **NO**, then continue to the next step.
69. Troubleshoot and correct problems and go to [Step 9](#).
70. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.
71.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**Table B. CLEI CODES OF FRONT I/O MODULES**

| <b>Part Number</b>                                                                              | <b>Name</b>                                                                                           | <b>CLEI Code</b>  |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------|
| 89-0360-A                                                                                       | DS-1 Front Module                                                                                     | BA9IAA0AAA        |
| 89-0361-A                                                                                       | DS-3 Rear Module                                                                                      | BA9IB80AAA        |
| 89-0362-A                                                                                       | DS-1 Rear I/O Module                                                                                  | BA9IBC0AAA        |
| 89-0362-B                                                                                       |                                                                                                       | BA9IBC0AAB        |
| 89-0365-A                                                                                       | DS-3 Front Module                                                                                     | BA9IY70AAA        |
| 89-0365-B                                                                                       |                                                                                                       | BA9IY70AAB        |
| 89-0365-C                                                                                       |                                                                                                       | BA9IY72AAA        |
| 89-0382-A                                                                                       | Octal DS-3/STS-1 Front Module Revision B module is supported by software revision 3.1.1.2 or greater. | BAA9UV0GAA        |
| 89-0382-B                                                                                       |                                                                                                       | <b>BAA9UVZGAA</b> |
| 89-0388-A                                                                                       | Quad OC12c ATM Network Adapter Module                                                                 | BAA91Z0GAA        |
| 89-0388-B                                                                                       | Quad OC3/OC12c ATM Network Adapter Module                                                             | BAA91Z0GAB        |
| 89-0388-C                                                                                       |                                                                                                       | BAA91Z0GAC        |
| 89-0390-A                                                                                       | Ethernet Network Access Module                                                                        | BA2A30TGAA        |
| 89-0393-A                                                                                       | Quad OC12c Packet Network Adapter Module                                                              | BA1AAA0AAA        |
| 89-0393-B                                                                                       |                                                                                                       | BA1AAA0AAB        |
| 89-0395-A                                                                                       | 2688 Channel Voice Server Module                                                                      | BA1AY60AAA        |
| 89-0395-B                                                                                       |                                                                                                       | BA1AX60AAB        |
| 89-0396-A                                                                                       | E1 Front Module                                                                                       | BA2AV30GAA        |
| 89-0397-A                                                                                       | Triple DS-3/STS-1 Front Module                                                                        | BA9IY04AAA        |
| 89-0398-A                                                                                       | Octal DS-3/STS-1 Front Module                                                                         | BAA9UVXGAA        |
| 89-0400-A                                                                                       | Channelized Network Access Module                                                                     | BA4AW60FAA        |
| 89-0409-A                                                                                       | Octal DS-3 ATM Network Access Module                                                                  | BA5AAE0CAA        |
| 89-0410-A                                                                                       | Triple DS-3/STS-1 Front Module with tone detection                                                    | BA4A60ZFAA        |
| 89-0411-A                                                                                       | Octal DS-3/STS-1 Front Module with tone detection                                                     | BA4A701FAA        |
| 89-0414-A                                                                                       | DS1/E1/J1 I/O Termination Module                                                                      | BA7ATP0FAA        |
| 89-0422-A                                                                                       | Triple DS3 I/O Module                                                                                 | BA9AWV0FAA        |
| 89-0423-A                                                                                       | Octal DS3 I/O Module                                                                                  | BA9AXW0FAA        |
| 89-0424-A                                                                                       | Triple DS3 I/O Module With Tone Detect                                                                | BA9AWX0FAA        |
| 89-0425-A                                                                                       | Octal DS3 I/O Module With Tone Detect                                                                 | BA9AXY0FAA        |
| <b>Note:</b> Shaded part numbers have been “manufacture discontinued,” but are still supported. |                                                                                                       |                   |

## DLP-512 – REPLACE/UPGRADE A SYSTEM PROCESSOR

**SUMMARY:** This procedure provides steps to remove and replace a faulted System Processor (SP)/Timing module as well as upgrade an SP. This procedure assumes the Plexus 9000 is a protected system. If the software version of the rear replacement SP is different from the installed SP, you will be directed to call Telica Technical Services at 888-440-8354 or 888-440-TELI to obtain DLP-545 and so that they can assist you in performing the upgrade.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into the EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Warning:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards.*



**Caution:** *If an SP module is manually removed and then reinserted, it will not automatically be restored to service. You must enter the TL1 command, **RST-EQPT: : SP - {A | B}**, to initialize and synchronize the previously removed SP.*



**Caution:** *If a rear IOM is disconnected or removed from the midplane, it must be replaced or reconnected and then the front IOM must be disconnected from the midplane and then reconnected. If this is not done in this sequence, the SP will not be rebooted.*



**Note:** If using the EMS, some screens may differ from those illustrated depending upon software version of the switch.

1. Familiarize yourself with the installation and removal of circuit cards.

Reference: **DLP-514**

2. Connect a craft terminal or telnet to the Plexus 9000 and log in or use the EMS.

Reference: **DLP-516** – Connect the Plexus 9000 to a Craft Terminal

Reference: **DLP-504** - Establish a Telnet or Graphical User Interface Session

3. Make test calls of different types to verify that the number of answered calls increments.

If using the **EMS**, then continue to the next step.

If using **TL1**, then execute the **RTRV-STATS-CC** command and go to [Step 5](#).

Command Example: **RTRV-STATS-CC::COM;**

4. Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Select **View**, **Stats** and click **Refresh** near the bottom of the panel for latest information. See [Figure 1](#).

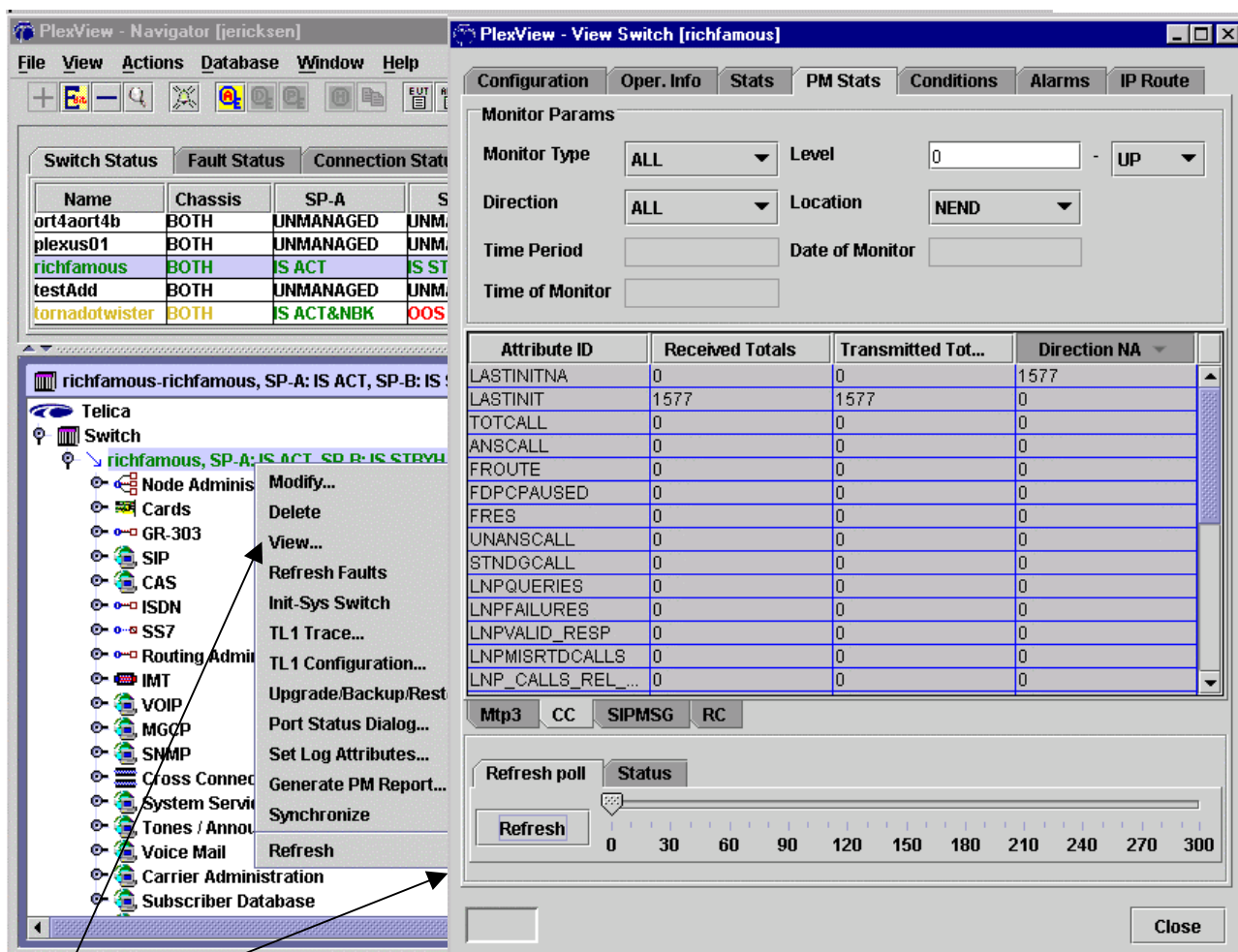


Figure 1. Call Control Stats

5. Are you able to make calls and is the Plexus operating satisfactorily?

If **YES**, go to [Step 8](#).

If **NO**, then continue to the next step.

6. Troubleshoot and correct problems before replacing an IOM.

7.  **YOU HAVE COMPLETED THIS PROCEDURE.**
8. Are you replacing a faulted SP or upgrading an SP with a new version?  
If **YES, replacing a faulted SP**, then continue to the next step.  
If **NO, upgrading an SP**, then go to [Step 32](#).
9. Remove the faulted SP/Timing module from service.  
If using the **EMS**, then continue to the next step.  
If using **TL1**, then execute the RMV-EQPT command and go to [Step 11](#).  
Command Syntax: `RMV-EQPT:[TID]:<equipmentId>:[CTAG];`  
**parameters:**  
`equipmentId` = SP-{A|B} (AID for SP)  
Command Example: **RMV-EQPT::SP-B;**
10. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired SP and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. See [Figure 2](#).
11. Is the front or rear SP/Timing (SP/TMG) being replaced?  
If the **front SP** is being replaced, then continue to the next step.  
If the **rear SP** is being replaced, then go to [Step 14](#).
12. Loosen the top and bottom screws and using the ejector handles, remove the faulted front SP module.
13. Install a replacement front SP module, tighten the screws and then go to [Step 26](#).  
Comment: The SP will enter its power-up and initialization routines. The synchronization state for a newly inserted protection SP can last several minutes based on the amount of configuration data and software images stored in non-volatile memory. During audit and synchronization states, however, service should not be disrupted. When it is ready, the ACT LED will blink.
14. Disconnect any cables from the faulted rear SP module.
15. Loosen the top and bottom screws and using the ejector handles, remove the faulted rear SP module.

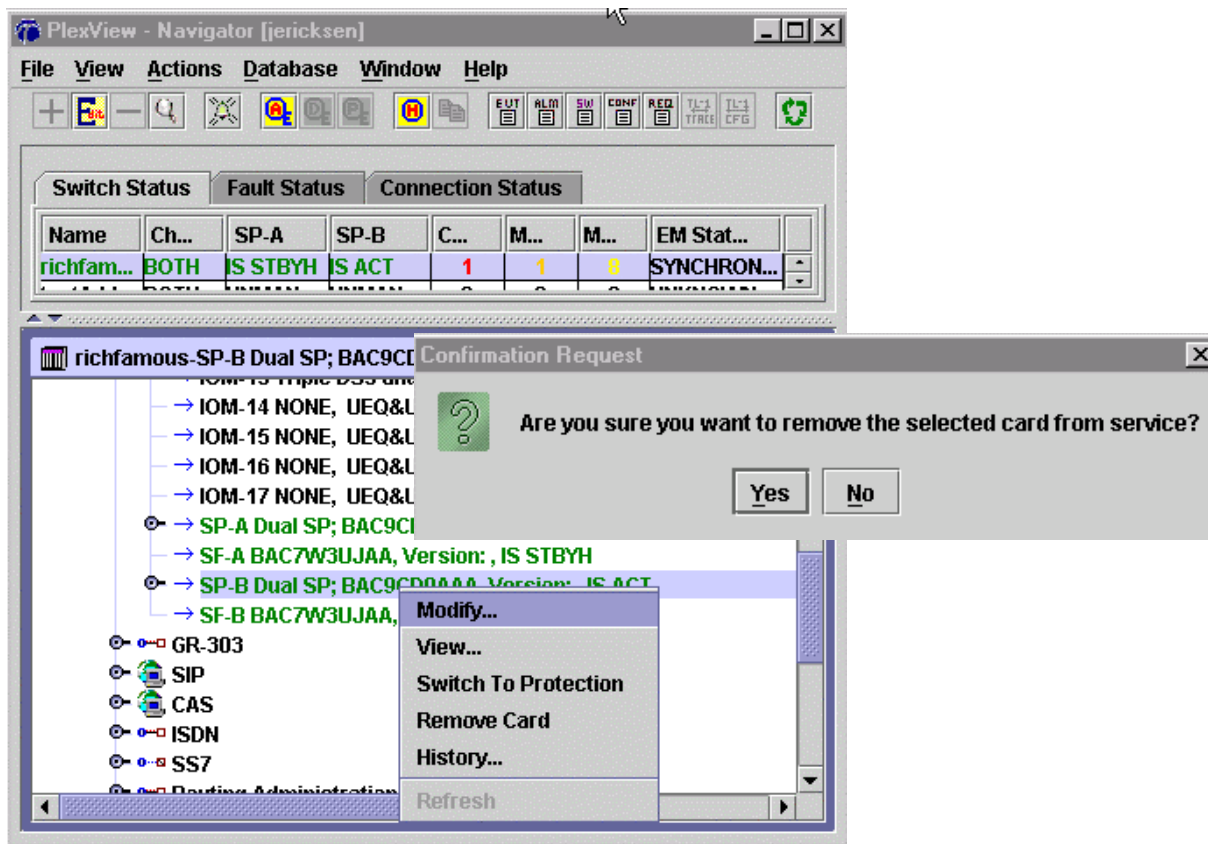


Figure 2. Removing a System Processor

16. Install a replacement rear SP/TMG module and tighten the screws.
17. Loosen the screws of the corresponding **front** SP/TMG module, disconnect the module from the midplane, reconnect it and tighten screws.

Comment: The SP/TMG will enter its power-up and initialization routines. The synchronization state for a newly inserted protection SP can last several minutes based on the amount of configuration data and software images stored in non-volatile memory. During audit and synchronization states, however, service should not be disrupted. When it is ready, the ACT LED will blink.

18. Reconnect cables that were disconnected from the faulted module.





It takes several minutes for SPs to initialize and synchronize. A blinking ACTIVE LED on the protection SP indicates that its status is STBYH and it is ready. Following is a sample TL1 autonomous message indicating the SP is ready:

```
telica 2000-09-08 08:59:46
A 8 REPT EVT
":INIT-51,,09-08,08-59-46,,,:Protection SP-A is synchronized and ready to
provide service"
/* REPT EVENT */
```

**19.** Retrieve information about the SP.

If using the **EMS**, continue to the next step.

If using **TL1**, then execute the RTRV-INFO-EQPT command and note the software version.

Command Example: **RTRV-INFO-EQPT::SP-B;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,
<portCount>,<externalFaults>,<internalFaults>,
<inService>:<memFree>,<memUsed>,<nvMemFree>,
<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],
[<rearHwVersion>],[<rearSerialNumber>],[<prtg>"
;
```

**20.** Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired SP, select *View* and then click *Oper. Info*. See [Figure 3](#).

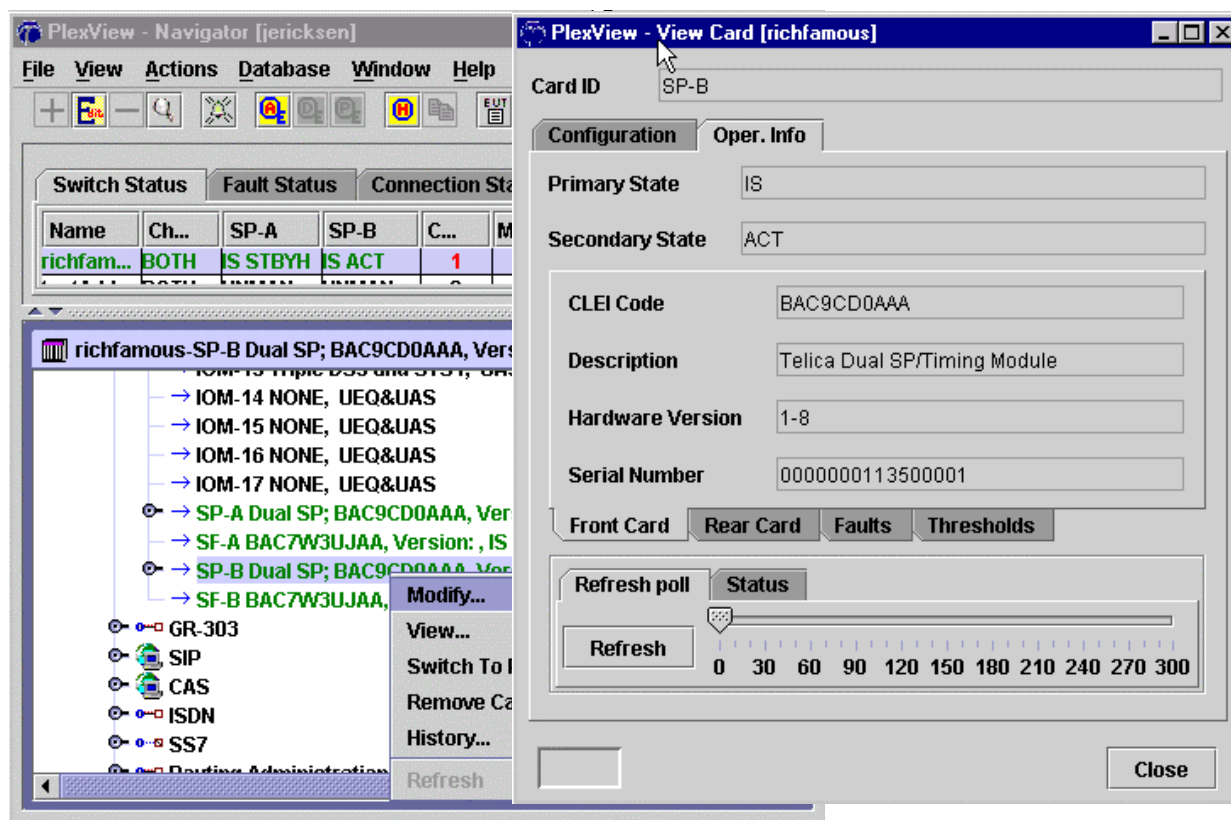


Figure 3. Retrieving SP Operational Information

21. Retrieve provisioned information about the SP.

If using the **EMS**, then continue to the next step.

If using **TL1**, then execute the **RTRV-EQPT** command and note the software version.

Command Example: **RTRV-EQPT::SP-B;**

22. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired SP, select *View* and then click *Configuration* if not already selected. See Figure 4.

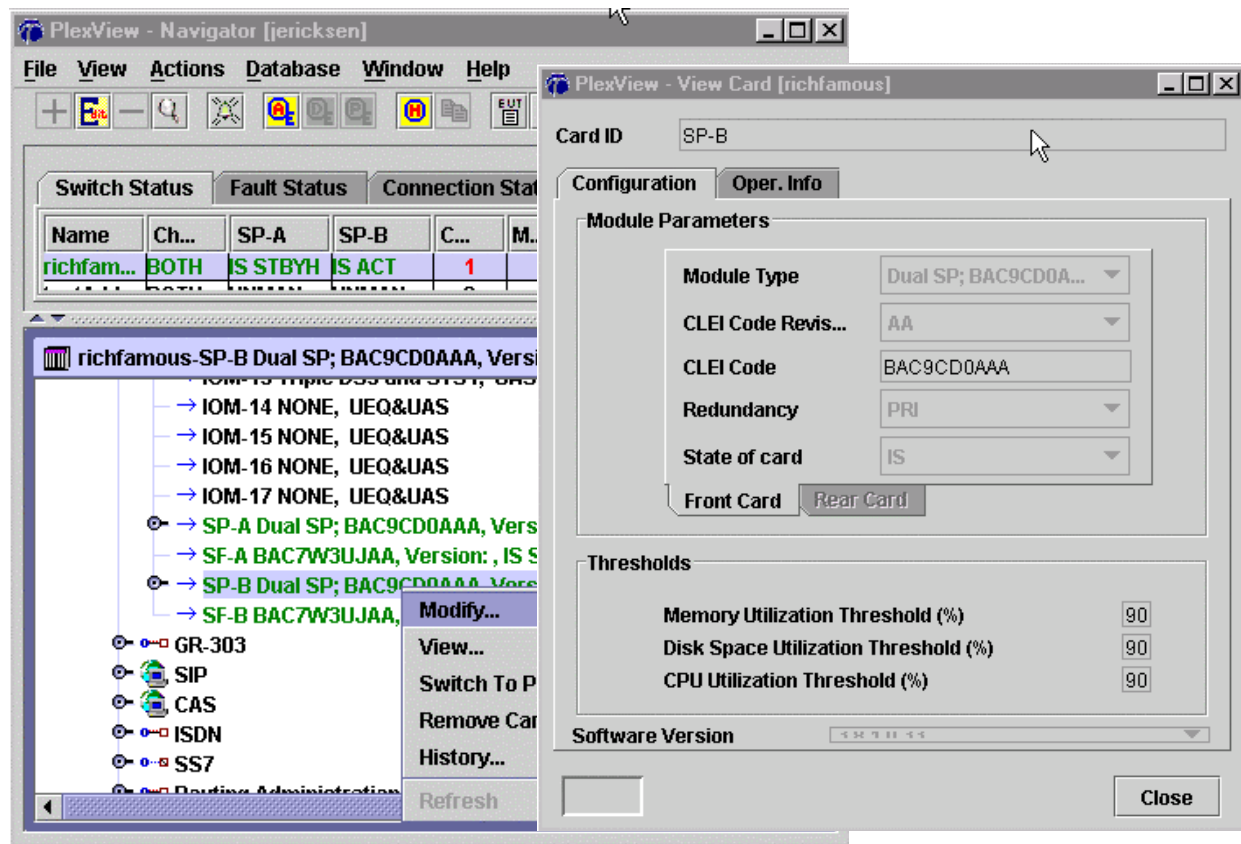


Figure 4. Retrieving SP Configurations

23. Are the software versions different?

If the software versions are **different**, then continue to the next step.  
If the software versions are the **same**, then go to [Step 26](#).

24. Call Telica Technical Services at 888-440-8354 or 888-440-TELI for instructions (DLP-545) to upgrade software of the replacement SP.

25.  **YOU HAVE COMPLETED THIS PROCEDURE.**

26. Wait for the replacement SP to initialize.
27. When the ACT LED is **blinking** on the protection SP, retrieve the status of the module.

If using the **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-ALM command.

Command Syntax: RTRV-ALM-<ReptAid>:[TID]:[<alm\_id>]:  
[CTAG]:[NTFCNCDE=<ntfcncde>],  
[CONDTYPE=<condtype>],  
[SRVEFF=<srveff>],[OCRDAT=<ocrdat>],  
[OVRTM=<ovrtm>],[DESC=<desc>];

Reference: **DLP-568** for parameter definitions.

Command Example: RTRV-ALM-ALL;

28. Select the switch for which you will be retrieving alarms. In the toolbar, select *Actions*, then *View* and then *Alarms*. See [Figure 5](#).

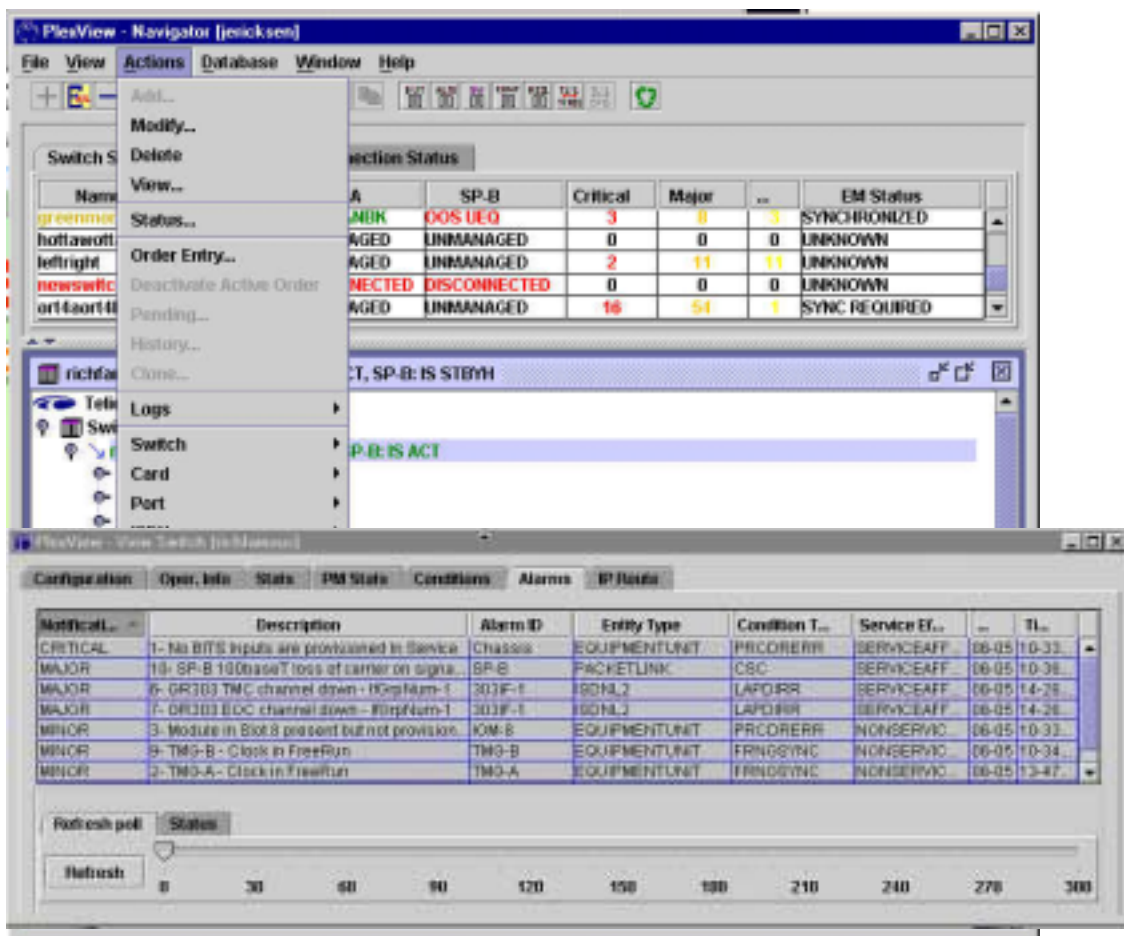


Figure 5. Retrieving Alarms

29. Has the original alarm condition cleared?

If **YES**, then continue to next step.

If **NO**, then call Telica Technical Services at 1-888-440-8354 or 1-508-485-5739.

30. Did you change the front SP from SP1 (89-0366) to SP2 (89-0389)?

If **YES**, then go to [Step 39](#) to change the other processor.

If **NO**, then continue to the next step.

31.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The following steps will upgrade an SP1 (89-0366) to SP2 (89-0389). When upgrading from SP1 to SP2, the rear module is the same and will not be replaced.

32. Remove the protection SP/Timing module from service.

If using the **EMS**, refer to [Step 10](#) and see [Figure 2](#).

If using **TL1**, then execute the RMV-EQPT command.

Command Syntax: **RMV-EQPT:[TID]:<equipmentId>:[CTAG];**

**parameters:**

equipmentId = SP-{A|B} (AID for SP)

Command Example: **RMV-EQPT::SP-B;**

33. Loosen the top and bottom screws and using the ejector handles, remove the protection front SP module.

34. Install a replacement front SP module and tighten the screws.

Comment: The SP will enter its power-up and initialization routines. The synchronization state for a newly inserted protection SP can last several minutes based on the amount of configuration data and software images stored in non-volatile memory. During audit and synchronization states, however, service should not be disrupted. When it is ready, the ACT LED will blink.

35. Wait for the replacement SP to initialize.

36. Restore the protection SP/Timing module to service.

If using the **EMS**, then double-click the switch to select it for the main panel and double-click *Cards*. Right-click the desired SP and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module.

If using **TL1**, then execute the RST-EQPT command.

Command Syntax: RST-EQPT:[TID]:<equipmentId>:[CTAG];

**parameters:**

equipmentId = SP-{A|B} (AID for SP)

Command Example: **RST-EQPT::SP-B;**

37. Retrieve information about the SP.

If using the **EMS**, then refer to [Step 22](#) and see [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command.

Command Example: **RTRV-EQPT::SP-B;**

38. Repeat [Step 37](#) until the protection SP's primary state is IS, STBYH. If, after ten minutes, the SP is not IS, STBYH, then go to [Step 52](#).

39. Switch the active SP to protection.

If using the **EMS**, then continue to the next step.

If using **TL1**, then execute the SW-TOPROTN-EQPT command.

Command Example: **SW-TOPROTN-EQPT::SP-A;**

40. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired SP and then select *Switch to Protection*. A confirmation screen appears. Select *Yes* to switch the SP. See [Figure 6](#).

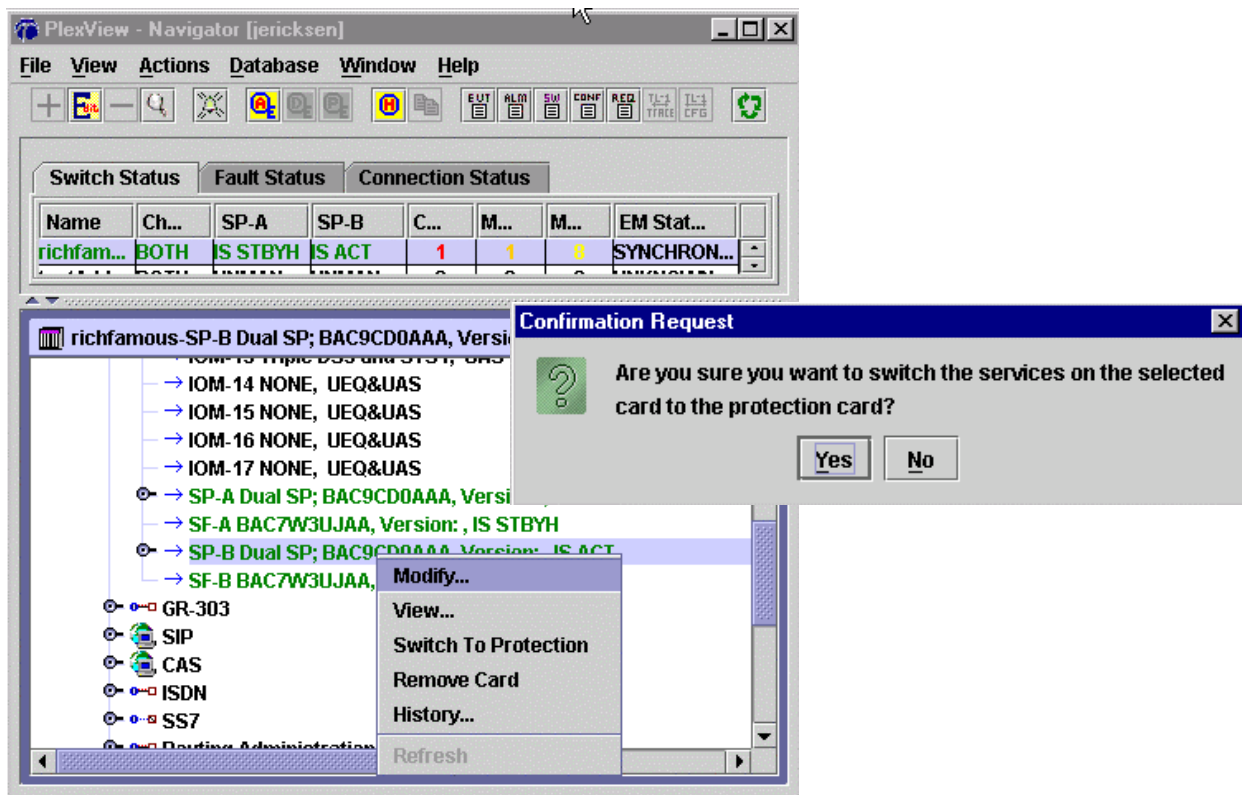


Figure 6. Switching a System Processor

41. Wait for the SPs to synchronize.

42. Retrieve information about the SP.

If using the **EMS**, then refer to [Step 22](#) and see [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command.

Command Example: **RTRV-EQPT::SP-A;**

43. Repeat [Step 42](#) until the protection SP's primary state is IS, STBYH. If, after ten minutes, the SP is not IS, STBYH, then go to [Step 52](#).

44. Remove the protection SP/Timing (SP) module from service with the RMV-EQPT command.

If using the **EMS**, then refer to [Step 10](#) and see [Figure 2](#).

If using **TL1**, then execute the RMV-EQPT command.

Command Syntax: **RMV-EQPT:[TID]:<equipmentId>:[CTAG];**

Command Example: **RMV-EQPT::SP-A;**

45. Loosen the top and bottom screws and using the ejector handles, remove the protection front SP module.

46. Install a replacement front SP module and tighten the screws.

47. Wait for the replacement SP to initialize.

48. Restore the protection SP/Timing module to service.

If using the **EMS**, then double-click the switch to select it for the main panel and double-click *Cards*. Right-click the desired SP and then select *Restore Card*. A confirmation screen appears. Select *Yes* to restore the module.

If using **TL1**, then execute the RST-EQPT command.

Command Example: **RST-EQPT::SP-A;**

49. Retrieve information about the SP.

If using the **EMS**, then refer to [Step 22](#) and see [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command.

Command Example: **RTRV-EQPT::SP-A;**

50. Repeat [Step 49](#) until the protection SP's primary state is IS, STBYH. If, after ten minutes, the SP is not IS, STBYH, then go to [Step 52](#).

51.  **YOU HAVE COMPLETED THIS PROCEDURE.**

52. Call Telica Technical Services at 888-440-8354 or 888-440-TELI for assistance.

53.  **YOU HAVE COMPLETED THIS PROCEDURE.**



## DLP-513 - REPLACE SWITCH FABRIC MODULE

**SUMMARY:** This procedure provides steps to remove and replace a faulted Switch Fabric module. This procedure assumes the Plexus 9000 is a protected system.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Warning:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards*



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Familiarize yourself with the installation and removal of circuit cards.

Reference: **DLP-514**

2. Connect a craft terminal or telnet to the Plexus 9000 and log in or use EMS.

Reference: **DLP-516** – Connect the Plexus 9000 to a Craft Terminal

3. Remove the faulted Switch Fabric module from service by removing the associated System Processor

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and then go to [Step 5](#).

Command Syntax: **RMV-EQPT:[TID]:<equipmentId>:[CTAG];**

**parameters:**

equipmentId = SP-{A|B} (AID for SP)

Command Example: **RMV-EQPT::SP-A;**

4. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired SP and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 1](#).

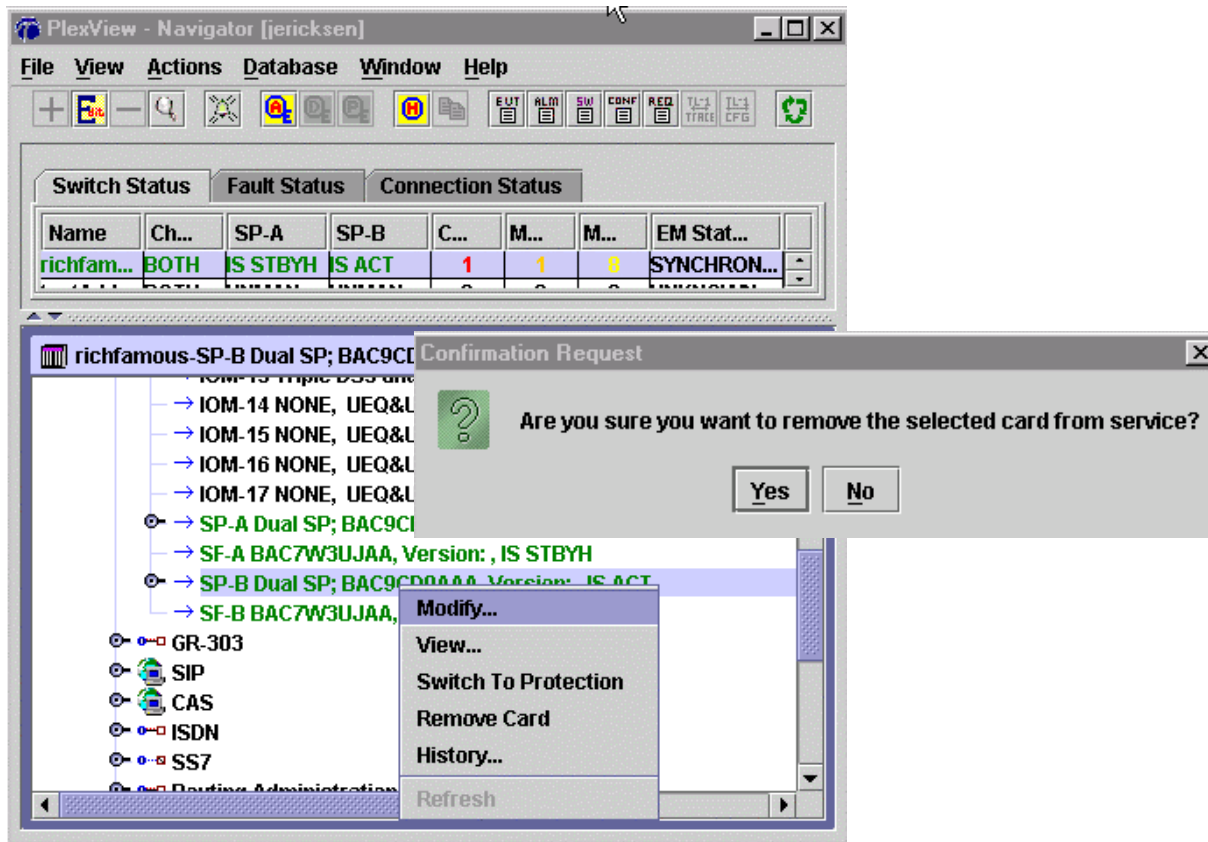


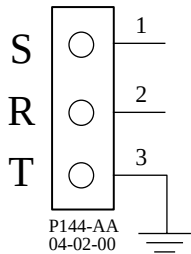
Figure 1. Removing a System Processor

5. Is the front or rear Switch Fabric (SF) being replaced?  
If **front**, then continue to the next step.  
If **rear**, then go to [Step 10](#).
6. Remove the faulted front Switch Fabric module.
7. Disconnect the corresponding front System Processor module from the midplane
8. Wait a minimum of ten (10) seconds and then install a replacement front Switch Fabric (SF) module (89-0363)
9. Wait a minimum of ten (10) seconds and then reinstall associated front System Processor and go to [Step 29](#).

Comment: The SF will enter its power-up and initialization routines. The synchronization state for a newly inserted protection SF can last several minutes. During audit and synchronization states, however, service should not be disrupted. When it is ready the ACT LED will blink.

10. Is the rear SF-A or SF-B being replaced?  
If **SF-A**, then continue to the next step.  
If **SF-B**, then go to [Step 21](#).
11. Remove the wire-wrapped BITS cable.
12. If connected, disconnect the Bay Alarm and Alarm Contacts cables from the rear SF-A card.
13. Disconnect the associated front Switch Fabric-A module from the midplane.
14. Disconnect the associated front System Processor-A module from the midplane.
15. Remove the faulted rear Switch Fabric-A card.
16. Wait a minimum of ten (10) seconds and install a replacement rear SF-A module (89-0364).
17. Wait a minimum of ten (10) seconds and then reconnect front Switch Fabric-A (SF-A) module.
18. Wait a minimum of ten (10) seconds and then reconnect front System Processor-A (SP-A).
19. Strip and wire-wrap the BITS cable to the **Timing IN** port of the SF card that was replaced. Refer to [Table A](#) for pins and description.

**Table A. BITS Timing Connector**

| Port | Connector                                                                           | Pin | Description |
|------|-------------------------------------------------------------------------------------|-----|-------------|
| SRT  |  | 1   | Shield      |
|      |                                                                                     | 2   | Ring        |
|      |                                                                                     | 3   | Tip         |
|      |                                                                                     |     |             |

20. Connect Bay alarm and Alarm Contacts cables if they were disconnected from faulted module and then go to [Step 29](#).
21. Remove the wire-wrapped BITS cable.
22. Disconnect the associated front Switch Fabric-B module from the midplane.
23. Disconnect the associated front System Processor-B module from the midplane.
24. Remove the faulted rear Switch Fabric-B card.
25. Wait a minimum of ten (10) seconds and install a replacement rear SF-B module (89-0375-n-n).

26. Wait a minimum of ten (10) seconds and then reconnect front Switch Fabric-B (SF-B) module.
27. Wait a minimum of ten (10) seconds and then reconnect front System Processor-B (SP-B).
28. Strip and wire-wrap the BITS cable to the **Timing IN** port of the SF card that was replaced. Refer to [Table A](#) for pins and description.



**Note:** It takes several minutes for Switch Fabric Modules and System Processors to initialize and synchronize. A blinking ACTive LED on the protection Switch Fabric indicates that its status is STBYH and it is ready.

29. When the ACT LED is **blinking** on the protection Switch Fabric, retrieve the status of the module using the RTRV-ALM command.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-ALM command.

Command Syntax: RTRV-ALM-<ReptAid>:[TID]:[<alm\_id>]:  
[CTAG]:[NTFCNCDE=<ntfcncde>],  
[CONDTYPE=<condtype>],  
[SRVEFF=<srveff>],[OCRDAT=<ocrdat>],  
[OCRTM=<ocrtm>],[DESC=<desc>];

Reference: **DLP-568** for parameter definitions.

Command Example: RTRV-ALM-ALL;

30. Select the switch for which you will be troubleshooting alarms. In the toolbar, select *Actions*, then *View* and then *Alarms*. Refer to [Figure 2](#).

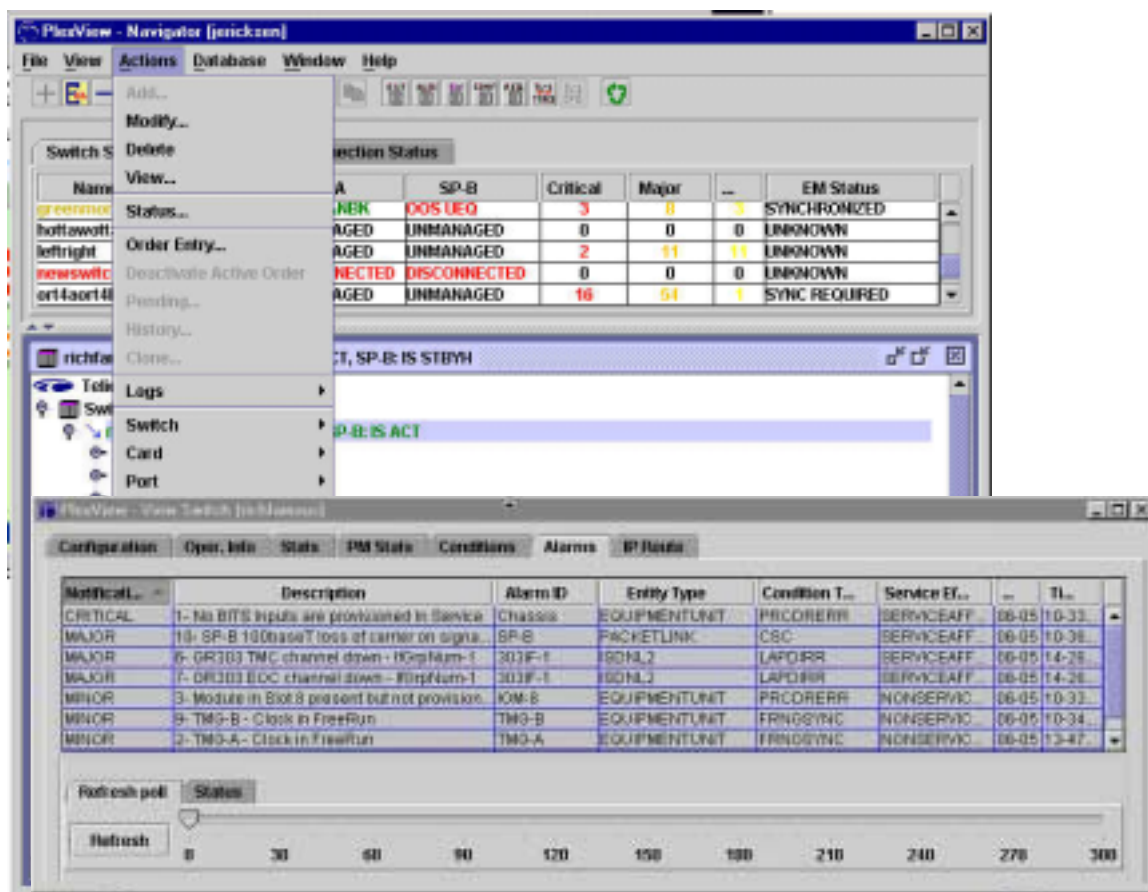


Figure 2. Retrieving Alarms

31. Has the original alarm condition cleared?

If **YES**, then continue to next step.

If **NO**, then call Telica Technical Services at 1-888-440-8354 or 1-508-485-5739.

32. Restore the replaced Switch Fabric to service by restoring the associated System Processor.

If using **EMS**, then double-click the switch to select it for the main panel and double-click *Cards*. Right-click the desired SP and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module.

If using **TL1**, then execute the RST-EQPT command.

Command Syntax: RST-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RST-EQPT::SP-A;**

- 33.



**YOU HAVE COMPLETED THIS PROCEDURE.**

**NOTES:**

## DLP-514 - MODULE INSTALLATION OR REMOVAL

**SUMMARY:** This procedure explains how to install or remove modules from a chassis.



**Warning:** *Modules can be damaged by electrostatic discharge or improper handling. Observe the following:*

- *An anti-static wrist strap should be worn at all times when you are handling modules. A wrist strap and cord were included in Accessory Kit box that was shipped with the chassis.*
- *Handle modules with care so as not to cause damage to components.*
- *Hold modules by edges or using ejector keys.*
- *Insure modules are installed right side up with name at the top.*

1. Test the wrist strap.
2. Are you installing a module into an equipment chassis?  
If **YES**, then continue on to the next step.  
If **NO**, then go to [Step 9](#).
3. Remove the module from the ESD protective container.
4. Slide the module into the chassis, making sure that the module aligns with the guides at the top and bottom of the chassis, as shown in [Figure 1](#).
5. Move the extraction handles on the module to the horizontal position, as shown in [Figure 1](#).
6. When the module meets with resistance, push the extractor handles to the vertical position. This will firmly seat the module into the connector on the midplane.
7. Tighten the screws on the top and bottom of the module using a Phillips screwdriver.
8.  **YOU HAVE COMPLETED THIS PROCEDURE.**
9. Loosen the screws on the top and bottom of the module using a Phillips screwdriver.
10. Pull the extractor handles to a horizontal position as illustrated in [Figure 2](#). This disconnects the module from the equipment midplane connector.

11. Pull the module straight out of the slot, and remove it from the cage as illustrated in [Figure 2](#).
12. Place the module into an approved anti-static container.
13.  **YOU HAVE COMPLETED THIS PROCEDURE.**

### CARD INSTALLATION

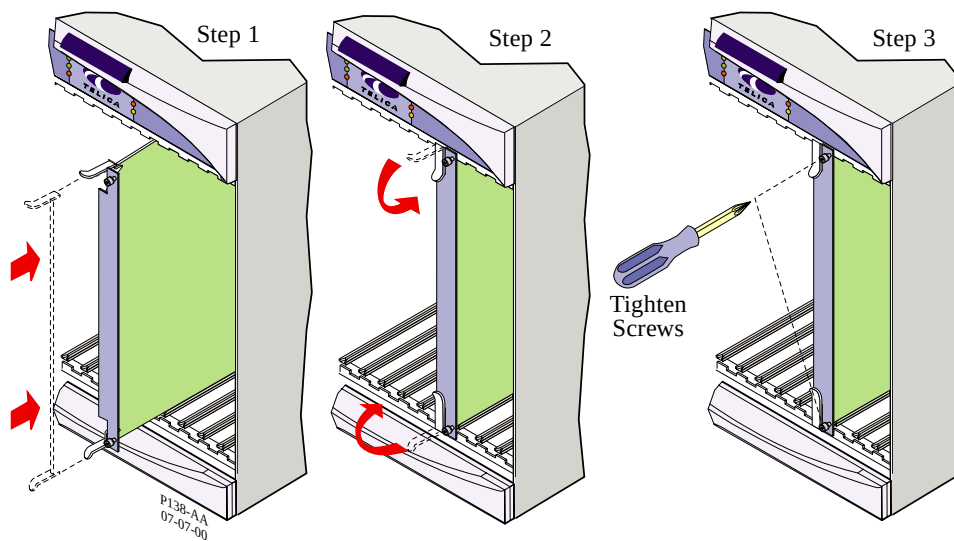


Figure 1. Installing a Module

### CARD REMOVAL

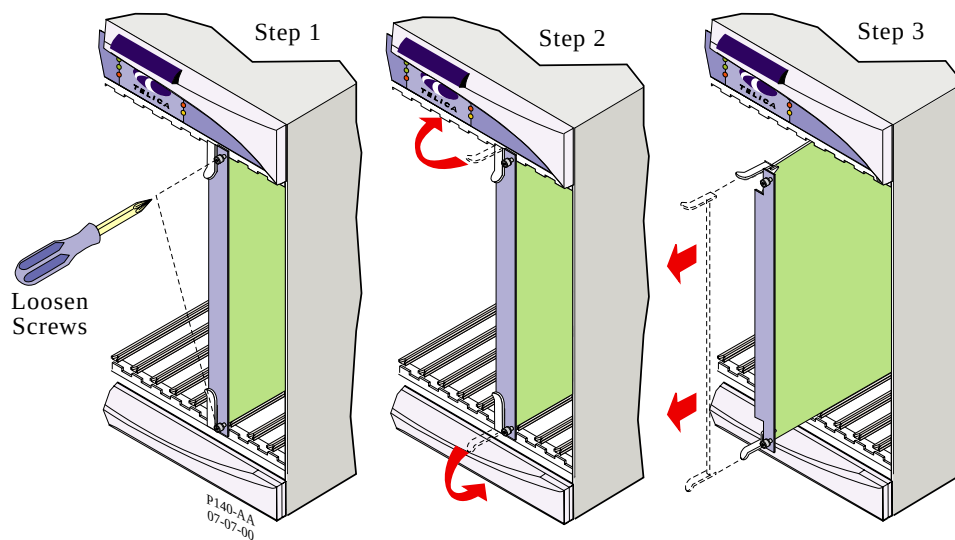


Figure 2. Removing a Module



## DLP-515 - REPLACE A FAULTED DS1 OR DS3 IOM

**SUMMARY:** This procedure provides steps to remove and replace a faulted DS1 or DS3 IOM. You will be directed to call Telica Technical Services at 888-440-8354 or 888-440-TELI to find out if you can update the IOM software using the CPY-MEM command or if Technical Services must assist you in performing upgrade.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**DANGER:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards. A wrist strap and cord were included in Accessory Kit box that was shipped with the chassis.*



**Caution:** *If a rear IOM is disconnected or removed from the midplane, it must be replaced or reconnected and then the front IOM must be disconnected from the midplane and then reconnected. If this is not done in this sequence, the IOM will not be rebooted.*

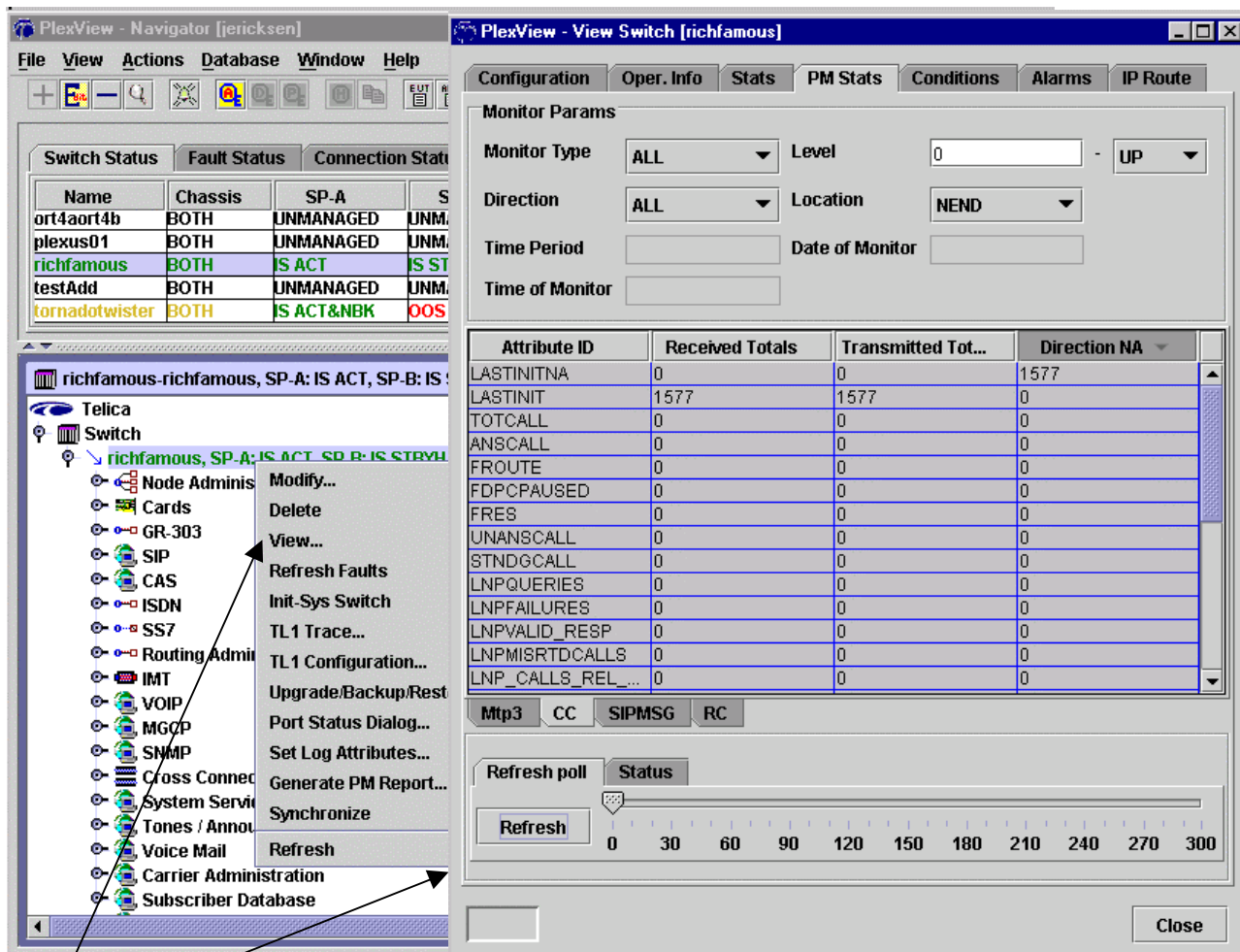


**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Familiarize yourself with the installation and removal of circuit cards.  
Reference: **DLP-514**
2. If you are not logged into the Plexus, connect a craft terminal or telnet to the Plexus 9000 and log in or use EMS.  
Reference: **DLP-516** – Connect the Plexus 9000 to a Craft Terminal  
Reference: **DLP-504** - Establish a Telnet Session

- Command Example: **RTRV-STATS-CC::COM;**

- Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Then select *View, Stats* and click *Refresh* near the bottom of the panel for latest information. Refer to [Figure 1](#).



### Figure 1. Call Control Stats

- If **NO**, then continue to the next step.

6. Troubleshoot and correct problems such as provisioning or problems external to the Plexus before replacing an IOM.

7.  **YOU HAVE COMPLETED THIS PROCEDURE.**

8. Look at the Plexus and identify which DS1 or DS3 modules have FLT LEDs illuminated and blinking ACT LEDs.

9. Is the faulted IOM a protected DS1 or DS3 IOM?

If **YES**, then continue to the next step.

If **NO**, the IOM is not protected, then go to [Step 13](#).

10. Compare the part numbers (next to upper ejector handle) of the protection module for the IOM that is faulted and the module that will be used for replacement. Is the part number of the **protection** module equal to or greater than the part number of the replacement module?

If **YES**, then go to [Step 13](#).

If **NO**, then continue to the next step.

11. The part number of the protection module must be equal to or greater than the part number of the replacement module. You have determined that the replacement part number is greater than the part number of the protection module. You must locate a replacement module that is equal or less than the part number of the installed IOM before continuing.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Select your task from the following and go to the indicated step.

- Replace a faulted protection module ..... [Step 15](#)
- Replace a faulted protected front DS3 module ..... [Step 17](#)
- Replace a faulted protected front DS1 module ..... [Step 37](#)
- Replace an unprotected IOM..... [Step 47](#)
- Replace a faulted rear module..... [Step 64](#)
- There are FLT LEDs on other IOMs, then go to..... **DLP-535**
- Finished, no other task in the above list..... continue to the next step.

14.  **YOU HAVE COMPLETED THIS PROCEDURE.**

15. Is a protection module faulted?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 17](#).

16. Loosen the screws of the front protection module and then go to [Step 50](#).



**Note:** The following steps are performed for DS3 IOMs on the left side of the chassis.

17. Are there FLT LEDs illuminated on two or more DS3 IOMs on the left side of the chassis.

If **YES**, then go to [Step 21](#).

If **NO**, only one DS3 module on the left side of the chassis has a FLT LED, then continue to the next step

If **NO**, the FLT LED is on a DS3 IOM on the right side of the chassis, then go to [Step 27](#).

If **NO**, the FLT LED is not on a DS3 IOM, then go to [Step 37](#).

18. There is only one faulted DS3 IOM. Remove the faulted IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 20](#).

Command Syntax: `RMV-EQPT:[TID]:<equipmentId>:[CTAG];`

Command Example: `RMV-EQPT::IOM-1;`

19. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#).

20. Loosen the top and bottom screws of the faulted protected IOM and go to [Step 50](#).



**Note:** Dependent upon software version, a blinking green ACT LED and red FLT LED on an IOM and a solid ACT LED on the protection IOM indicate that the module has switched to protection. A FLT LED only, on an IOM indicates the module could not switch to protection.

If there is a solid ACT LED on the protection IOM, a module has switched to protection. With some software versions, if multiple IOMs have failed, you will have to determine which IOM has switched to protection.

The following steps will identify the IOM that is unprotected and will be replaced first.

21. Do any of the IOMs with FLT LEDs illuminated also have a blinking green ACT LED?

If **YES**, then the IOM with only the FLT LED illuminated will be replaced first.

Go to [Step 47](#).

If **NO**, then continue to the next step to determine which IOM has switched to protection.

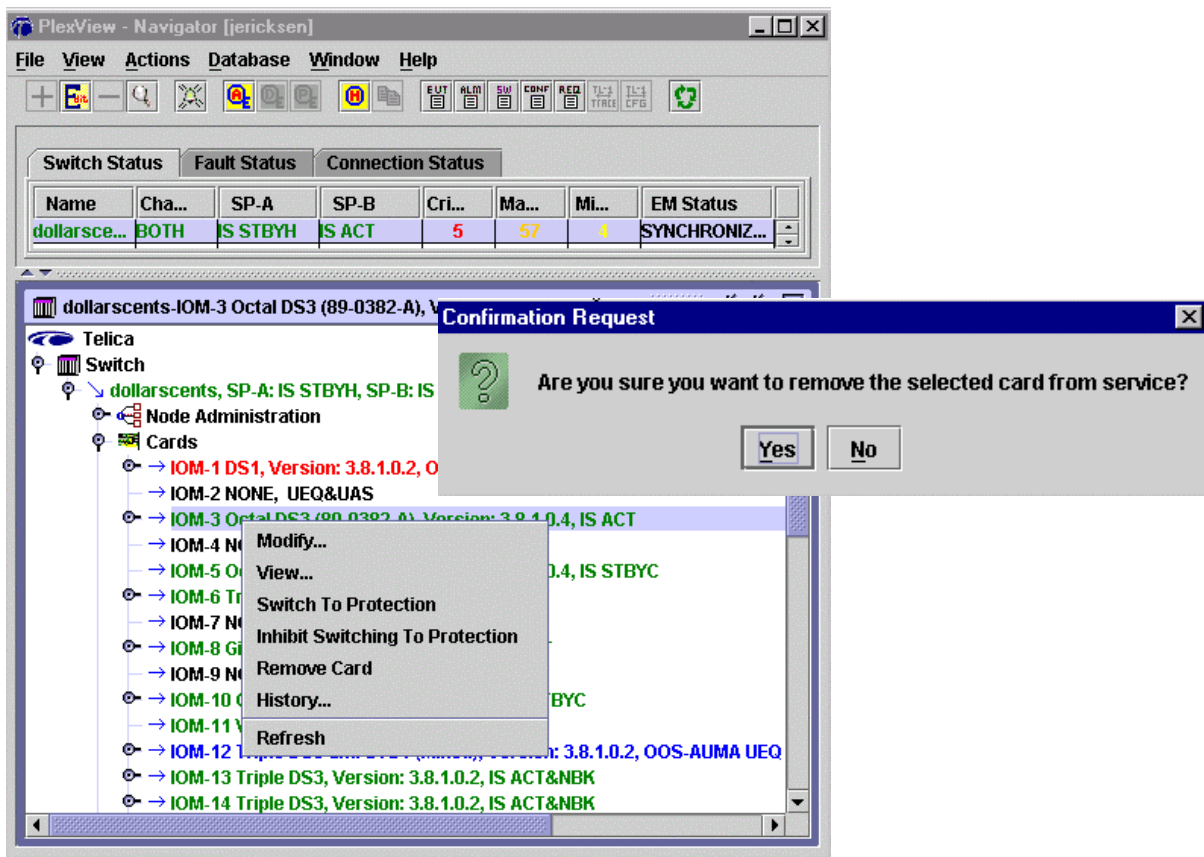


Figure 2. Removing a Module

22. Retrieve information about the IOM using the RTRV - INFO - EQPT command.

If using EMS, then continue to the next step.

If using TL1, then execute the RTRV - INFO - EQPT command and go to [Step 24](#).

Command Example: **RTRV - INFO - EQPT : : IOM - 3 ;**

#### Output Format:

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,<serialNumber>,<selfTestStatus>,<portType>,<portCount>,<externalFaults>,<internalFaults>,<inService>:<memFree>,<memUsed>,<nvMemFree>,<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],[<rearHwVersion>],[<rearSerialNumber>],[<prtgt>"
;
```

Comment: The *prtgt* parameter is not available in all software versions.

23. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Oper. Info*. Note the CLEI and software version. Refer to [Figure 3](#).

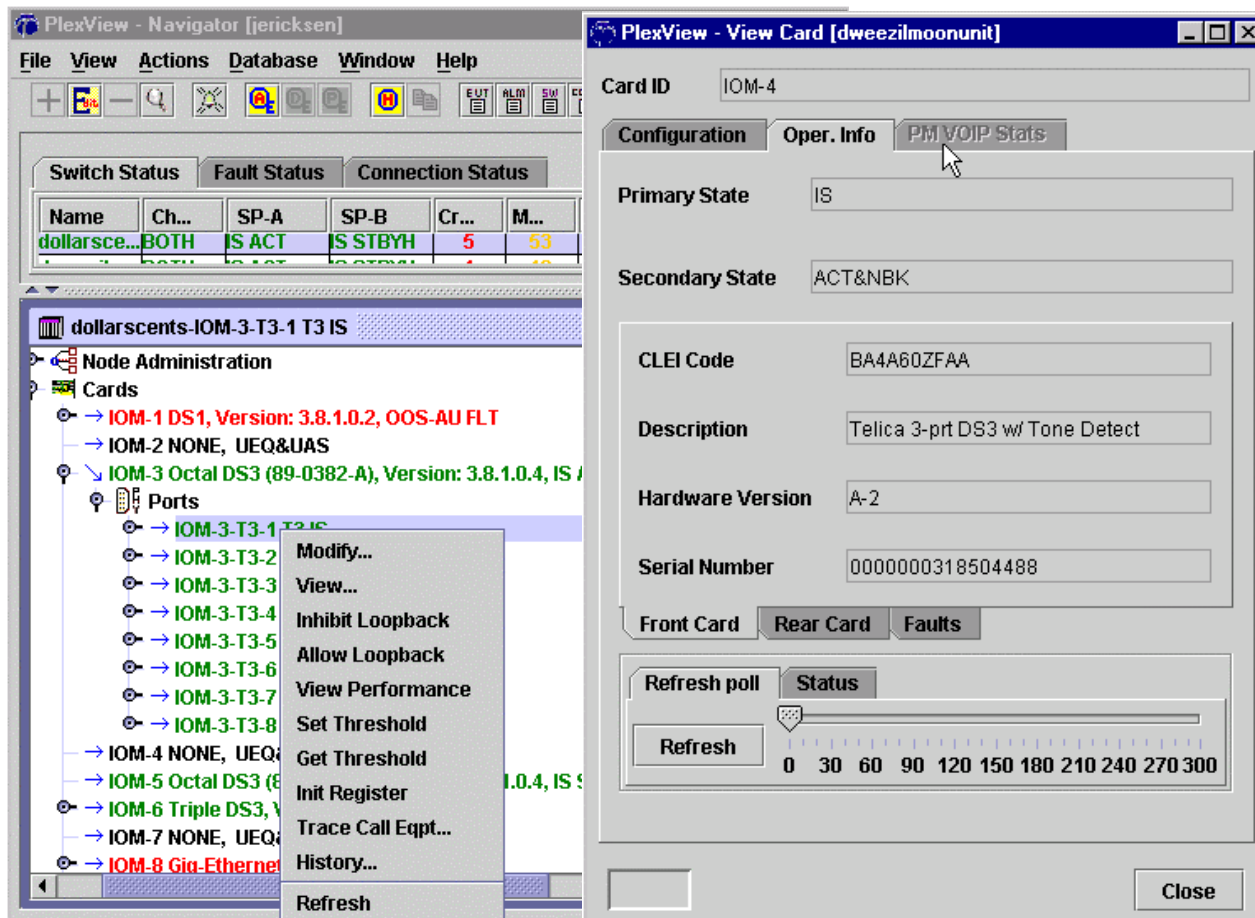


Figure 3. Retrieving Module Information

24. Does the information provided for protection (*prt*) indicate which IOM has switched to protection?

If **YES**, then the IOM with FLT LED illuminated that is not protected will be replaced first. Go to [Step 47](#).

If **NO**, then continue to the next step.

25. If using **TL1**, check the messages of a log using the **RTRV-LOG** command, else go to [Step 47](#).

Command Syntax: **RTRV-LOG:[TID]:[<log\_id>]:[CTAG]:[<lognm>,;**

Command Example: **RTRV-LOG:::::A0;**

26. Search backwards to find which IOM switched to protection to determine which IOM with a FLT LED is not protected. Note this IOM and then go to [Step 47](#).



**Note:** The following steps are performed for DS3 IOMs on the right side of the chassis.

27. Are there FLT LEDs illuminated on two or more DS3 IOMs on the right side of the chassis.

If **YES**, then go to [Step 31](#).

If **NO**, only one DS3 module on the right side of the chassis has a FLT LED, then continue to the next step

If **NO**, the FLT LED is not on a DS3 IOM, then go to [Step 37](#).

28. There is only one faulted DS3 IOM. Remove the faulted IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 30](#).

Command Syntax: `RMV-EQPT:[TID]:<equipmentId>:[CTAG];`

Command Example: **RMV-EQPT::IOM-1;**

29. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#).

30. Loosen the top and bottom screws of the faulted protected IOM and go to [Step 50](#).



**Note:** Dependent upon software version, a blinking green ACT LED and red FLT LED on an IOM and a solid ACT LED on the protection IOM indicate that the module has switched to protection. A FLT LED only, on an IOM indicates the module could not switch to protection.

If there is a solid ACT LED on the protection IOM, a module has switched to protection. With some software versions, if multiple IOMs have failed, you will have to determine which IOM has switched to protection.

The following steps will identify the IOM that is unprotected and will be replaced first.

31. Do any of the IOMs with FLT LEDs illuminated also have a blinking green ACT LED?

If **YES**, then the IOM with only the FLT LED illuminated will be replaced first.

Go to [Step 47](#).

If **NO**, then continue to the next step to determine which IOM has switched to protection.



32. Retrieve information about the IOM using the RTRV-INFO-EQPT command.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-INFO-EQPT command and go to [Step 34](#).

Command Example: **RTRV-INFO-EQPT::IOM-3;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,
<portCount>,<externalFaults>,<internalFaults>,
<inService>:<memFree>,<memUsed>,<nvMemFree>,
<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],
[<rearHwVersion>],[<rearSerialNumber>],[<prtgt>"
;
```

Comment: The *prtgt* parameter is not available in all software versions.

33. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Oper. Info*. Note the CLEI and software version. Refer to [Figure 3](#).
34. Does the information provided for protection (*prtgt*) indicate which IOM has switched to protection?
- If **YES**, then the IOM with FLT LED illuminated that is not protected will be replaced first. Go to [Step 47](#).
- If **NO**, then continue to the next step.
35. If using **TL1**, check the messages of a log using the RTRV-LOG command, else go to [Step 47](#).

Command Syntax: **RTRV-LOG:[TID]:[<log\_id>]:[CTAG]::**  
**<lognm>;**

Command Example: **RTRV-LOG:::::A0;**

36. Search backwards to find which IOM switched to protection to determine which IOM with a FLT LED is not protected. Make a note of the IOM and then go to [Step 47](#).





**Note:** The following steps are performed for DS1 IOMs.

37. Are there FLT LEDs illuminated on two or more DS1 IOMs?

If **YES**, then go to [Step 41](#).

If **NO**, only one DS1 module has a FLT LED, then continue to the next step

38. There is only one faulted DS1 IOM. Remove the faulted IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 40](#).

Command Syntax: **RMV-EQPT:[TID]:<equipmentId>:[CTAG];**

Command Example: **RMV-EQPT::IOM-1;**

39. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#).
40. Loosen the top and bottom screws of the faulted protected IOM and go to [Step 50](#).



**Note:** Dependent upon software version, a blinking green ACT LED and red FLT LED on an IOM and a solid ACT LED on the protection IOM indicate that the module has switched to protection. A FLT LED only, on an IOM indicates the module could not switch to protection.

If there is a solid ACT LED on the protection IOM, a module has switched to protection. With some software versions, if multiple IOMs have failed, you will have to determine which IOM has switched to protection.

The following steps will identify the IOM that is unprotected and will be replaced first.

41. Do any of the IOMs with FLT LEDs illuminated also have a blinking green ACT LED?

If **YES**, then the IOM with only the FLT LED illuminated will be replaced first. Go to [Step 47](#).

If **NO**, then continue to the next step to determine which IOM has switched to protection.

42. Retrieve information about the IOM using the RTRV-INFO-EQPT command.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-INFO-EQPT command and go to [Step 44](#).

Command Example: **RTRV-INFO-EQPT::IOM-3;**

Comment: The *prtg* parameter is not available in all software versions.

43. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Oper. Info*. Note the CLEI and software version. Refer to [Figure 3](#).

44. Does the information provided for protection (*prt*) indicate which IOM has switched to protection?

If **YES**, then the IOM with FLT LED illuminated that is not protected will be replaced first. Go to [Step 47](#).

If **NO**, then continue to the next step.

45. If using **TL1**, check the messages of a log using the RTRV-LOG command, else go to [Step 47](#).

Command Syntax: RTRV-LOG:[TID]:[<log\_id>]:[CTAG]::  
<lognm>;

Command Example: **RTRV-LOG:::AO;**

46. Search backwards to find which IOM switched to protection to determine which IOM with a FLT LED is not protected.



**Note:** The following steps are performed for to replace an identified IOM.

47. Remove the faulted IOM from service if you have not already done so.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 49](#).

Command Syntax: RMV-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RMV-EQPT::IOM-1;**

Command Example: **RMV-EQPT::IOM-1;**

48. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#).

49. Loosen the screws of the front module that was identified in previous steps as unprotected and the IOM to be replaced.

50. Using the ejector handles, disconnect the module from the midplane.

51. Install a replacement module. Then tighten screws and check to ensure that the front is securely installed.

Comment: The IOM will enter its power-up and initialization routines. This will take several minutes. If the replacement IOM has the same software revision level and CLEI code, the IOM will begin operation.

52. Wait for the module to complete initialization. This can take several minutes.

53. Retrieve information about the IOM and note CLEI and software version using the RTRV-INFO-EQPT command.

If using EMS, refer to [Step 23](#) and [Figure 3](#).

If using TL1, then execute the RTRV-INFO-EQPT command.

Command Example: **RTRV-INFO-EQPT::IOM-3;**

54. Retrieve provisioned information about the IOM and note CLEI and software version using the RTRV-EQPT command.

If using EMS, then continue to the next step.

If using TL1, then execute the RTRV-EQPT command.

Command Example: **RTRV-EQPT::IOM-3;**

55. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Configuration*. Note the CLEI and software version. Refer to [Figure 4](#).

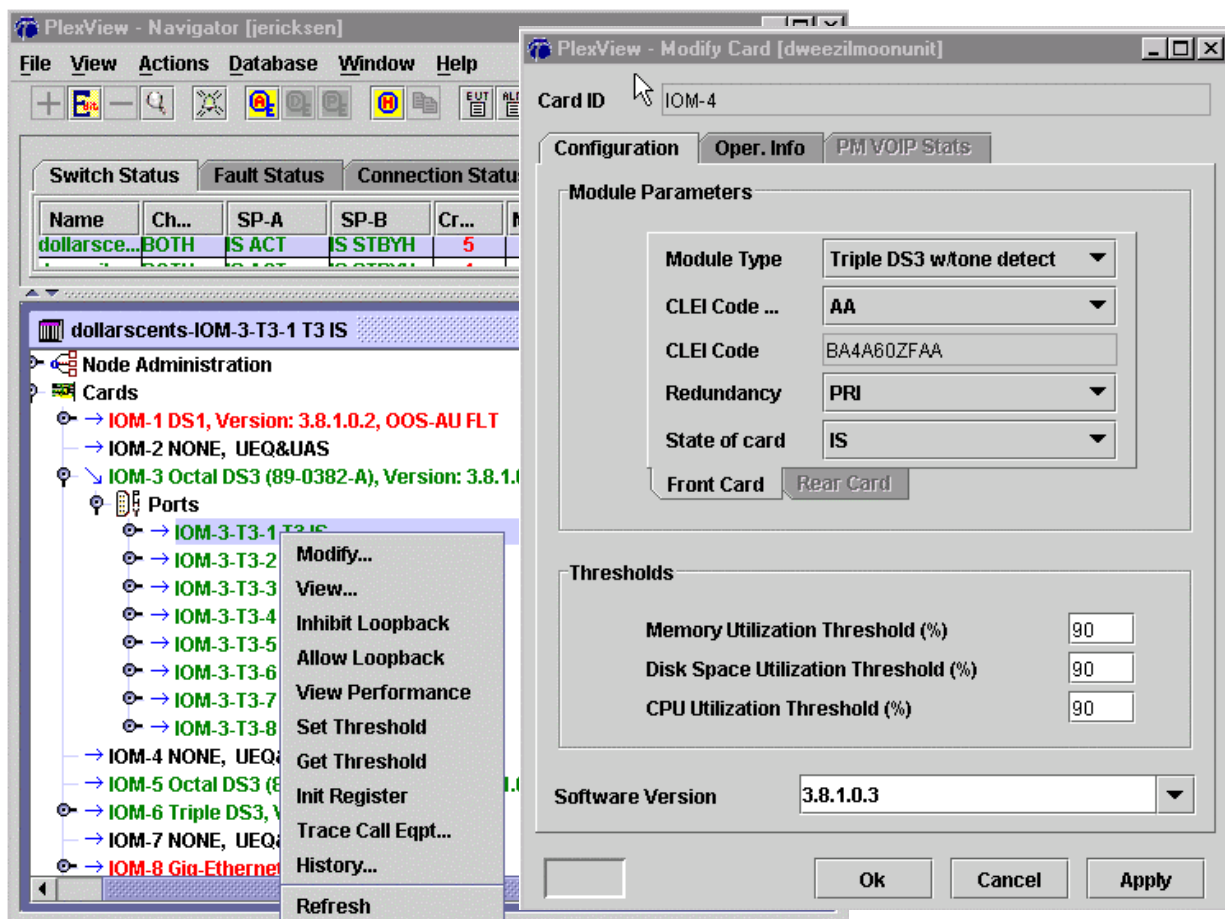


Figure 4. Retrieving Module Configuration

56. Are the CLEI and/or software versions different?

If they are the **same**, then go to [Step 58](#).

If **only** CLEI codes are different, then continue to the next step.

If the **software versions** are different, then go to **DLP-621** before continuing to [Step 58](#).

57. Change the provisioned CLEI to the module CLEI

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the ED-EQPT command.

Command Syntax: ED-EQPT::IOM-{1. . . 17}: [CTAG]::  
IOMODULETYPE=<ioModuleType>;

Command Example: ED-EQPT::IOM-  
1::IOMODULETYPE=BA9IX70AAB;

58. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Configuration*. Make the necessary changes and click *Ok* or *Apply*. Refer to [Figure 4](#).

59. Check status of card using the RTRV-EQPT command.

If using **EMS**, then refer to [Step 55](#) and [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command

Command Syntax: RTRV-EQPT: [TID]: [<src>]: [CTAG];

Command Example: **RTRV-EQPT;**

60. Is the module still faulted?

If **YES**, then go to [Step 80](#).

If **NO**, then go to [Step 79](#).

61. Has the module restored to service?

If **YES**, then go to [Step 79](#).

If **NO**, then continue to the next step if you have not yet already restored the IOM.

If you are repeating this step for a second time, then go to [Step 80](#).

62. Restore the replaced IOM to service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RST-EQPT command and go to [Step 59](#).

Command Syntax: RST-EQPT: [TID]: <equipmentId>: [CTAG];

Command Example: **RST-EQPT::IOM-1;**

63. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#). Then go to [Step 59](#).



**Caution:** Replacing a rear IOM will disrupt traffic.



**Caution:** If a rear IOM is disconnected or removed from the midplane, it must be replaced or reconnected and then the front IOM must be disconnected from the midplane and then reconnected. If this is not done in this sequence, the IOM will not be rebooted.



**Note:** The following steps will replace a rear IOM.

64. Do you need to replace a rear IOM?
  - If **DS1**, then disconnect the DS1 cables from the faulted module.
  - If **DS3/STS-1**, then disconnect the cables from the faulted DS3 or DS3/STS-1 I/O module.
  - If **rear protection**, then continue to the next step.
65. Remove the faulted IOM from service.
  - If using **EMS**, then continue to the next step.
  - If using **TL1**, then execute the RMV-EQPT command and go to [Step 67](#).
  - Command Syntax: `RMV-EQPT:[TID]:<equipmentId>:[CTAG];`
  - Command Example: `RMV-EQPT::IOM-1;`
66. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. Refer to [Figure 2](#).
67. Loosen the top and bottom screws and using the ejector handles, remove the faulted rear IOM.
68. Are you replacing a rear DS1 module?
  - If **YES**, then place a tie wrap into each tie wrap holder on the replacement DS1 module.
  - If **NO**, then continue to the next step.
69. Install the replacement rear IOM and tighten screws. Refer to [Table A](#) for part numbers and CLEI codes.
70. What type of module did you replace?
  - If any type of **protection module**, then continue to the next step.
  - If **DS1**, then reconnect the 64-pin Shielded DS1 In and Out cables on the rear DS1 I/O module, tighten the screw and use the tie-wrap.
  - If **DS3/STS-1**, then reconnect the RX (In) and TX (Out) cables on the rear module and tighten the BNC connectors.

71. Loosen screws and disconnect the corresponding **front** IOM module from the midplane, reseal it, tighten screws.
72. Wait for the card to initialize. This can take several minutes.
73. Restore the replaced IOM to service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RST-EQPT command and go to [Step 59](#).

Command Syntax: RST-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RST-EQPT::IOM-1;**

74. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module. Refer to [Figure 2](#). Then go to [Step 59](#).

75. Check status of card using the RTRV-EQPT command.

If using **EMS**, then refer to [Step 55](#) and [Figure 4](#).

If using **TL1**, then execute the RTRV-EQPT command

Command Syntax: RTRV-EQPT:[TID]:[<src>]:[CTAG];

Command Example: **RTRV-EQPT;**

76. Restore the replaced IOM to service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RST-EQPT command.

Command Syntax: RST-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RST-EQPT::IOM-1;**

77. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module. Refer to [Figure 2](#).

78. Is there still a FLT LED illuminated on the front module of the corresponding rear module that you replaced?

If **YES**, then go to [Step 80](#).

If **NO**, then continue to next step

79. Are there other IOMs with FLT LEDs illuminated?

If **YES**, then go to [Step 8](#).

If **NO**, then continue to next step

80. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

81.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**Table A. CLEI CODES Of DS1/DS3 MODULES**

| Part Number | Name                                                                                                        | CLEI Code         |
|-------------|-------------------------------------------------------------------------------------------------------------|-------------------|
| 89-0360-A   | DS-1 Front Module                                                                                           | BA9IAA0AAA        |
| 89-0361-A   | DS-3 Rear Module                                                                                            | BA9IB80AAA        |
| 89-0362-A   | DS-1 Rear I/O Module                                                                                        | BA9IBC0AAA        |
| 89-0362-B   |                                                                                                             | BA9IBC0AAB        |
| 89-0368-A   | DS-1 Rear I/O Protection Module                                                                             | BA9IBB0AAA        |
| 89-0369-A   | DS-3 Rear I/O Protection Module                                                                             | BA9IB90AAA        |
| 89-0382-A   | Octal DS-3/STS-1 Front Module<br>Revision B module is supported by software<br>revision 3.1.1.2 or greater. | BAA9UV0GAA        |
| 89-0382-B   |                                                                                                             | <b>BAA9UVZGAA</b> |
| 89-0383-A   | Octal DS-3/STS-1 Rear Module                                                                                | BAA9TW0GAA        |
| 89-0386-A   | Octal DS-3/STS-1 Rear Protection Module                                                                     | BAA9TU0GAA        |
| 89-0396-A   | E1 Front Module                                                                                             | BA2AV30GAA        |
| 89-0397-A   | Triple DS-3/STS-1 Front Module                                                                              | BA9IY04AAA        |
| 89-0398-A   | Octal DS-3/STS-1 Front Module                                                                               | BAA9UVXGAA        |
| 89-0410-A   | Triple DS-3/STS-1 Front Module with tone<br>detection                                                       | BA4A60ZFAA        |
| 89-0411-A   | Octal DS-3/STS-1 Front Module with tone<br>detection                                                        | BA4A701FAA        |
| 89-0414-A   | DS1/E1/J1 I/O Termination Module                                                                            | BA7ATP0FAA        |
| 89-0415-A   | DS1/E1/J1 I/O Rear                                                                                          | BA7A1P0FAA        |
| 89-0416-A   | DS1/E1/J1 A-link I/O Rear Card                                                                              | BA7A1X0FAA        |
| 89-0422-A   | Triple DS3 I/O Module                                                                                       | BA9AWV0FAA        |
| 89-0423-A   | Octal DS3 I/O Module                                                                                        | BA9AXW0FAA        |
| 89-0424-A   | Triple DS3 I/O Module With Tone Detect                                                                      | BA9AWX0FAA        |
| 89-0425-A   | Octal DS3 I/O Module With Tone Detect                                                                       | BA9AXY0FAA        |

| Part Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Name | CLEI Code |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| <p><b>Note 1:</b> Shaded part numbers have been “manufacture discontinued,” but are still supported.</p> <p><b>Note 2:</b> Usage of some modules is determined by the version of the system software, the chassis (i.e., 85-3004), or the application (i.e., VoIP and VToA).</p> <p><b>Note 3:</b> Octal DS3 modules cannot be installed in the original 85-3000 chassis. If using DS3 modules in the 85-3004/3007 chassis, the rear protection Module must be an Octal protection Module regardless of the DS3’s primary module type.</p> <p><b>Note 4:</b> After a transition period, rear triple DS3 modules will be replaced with rear octal DS3 modules but only three ports will be used.</p> |      |           |



## DLP-516 - CONNECT THE PLEXUS 9000 TO A CRAFT TERMINAL

**SUMMARY:** This procedure describes how to connect the Plexus 9000 to a terminal and to set up the terminal to use the craft interface.



**Note:** The craft cable part numbers are in the format of 45-2XXX-B-Y. The 3-digit XXX field indicates the cable length in feet. The B field is an indicator of cable characteristics such as connector type. The Y field indicates the revision level of the cable.

1. Obtain the following equipment:
  - VT100, or a PC with VT100 emulation
  - Telica craft cable (P/N 45-2xxx-1-0) or equivalent
2. Turn on your VT-100 terminal or open the PC VT-100 emulation program.
3. Do you have the Telica craft cable (P/N 45-2xxx-1-0)?
  - If **YES**, then go to [Step 5](#).
  - If **NO**, then continue on to next step.
4. Assemble the craft cable according to [Figure 1](#) using the pin outs listed [Table A](#). Your terminal may require a DB-9 or a DB-25 connection. The table lists the pins for a DB-9 to DB-9 cable or for a DB-9 to DB-25 cable.

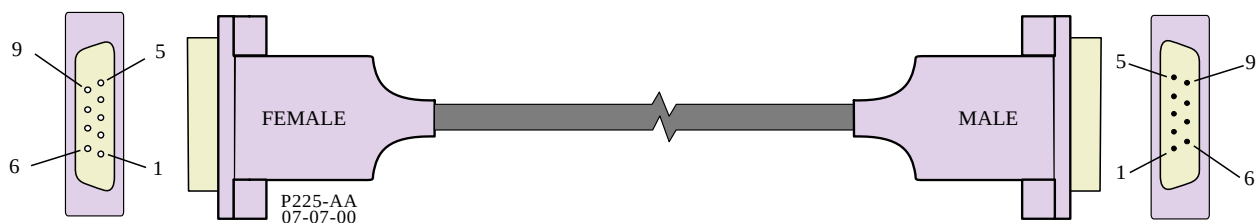


**Figure 1. Craft Cable**

5. Will you be attaching to the front SP/TMG card or to the rear card?
  - If **front** card, then continue to the next step.
  - If **rear** card, then go to [Step 7](#).

**Table A. Craft Cable (Null Modem) Pinout**

| Plexus 9000 (DTE)<br>DB-9 male | Direction and<br>Plexus 9000 Signal                     | Terminal (DTE)<br>DB-9 female | Terminal (DTE)<br>DB-25 female |
|--------------------------------|---------------------------------------------------------|-------------------------------|--------------------------------|
| 1 & 6                          | ← DCD (Data Carrier Detect) &<br>← DSR (Data Set Ready) | 4                             | 20                             |
| 2                              | ← RXD (Received Data)                                   | 3                             | 2                              |
| 3                              | → TXD (Transmitted Data)                                | 2                             | 3                              |
| 4                              | → DTR (Data Terminal Ready)                             | 1 & 6                         | 6 & 8                          |
| 5                              | ---- SG (Signal Ground)                                 | 5                             | 7                              |
| 7                              | → RTS (Request to Send)                                 | 8                             | 5                              |
| 8                              | ← CTS (Clear to Send)                                   | 7                             | 4                              |
| 9                              | No Connection (Not Used)                                | 9                             | 22                             |

T66-A

6. Attach your craft cable to the DB9 port labeled craft (J2) on the front SP/TMG card, as illustrated in [Figure 2](#) and then go to [Step 8](#).

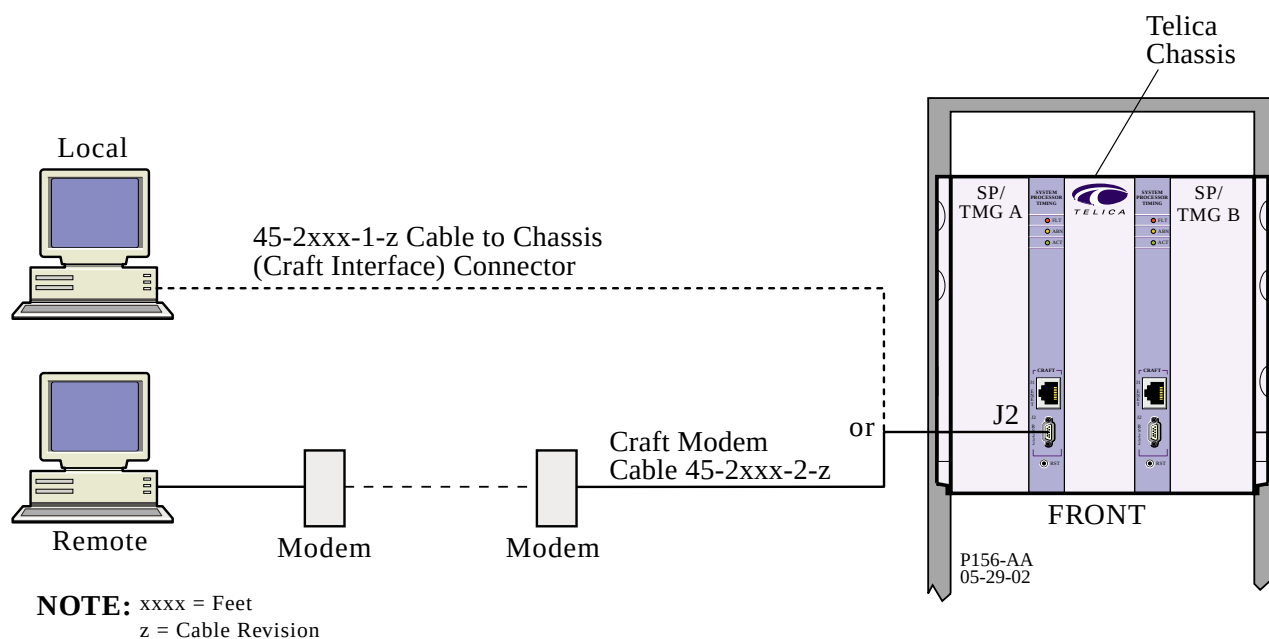


**Figure 2. Cabling to the Front SP for Craft Terminal**

7. Attach your craft cable to the DB9 port labeled craft (J3) on the rear SP/TMG card, as illustrated in [Figure 3](#).

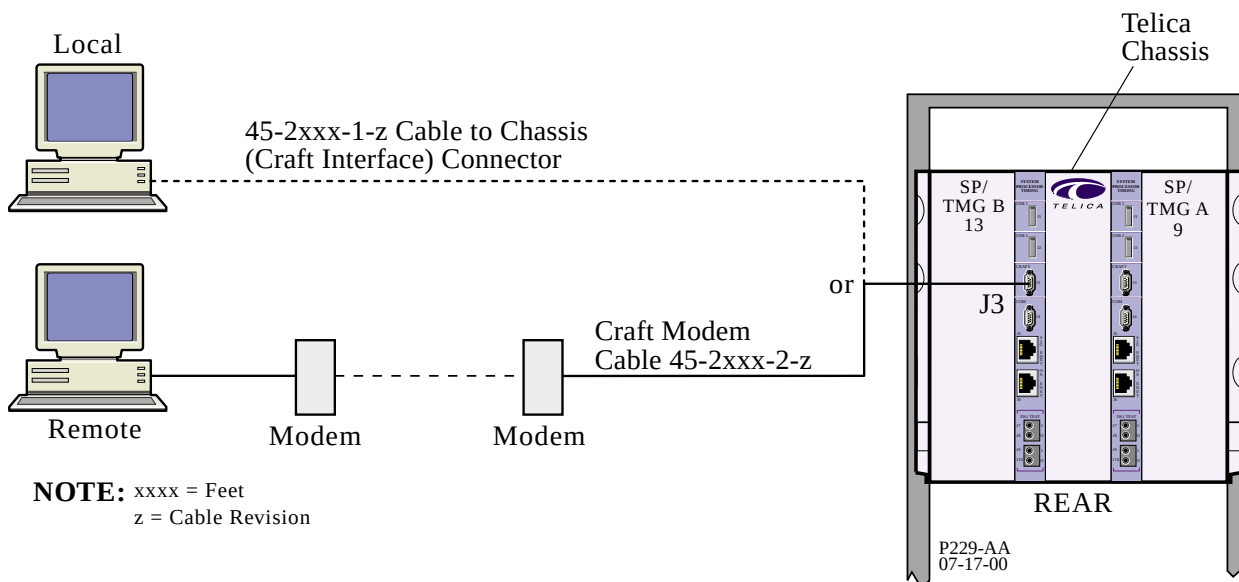


**Figure 3. Cabling to the Rear SP for Craft Terminal**

8. Attach the other end of the cable to your VT100 terminal, or PC with VT100 emulation.
9. If using a PC, execute the terminal emulation program (i.e., Hyperterminal)
10. Set up the craft terminal by entering the parameters listed in [Table B](#).

**Table B. Craft Terminal Parameters**

|                |          |
|----------------|----------|
| Emulation Mode | VT100    |
| Line Wrap      | Off      |
| Local Echo     | Off      |
| Column Width   | 80       |
| Rows or Lines  | 24 to 43 |
| Baud Rate      | 9600     |
| Data Bits      | 8        |
| Stop Bits      | 1        |
| Parity         | None     |
| Flow Control   | Xon/Xoff |
| T67-A          |          |

11. Press the **Semicolon** key on the keyboard ( ; ) to verify the terminal settings and cabling.
12. Did you receive a response?

If **YES**, then continue to next step.

If **NO**, then check cable and connections return to [Step 5](#).

13.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**NOTES:**

## DLP-532 - PERFORM LOOPBACKS

**SUMMARY:** This procedure provides the steps to perform DS1, DS3, STS-1 or OC loopbacks for testing line integrity by placing a port out-of service and issuing a loopback command. DS3 loops can only be line loopbacks and the DS3 ports do not respond to remote loop-up or loop-down codes unless the port is provisioned for C-Bit mode. Likewise, FEND loopbacks on a DS3 port can only be issued when operating in DS3 C-Bit mode. This procedure assumes that the port has been previously configured.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.



**Note:** If loopbacks have been inhibited, loopbacks cannot be done. To allow loopbacks, refer to **DLP-556**.



**Note:** T1 loopbacks cannot be done on ports of 79-0360 T1 modules

1. The following information is required in order to complete this procedure:
  - I/O Modules and the ports to be looped.
  - Parameters if required for reconfiguring.
2. Are you going to be using EMS or TL1 to check PM data and/or initialize T1 registers?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 61](#).

3. Select your task from the following and go to the indicated step.

**T1**

- Loop a T1 ..... [Step 5](#)
- Release or drop a T1 loop ..... [Step 14](#)
- Restore a T1 to service ..... [Step 16](#)

**T3**

- Loop a T3 ..... [Step 19](#)
- Release or drop a T3 loop ..... [Step 28](#)
- Restore a T3 to service ..... [Step 30](#)

**STS1**

- Loop a STS-1 ..... [Step 33](#)
- Release or drop an STS-1 loop..... [Step 42](#)
- Restore an STS-1 to service ..... [Step 44](#)

**OC**

- Loop an OC port..... [Step 47](#)
- Release or drop an OC loop ..... [Step 56](#)
- Restore an OC to service ..... [Step 58](#)
- Finished, no other task in the above list..... continue to the next step.

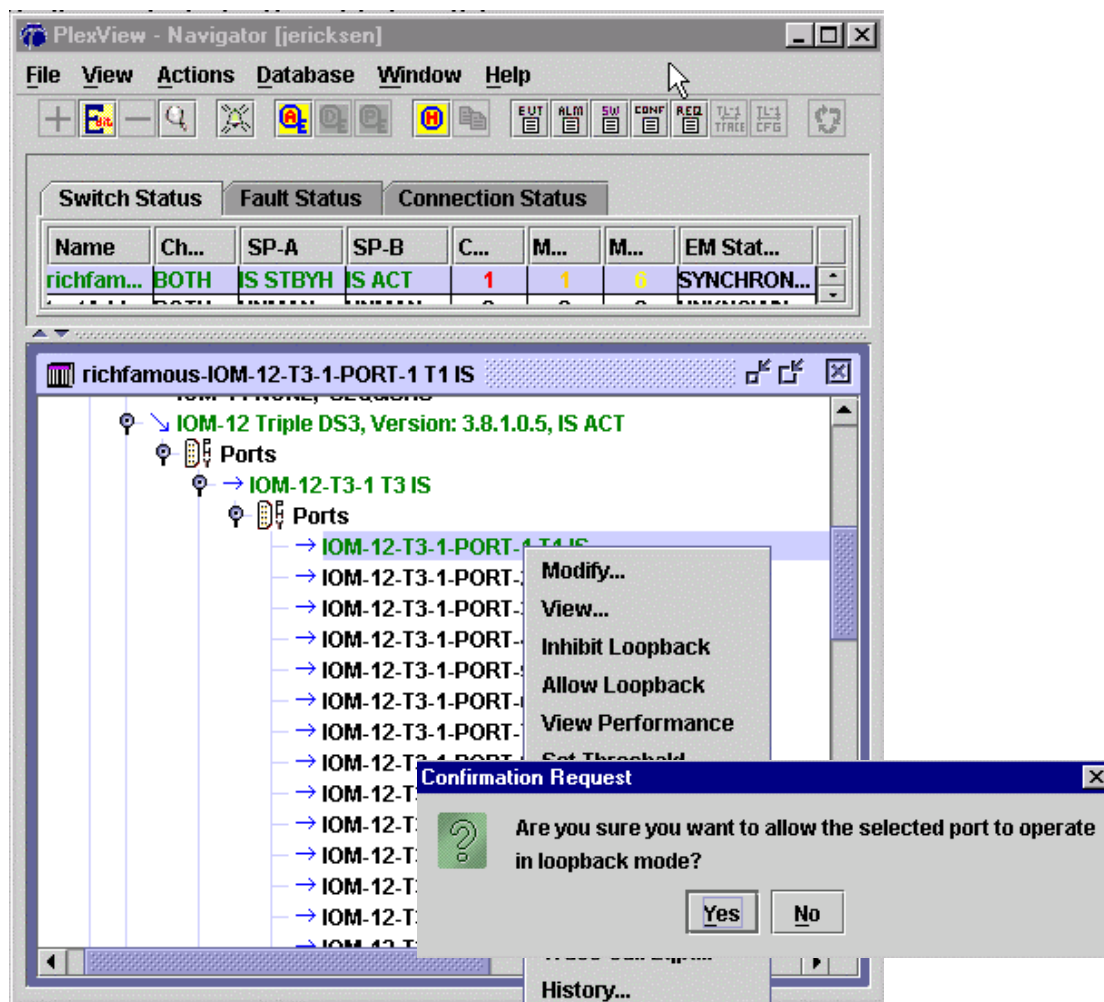
4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Do you need to allow loopbacks? Loopbacks are allowed by default.

If **YES**, then continue to the next step.

If **NO**, then go to [Step 9](#).

6. Allow loopbacks for the T1 port you are going to loop. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Allow Loopback*. At the *Confirmation Request* screen click *Yes* to allow loopbacks. See [Figure 1](#).



### Figure 1. Allowing Loopbacks

7. Is the port out-of-service (OOS)?  
  
If **YES**, then go to [Step 9](#).  
If **NO**, then continue to the next step.
8. Put the port out-of-service (OOS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Modify*. Change “Managed Primary State” to OOS and then click *Ok*. See [Figure 2](#).

PlexView - Modify T1 Port [richfamous]

Port ID: IOM-1-PORT-4

Configuration Oper. Info

Port Parameters

Port Type: NONE

Managed Primary State: OOS

Managed Secondary State: NONE

Name:

Line Buildout (0-655): 0

Signal Framing Format: ESF

Line Code: B8ZS

Out of Service Mode Output Type: AIS

Timing Reference: NONE

Interface Type: NETWORK

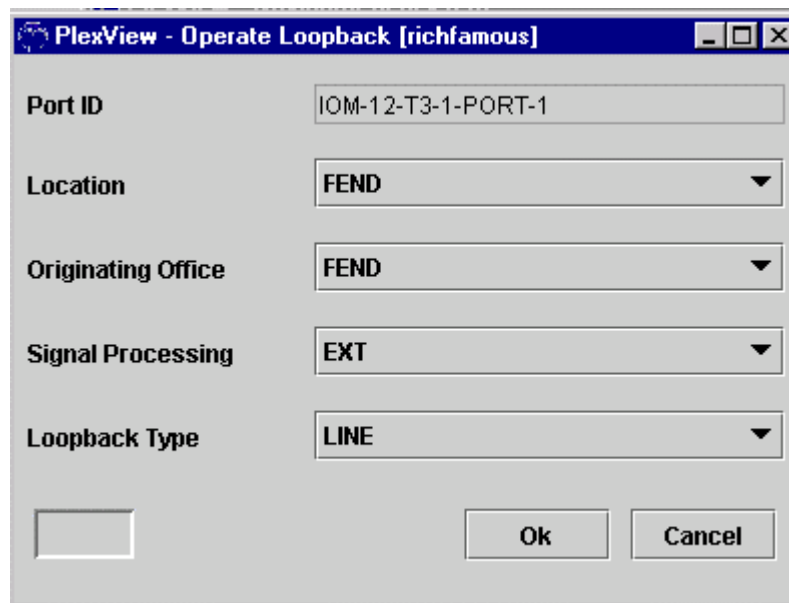
Ok Cancel Apply

Figure 2. Modify Configuration

9. Put the port in loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Operate Loopback*. Make changes if necessary and then click *Ok*. See [Figure 3](#).

Refer to [Figure 4](#) for an illustration of a near-end payload loopback and to [Figure 5](#) for a near-end line loopback. Refer to [Figure 6](#) for an illustration of a far-end payload loopback and to [Figure 7](#) for a far-end line loopback.





The image shows a software dialog box titled "PlexView - Operate Loopback [richfamous]". It contains several input fields and dropdown menus. The "Port ID" field is set to "IOM-12-T3-1-PORT-1". The "Location" dropdown is set to "FEND". The "Originating Office" dropdown is set to "FEND". The "Signal Processing" dropdown is set to "EXT". The "Loopback Type" dropdown is set to "LINE". At the bottom left is an empty rectangular box. At the bottom right are "Ok" and "Cancel" buttons.

**Figure 3. Loopbacks**

**Parameters and Descriptions:**

|                    |                                                                                                                                                                                                                         |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Location           | = FEND - Loopback occurs at Far end.<br>= NEND - Loopback occurs at Near end.                                                                                                                                           |
| Originating Office | = FEND - Far end office is originating the signal to be looped back..<br>= NEND - Near end office is originating the signal to be looped back..<br>= BOTH - Both offices are originating the signal to be looped back.. |
| Signal Processing  | = EXT - Loopback is with external signal processing..<br>= INT - Loopback is with internal signal processing..                                                                                                          |
| Loopback Type      | = LINE - 1.544 Mbps loopback signal.<br>= PAYLOAD - 1.536 Mbps loopback signal.                                                                                                                                         |

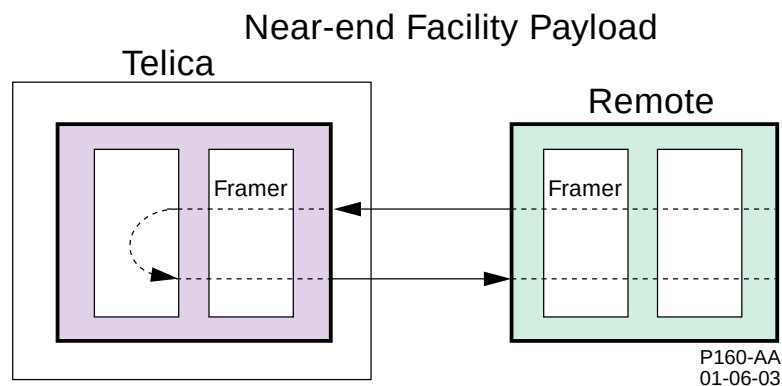


**Figure 4. Near-end Payload Loopback**

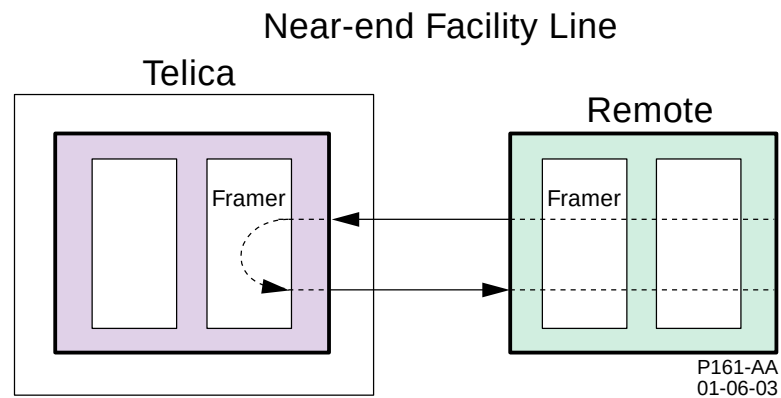


**Figure 5. Near-End Line Loopback**

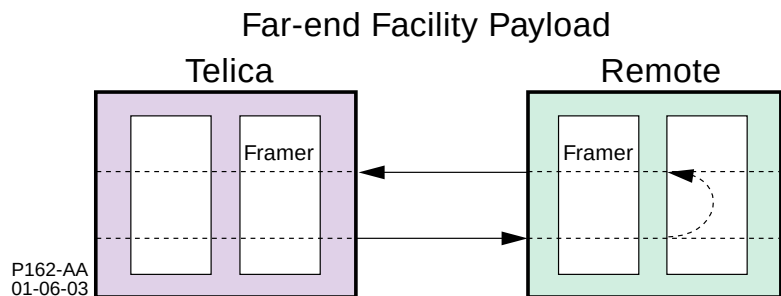


**Figure 6. Far-end Payload Loopback**

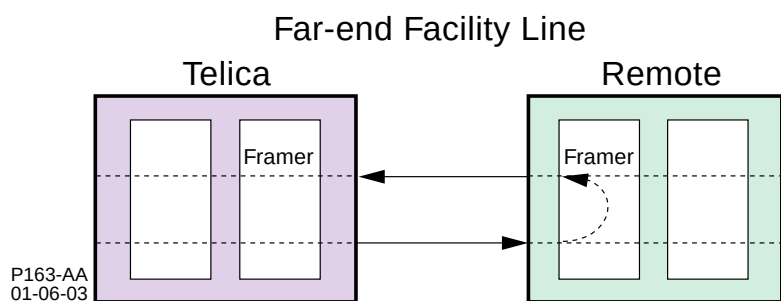


**Figure 7. Far-end Line Loopback**

10. Connect the DS1 test patch cables at the test set and at the DSX-1 cross-connect for the port to be tested.
  - Test Set Transmit (TX) output jack to the channel IN jack at the DSX.
  - Test set RECEIVER (RX) input jack to the channel OUT jack at the DSX.
11. Configure the test set transmission controls according to your company's policy for testing DS1 ports. Reference the test set's manual.

12. Did the test set run error free for the time specified by your company policy for a DS1 line?  
  
If **YES**, then continue to the next step.  
If **NO**, verify port settings and cabling and go to [Step 10](#).
13. Do you want to release the loopback(s) or loop another port?  
  
If **release loopback**, then continue to the next step.  
If **loop another port**, then go to [Step 5](#).  
If **neither**, then go to [Step 3](#).
14. Release a DS1 loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Release Loopback*. At confirmation screen, click *Yes*.
15. Do you want to restore the port to service or release another loop?  
  
If **restore the port to service**, then continue to the next step.  
If **release another loop**, then go to [Step 14](#).  
If **neither**, then go to [Step 3](#).
16. Provision the DS-1 port in-service (IS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Modify*. Change “Managed Primary State” to *IS* and then click *Ok*. See [Figure 2](#).
17. Verify the DS1 port is IS.
18. Do you want to loop another T1 port?  
  
If **YES**, then go to [Step 6](#).  
If **NO**, then go to [Step 3](#).
19. Do you need to allow T3 loopbacks? Loopbacks are allowed by default.  
  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 9](#).
20. Allow loopbacks for the T3 port you are going to loop. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Allow Loopback*. At the *Confirmation Request* screen click *Yes* to allow loopbacks. See [Figure 1](#).
21. Is the port out-of-service (OOS)?  
  
If **YES**, then go to [Step 9](#).  
If **NO**, then continue to the next step.
22. Put the port out-of-service (OOS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Modify*. Change “Managed Primary State” to *OOS* and then click *Ok*. See [Figure 2](#).

23. Put the port in loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Operate Loopback*. Make changes if necessary and then click *Ok*. See Figure 8. See Figure 9 for illustration of DS3 loopbacks.

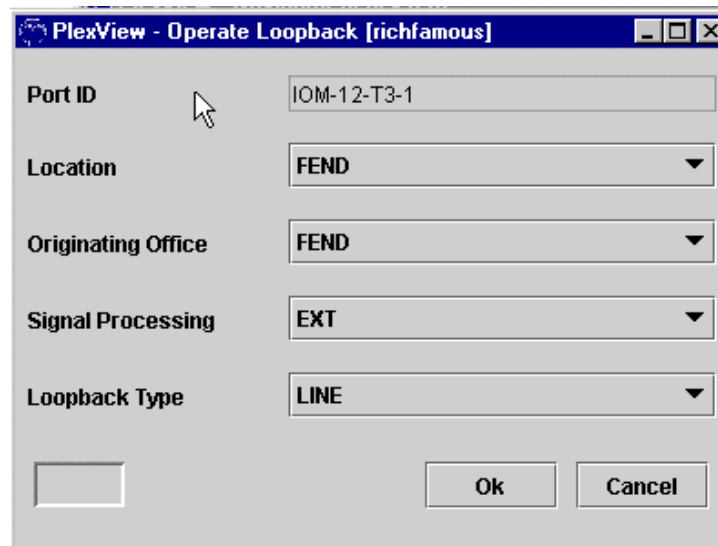


Figure 8. T3 Loopbacks

**Parameters and Descriptions:**

|                    |                                                                                                                                                                                                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Location           | = FEND - Loopback occurs at Far end.<br>= NEND - Loopback occurs at Near end.                                                                                                                                                                                                          |
| Originating Office | = FEND - Far end office is originating the signal to be looped back. DS3 ports must be in C-Bit mode.<br>= NEND - Near end office is originating the signal to be looped back.<br>= BOTH - Both offices are originating the signal to be looped back. DS3 ports must be in C-Bit mode. |
| Signal Processing  | = EXT - Loopback is with external signal processing.<br>= INT - Loopback is with internal signal processing.                                                                                                                                                                           |
| Loopback Type      | = LINE - 44.736 Mbps loopback signal.                                                                                                                                                                                                                                                  |

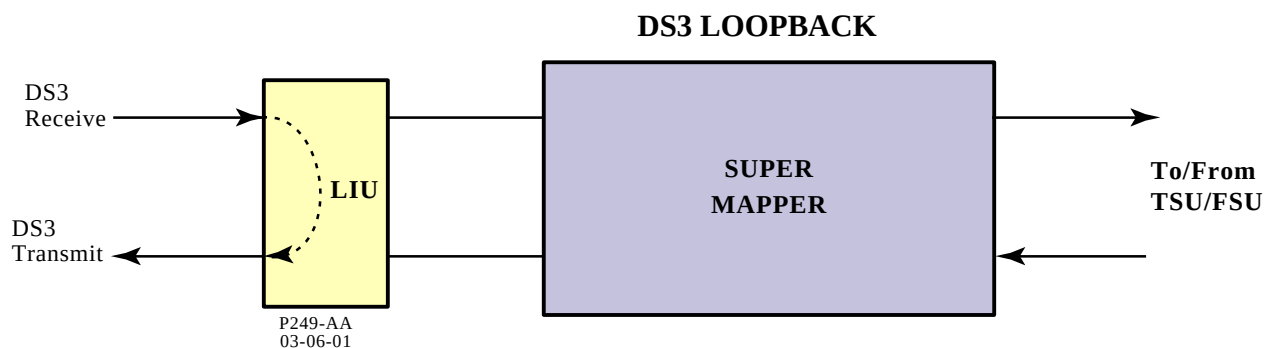


Figure 9. DS3 Loopback

24. Connect the DS3 test patch cables at the test set and at the DSX-3 cross-connect for the port to be tested.
  - Test Set Transmit (TX) output jack to the channel IN jack at the DSX.
  - Test set RECEIVER (RX) input jack to the channel OUT jack at the DSX.
25. Configure the test set transmission controls according to your company's policy for testing DS3 ports. Reference the test set's manual.
26. Did the test set run error free for the time specified by your company policy for a DS3 line?

If **YES**, then continue to the next step.

If **NO**, verify port settings and cabling and go to [Step 24](#).
27. Do you want to release the loopback(s) or loop another port?

If **release loopback**, then continue to the next step.

If **loop another port**, then go to [Step 19](#).

If **neither**, then go to [Step 3](#).
28. Release the DS3 loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Release Loopback*. At confirmation screen, click *Yes*.
29. Do you want to restore the port to service or release another loop?

If **restore the port to service**, then continue to the next step.

If **release another loop**, then go to [Step 28](#).

If **neither**, then go to [Step 3](#).
30. Provision the DS3 port in-service (IS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Modify*. Change "Managed Primary State" to *IS* and then click *Ok*.
31. Verify the DS3 line entry.
32. Is there another port to be tested?

If **YES**, then go to [Step 19](#).

If **NO**, then go to [Step 3](#).
33. Do you need to allow STS1 loopbacks? Loopbacks are allowed by default.

If **YES**, then continue to the next step.

If **NO**, then go to [Step 35](#).
34. Allow loopbacks for the STS1 port you are going to loop. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Allow Loopback*. At the *Confirmation Request* screen click *Yes* to allow loopbacks. See [Figure 1](#).

35. Is the port out-of-service (OOS)?  
If **YES**, then go to [Step 37](#).  
If **NO**, then continue to the next step.
36. Put the port out-of-service (OOS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Modify*. Change “Managed Primary State” to OOS and then click *Ok*.
37. Put the port in loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Operate Loopback*. Make changes if necessary and then click *Ok*. An STS-1 loopback is illustrated in [Figure 10](#).

**Parameters and Descriptions:**

|                    |                                                                                                                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Location           | = FEND - Loopback occurs at Far end.<br>= NEND - Loopback occurs at Near end.                                                                                                                                        |
| Originating Office | = FEND - Far end office is originating the signal to be looped back.<br>= NEND - Near end office is originating the signal to be looped back.<br>= BOTH - Both offices are originating the signal to be looped back. |
| Signal Processing  | = EXT - Loopback is with external signal processing.<br>= INT - Loopback is with internal signal processing.                                                                                                         |
| Loopback Type      | = LINE - 51.84 Mbps loopback signal.                                                                                                                                                                                 |

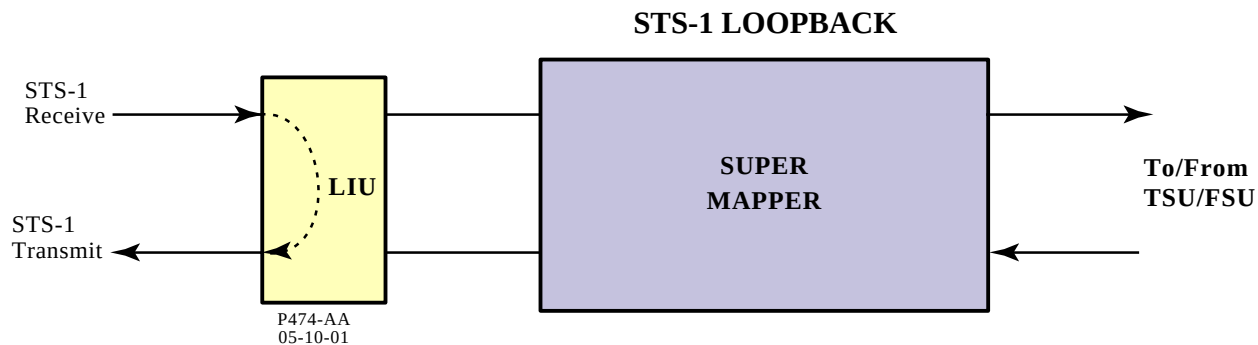


**Figure 10. STS-1 Loopback**

38. Connect the STS-1 test patch cables at the test set and at the DSX- cross-connect for the port to be tested.
- Test Set Transmit (TX) output jack to the channel IN jack at the DSX.
  - Test set RECEIVER (RX) input jack to the channel OUT jack at the DSX.
39. Configure the test set transmission controls according to your company’s policy for testing STS-1 ports. Reference the test set’s manual.

40. Did the test set run error free for the time specified by your company policy for a STS-1 line?  
  
If **YES**, then continue to the next step.  
If **NO**, verify port settings and cabling and go to [Step 37](#).
41. Do you want to release the loopback(s) or loop another port?  
  
If **release loopback**, then continue to the next step.  
If **loop another port**, then go to [Step 33](#).  
If **neither**, then go to [Step 3](#).
42. Release the STS1 loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Release Loopback*. At confirmation screen, click *Yes*.
43. Do you want to restore the port to service or release another loop?  
  
If **restore the port to service**, then continue to the next step.  
If **release another loop**, then go to [Step 42](#).  
If **neither**, then go to [Step 3](#).
44. Provision the STS1 port in-service (IS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Modify*. Change “Managed Primary State” to *IS* and then click *Ok*.
45. Verify the STS-1 line entry.
46. Is there another port to be tested?  
  
If **YES**, then go to [Step 33](#).  
If **NO**, then go to [Step 3](#).
47. Do you need to allow OC loopbacks? Loopbacks are allowed by default.  
  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 49](#).
48. Allow loopbacks for the OC port you are going to loop. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Allow Loopback*. At the *Confirmation Request* screen click *Yes* to allow loopbacks. See [Figure 1](#).
49. Is the port out-of-service (OOS)?  
  
If **YES**, then go to [Step 51](#).  
If **NO**, then continue to the next step.
50. Put the port out-of-service (OOS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Modify*. Change “Managed Primary State” to *OOS* and then click *Ok*.

51. Put the port in loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Operate Loopback*. Make changes if necessary and then click *Ok*.

**Parameters and Descriptions:**

- Location = FEND - Loopback occurs at Far end.  
= NEND - Loopback occurs at Near end.
- Originating Office = FEND - Far end office is originating the signal to be looped back.  
= NEND - Near end office is originating the signal to be looped back.  
= BOTH - Both offices are originating the signal to be looped back.
- Signal Processing = EXT - Loopback is with external signal processing.  
= INT - Loopback is with internal signal processing.
- Loopback Type = LINE – 155.52 Mbps loopback signal for OC3.  
= LINE – 622.08 Mbps loopback signal for OC3.

52. Connect the fiber test patch cables at the test set and at the fiber entrance panel for the port to be tested.
53. Configure the test set transmission controls according to your company's policy for testing SONET OC ports. Reference the test set's manual.
54. Did the test set run error free for the time specified by your company policy for the OC-3 or OC-12 line?
- IF **YES**, then continue to the next step.  
If **NO**, verify port settings and cabling and go to [Step 51](#).
55. Do you want to release the loopback(s) or loop another port?
- If **release loopback**, then continue to the next step.  
If **loop another port**, then go to [Step 47](#).  
If **neither**, then go to [Step 3](#).
56. Release an OC loopback. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Release Loopback*. At confirmation screen, click *Yes*.
57. Do you want to restore the port to service or release another loop?
- If **restore the port to service**, then continue to the next step.  
If **release another loop**, then go to [Step 56](#).  
If **neither**, then go to [Step 3](#).
58. Provision the OC port in-service (IS). Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*. Right-click desired port, select *Modify*. Change "Managed Primary State" to *IS* and then click *Ok*.



59. Verify the OC line entry.

60. Do you want to loop another OC port?

If **YES**, then go to [Step 47](#).

If **NO**, then go to [Step 3](#).

61. Select your task from the following and go to the indicated step.

**T1**

- Loop a T1 ..... [Step 63](#)
- Release or drop a T1 loop ..... [Step 72](#)
- Restore a T1 to service ..... [Step 74](#)

**T3**

- Loop a T3 ..... [Step 77](#)
- Release or drop a T3 loop ..... [Step 86](#)
- Restore a T3 to service ..... [Step 88](#)

**STS1**

- Loop a STS-1 ..... [Step 91](#)
- Release or drop an STS-1 loop..... [Step 100](#)
- Restore an STS-1 to service ..... [Step 102](#)

**OC**

- Loop an OC/STM port ..... [Step 105](#)
- Release or drop an OC/STM loop ..... [Step 114](#)
- Restore an OC/STM to service..... [Step 116](#)
- Finished, no other task in the above list..... continue to the next step.

62.  **YOU HAVE COMPLETED THIS PROCEDURE.**

63. Do you need to allow loopbacks? Loopbacks are allowed by default.

If **YES**, then continue to the next step.

If **NO**, then go to [Step 65](#).

64. Allow a port of the Plexus 9000 to respond to a remote T1 loopback request using the ALW-LPBK-T1 command.

Command Syntax: ALW-LPBK-T1: [TID]:<src>: [CTAG];

**parameters:**

src = IOM-{1 . . . 17}-PORT-{1 . . . 28} –DS1 IOM port that will allow the Plexus 9000 to respond to loopback requests.  
= IOM-{1 . . . 17}-T3-{1 . . . 8}PORT-{1 . . . 28} –DS3 IOM port that will allow the Plexus 9000 to respond to loopback requests.  
= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} –STS-1 IOM port that will allow the Plexus 9000 to respond to loopback requests.

Command Example: ALW-LPBK-T1::IOM-1-PORT-1;

65. Configure the DS-1 facility line **out of service** using the ED-T1 command.

Command Syntax: ENT-T1:[TID]:<ds\_id>:[CTAG]::  
[EQLZ=<eqlz>][FMT=<fmt>],  
[LINECDE=<linecde>],[OMODE=<omode>],  
[TMGREF=<tmgref>],[IFTYPE=<iftype>]:  
[<pst>],[<sst>];

**parameters**

ds\_id = IOM-{1 . . . 17}-PORT-{1 . . . 28} – DS1 port of DS1 IOM.  
= IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28} - DS3 port of DS3/STS-1 IOM.  
= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} - STS-1 port of DS3/STS-1 IOM.  
pst = IS - In-Service.  
= OOS - Out-Of-Service, implied OOS-MA.  
A null value means no change to the current value.  
sst = AINS - Automatic, in service.  
A null value means no change to the current value.

Command Example: ED-T1::iom-4-port-1::::oos;

66. Verify the DS1 line entry by using the RTRV-T1 command.

Command Syntax: RTRV-T1:[TID]:<ds\_id>:CTAG::;

**parameters:**

ds\_id = IOM-{1 . . . 17}  
= IOM-{1 . . . 17}-PORT-{1 . . . 28} – DS1 port of DS1 IOM.  
= IOM-{1 . . . 17}-T3-{1 . . . 8} - DS3 port of DS3/STS-1 IOM.  
= IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28} - DS3 port of DS3/STS-1 IOM.  
= IOM-{1 . . . 17}-STS1-{1 . . . 8} – STS-1 port of DS3/STS-1 IOM.  
= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} - STS-1 port of DS3/STS-1 IOM.

Command Example: RTRV-T1::iom-4-port-1::;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ds_id>:EQLZ=<eqlz>,FMT=<fmt>,LINECDE=<linecde>,
OMODE=<omode>,TMGREF=<tmgref>,IFTYPE=<iftype>:<pst>,
<sst>"
;
```

67. Put the port in loopback by issuing the OPR-LPBK-T1 command with the parameters for your loopback. See [Figure 4](#) for an illustration of a near-end payload loopback and [Figure 5](#) for a near-end line loopback. See [Figure 6](#) for an illustration of a far-end payload loopback and [Figure 7](#) for a far-end line loopback.

Command Syntax: OPR-LPBK-T1:[TID]:<lpbk\_id>:[CTAG]::  
[<locn>],[<orgn>],[<intext>],  
[<lpbktype>];

**parameters:**

|          |                                                                                                                                                                                                                         |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lpbk_id  | = IOM-{1 ... 17}-PORT-{1 ... 28} – DS1 port of DS1 IOM.<br>= IOM-{1 ... 17}-T3-{1 ... 8}-PORT-{1 ... 28} - DS3 port of DS3/STS-1 IOM.<br>= IOM-{1 ... 17}-STS1-{1 ... 8}-PORT-{1 ... 28} - STS-1 port of DS3/STS-1 IOM. |
| locn     | = FEND - Loopback occurs at Far end.<br>= NEND - Loopback occurs at Near end.                                                                                                                                           |
| orgn     | = FEND - Far end office is originating the signal to be looped back..<br>= NEND - Near end office is originating the signal to be looped back.<br>= BOTH - Both offices are originating the signal to be looped back.   |
| intext   | = EXT - Loopback is with external signal processing..<br>= INT - Loopback is with internal signal processing..                                                                                                          |
| lpbktype | = LINE - 1.544 Mbps loopback signal.<br>= PAYLOAD - 1.536 Mbps loopback signal.                                                                                                                                         |

Command Example: OPR-LPBK-T1::iom-4-port-1::fend,nend,,line;

Command Example: OPR-LPBK-T1::iom-4-port-1::nend,fend,,payload;

68. Connect the DS1 test patch cables at the test set and at the DSX-1 cross-connect for the port to be tested.

- Test Set Transmit (TX) output jack to the channel IN jack at the DSX.
- Test set RECEIVER (RX) input jack to the channel OUT jack at the DSX.

69. Configure the test set transmission controls according to your company's policy for testing DS1 ports. Reference the test set's manual.

70. Did the test set run error free for the time specified by your company policy for a DS1 line?

IF **YES**, then continue to the next step.

If **NO**, verify port settings and cabling and go to [Step 68](#).

71. Do you want to release the loopback(s) or loop another port?

If **release loopback**, then continue to the next step.

If **loop another port**, then go to [Step 63](#).

If **neither**, then go to [Step 61](#).

72. Remove a DS1 loopback using the RLS-LPBK command.

Command Syntax:    RLS-LPBK-T1:[TID]:<lpbk\_id>:[CTAG]::  
                          [<locn>],[<orgn>],[<intext>],  
                          [<lpbktype>;

**Parameters:**

lpbk\_id            = IOM-{1 . . . 17}-PORT-{1 . . . 28} – DS1 port of DS1 IOM  
                     = IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28} - DS3 port of  
                     DS3/STS-1 IOM  
                     = IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} - STS-1 port  
                     of DS3/STS-1 IOM  
locn                = FEND - Far end is where the loopback occurs.  
                     = NEND - Near end is where the loopback occurs.  
orgn                = FEND - Far end office is originating the signal to be looped  
                     back.  
                     = NEND - Near end office is originating the signal to be looped  
                     back.  
                     = BOTH - Both offices are originating the signal to be looped  
                     back.  
intext              = EXT - Loopback is with external signal processing.  
                     = INT - Loopback is with internal signal processing.  
lpbktype           = LINE - 1.544 Mbps loopback signal.  
                     = PAYLOAD - 1.536 Mbps loopback signal.

Command Example: RLS-LPBK-T1:: iom-4-port-1::;

73. Do you want to restore the port to service or release another loop?

If **restore the port to service**, then continue to the next step.

If **release another loop**, then go to [Step 72](#).

If **neither**, then go to [Step 61](#).

74. Configure the DS-1 port **in-service** using the ED-T1 command.

Command Syntax: ED-T1:[TID]:<ds\_id>:[CTAG]::  
[EQLZ=<eqlz>],[FMT=<fmt>],  
[LINECDE=<linecde>],[OMODE=<omode>],  
[TMGREF=<tmgref>],[IFTYPE=<iftype>]:  
[<pst>],[<sst>];

**parameters:**

ds\_id = IOM-{1 . . . 17}-PORT-{1 . . . 28} – DS1 port of DS1 IOM  
= IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28} - DS3 port of DS3/STS-1 IOM  
= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} - STS-1 port of DS3/STS-1 IOM  
eqlz = 1 . . . 655- Distance in feet from cross-connect.  
= **0**- default value and indicates not applicable.  
fmt = **ESF** - Extended Superframe - default.  
= SF - Superframe.  
= ESF\_NOFDL –Extended Superframe – No Facilities Data Link  
linecde = AMI - Alternate Mark Inversion (bipolar).  
= **B8ZS** - Bipolar with 8-Zero Substitution – default.  
omode = NORM - cross-connected data if mapped, idle signal as specified by the IDLE keyword if not mapped.  
= AIS - Alarm Indication Signal.  
= **QRSF** - Quasi-Random Signal – Framed.  
= QRSU - Quasi-Random Signal – Unframed.  
ifType = **NETWORK** – T1 port affects the network side.  
= USER – T1 port affects the user side  
pst = IS - In-Service.  
= OOS - Out-Of-Service, implied OOS-MA.  
A null value means no change to the current value  
sst = AINS = Automatic, in service  
A null value means no change to the current value

Command Example: ED-T1::iom-4-port-1::::is;

75. Verify the DS1 line entry by using the RTRV-T1 command. Refer to [Step 66](#) for command syntax.

Command Example: RTRV-T1::iom-4-port-1;

76. Do you want to loop another T1 port?

If **YES**, then go to [Step 63](#).

If **NO**, then go to [Step 61](#).

77. Do you need to allow loopbacks? Loopbacks are allowed by default.

If **YES**, then continue to the next step.

If **NO**, then go to [Step 79](#).

78. Allow a port of the Plexus 9000 to respond to a remote T3 loopback request using the ALW-LPBK-T3 command.

Command Syntax: ALW-LPBK-T3:[TID]:<src>:[CTAG];

**parameters:**

src = IOM-{1 . . . 17}-T3-{1 . . . 8} - DS3 port of DS3/STS-1 I/O module

Command Example: ALW-LPBK-T3::IOM-1-T3-1;

79. Configure the DS-3 facility line **out of service** using the ED-T3 command.

Command Syntax: ED-T3:[TID]:<ds\_id>:[CTAG]::  
[AISC=<aisc>],[AIST=<aist>],  
[FMT=<fmt>],[IDLE=<idle>],[LBO=<lbo>],  
[LINECDE=<linecde>],[MAP=<map>],  
[OMODE=<omode>],[PBIT=<pbit>],  
[XBIT=<xbit>],[XBITRCV=<xbitrcv>],  
[XPOL=<xpol>]:[<pst>],[<sst>];

**Input parameters:**

ds\_id = IOM-{1 . . . 17}-T3-{1 . . . 8} - T3 of I/O module

pst = IS - In-Service

= OOS - Out-Of-Service

A null value means no change to the current value

sst = AINS – Automatic, in service

A null value means no change to the current value

Command Example: ED-T3::IOM-5-T3-2::::OOS;

80. Verify the DS-3 line entry by using the RTRV-T3 command.

Command Syntax: RTRV-T3:[TID]:<ds\_id>:CTAG::;

**parameters:**

ds\_id = IOM-{1 . . . 17}-T3-{1 . . . 8}

Command Example: RTRV-T3::iom-5-T3-2;

81. Put the port in loopback by issuing the OPR-LPBK-T3 command with the parameters for your loopback. Refer to [Figure 9](#).

Command Syntax: OPR-LPBK-T3:[TID]:<lpbk\_id>:[CTAG]::  
[<locn>],[<orgn>],[<intext>],  
[<lpbktype>;

**parameters:**

lpbk\_id = IOM-{1 . . . 17}-T3-{1 . . . 8} - AID for the port on a T3 card to be looped.

locn = FEND - Loopback occurs at Far end.  
= NEND - Loopback occurs at Near end.

orgn = FEND - Far end office is originating the signal to be looped back. DS3 ports must be in C-Bit mode.  
= NEND - Near end office is originating the signal to be looped back.  
= BOTH - Both offices are originating the signal to be looped back. DS3 ports must be in C-Bit mode.

intext = EXT - Loopback is with external signal processing.  
= INT - Loopback is with internal signal processing.

lpbktype = LINE - 44.736 Mbps loopback signal.

Command Example: OPR-LPBK-T3::IOM-4-T3-3:::NEND,NEND,,  
LINE;

82. Connect the DS3 test patch cables at the test set and at the DSX-3 cross-connect for the port to be tested.

- Test Set Transmit (TX) output jack to the channel IN jack at the DSX.
- Test set RECEIVER (RX) input jack to the channel OUT jack at the DSX.

83. Configure the test set transmission controls according to your company's policy for testing DS3 ports. Reference the test set's manual.

84. Did the test set run error free for the time specified by your company policy for a DS3 line?

IF **YES**, then continue to the next step.

If **NO**, verify port settings and cabling and go to [Step 80](#).

85. Do you want to release the loopback(s) or loop another port?

If **release loopback**, then continue to the next step.

If **loop another port**, then go to [Step 77](#).

If **neither**, then go to [Step 61](#).

86. Release the DS3 loopback using the RLS-LPBK command.

Command Syntax: RLS-LPBK-T3:[TID]:<lpbk\_id>:[CTAG]::  
[<locn>],[<orgn>],[<intext>],  
[<lpbktype>;

**Parameters:**

lpbk\_id = IOM-{1 . . . 17}-T3-{1 . . . 8} T3 port to be looped.  
locn = FEND - Loopback occurs at Far end.  
= NEND - Loopback occurs at Near end.  
orgn = FEND - Far end office is originating the signal to be looped  
back.  
= NEND - Near end office is originating the signal to be looped  
back.  
= BOTH - Both offices are originating the signal to be looped  
back.  
intext = EXT - Loopback is with external signal processing.  
= INT - Loopback is with internal signal processing.  
lpbktype = LINE - 44.736 Mbps loopback signal.

Command Example: RLS-LPBK-T3::iom-4-T3-2::;

87. Do you want to restore the port to service or release another loop?

If **restore the port to service**, then continue to the next step.

If **release another loop**, then go to [Step 86](#).

If **neither**, then go to [Step 61](#).

88. Configure the DS-3 facility line **in-service** using the ED-T3 command. Refer to [Step 79](#) for command syntax.

Command Example: ED-T3::iom-4-T3-2:::is;

89. Verify the DS3 line entry by using the RTRV-T3 command. Refer to [Step 80](#) for command syntax.

Command Example: RTRV-T3::iom-4-T3-2::;

90. Is there another port to be tested?

If **YES**, then go to [Step 77](#).

If **NO**, then go to [Step 61](#).

91. Do you need to allow loopbacks? Loopbacks are allowed by default.

If **YES**, then continue to the next step.

If **NO**, then go to [Step 93](#).



92. Allow a port of the Plexus 9000 to respond to a remote STS-1 loopback request using the ALW-LPBK-STS1 command.

Command Syntax: ALW-LPBK-STS1:[TID]:<src>:[CTAG];

**parameters:**

src = IOM-{1 ... 17}-STS1-{1 ... 8} – STS-1 port of DS3/STS-1 IOM

Command Example: ALW-LPBK-T3::IOM-1-PORT-1;

93. Configure the STS-1 facility line **out of service** using the ED-STS1 command.

Command Syntax: ED-STS1:[TID]:<sts\_id>:[CTAG]::  
[EXPTRC=<exptrc>],[STSMAP=<stsmmap>],  
[TRC=<trc>],[LBO=<lbo>],  
[OMODE=<omode>]:[<pst>],[<sst>];

Command Example: ED-STS1::iom-1-STS1-1::::00s;

94. Verify the STS-1 line entry by using the RTRV-STS1 command.

Command Syntax: RTRV-STS1:[TID]:<sts\_id>:CTAG::;

**parameters:**

sts\_id = IOM-{1 ... 17}-STS1-{1 ... 8}

Command Example: RTRV-STS1::iom-5-STS1-2;

95. Put the port in loopback by issuing the OPR-LPBK-STS1 command with the parameters for your loopback. An STS-1 loopback is illustrated in [Figure 10](#).

Command Syntax: OPR-LPBK-STS1:[TID]:<lpbk\_id>:[CTAG]::  
[<locn>],[<orgn>],[<intext>],  
[<lpbktype>];

**parameters:**

lpbk\_id = IOM-{1 ... 17}-STS1-{1 ... 8} - STS-1 port to be looped.

locn = FEND - Loopback occurs at Far end.

= NEND - Loopback occurs at Near end.

orgn = FEND - Far end office is originating the signal to be looped back.

= NEND - Near end office is originating the signal to be looped back.

= BOTH - Both offices are originating the signal to be looped back.

intext = EXT - Loopback is with external signal processing.

= INT - Loopback is with internal signal processing.

lpbktype = LINE - 51.84 Mbps loopback signal.

Command Example: OPR-LPBK-STS1::IOM-4-STS1-3:::NEND, NEND  
,, LINE;

96. Connect the STS-1 test patch cables at the test set and at the DSX- cross-connect for the port to be tested.

- Test Set Transmit (TX) output jack to the channel IN jack at the DSX.
- Test set RECEIVER (RX) input jack to the channel OUT jack at the DSX.

97. Configure the test set transmission controls according to your company's policy for testing STS-1 ports. Reference the test set's manual.

98. Did the test set run error free for the time specified by your company policy for a STS-1 line?

IF **YES**, then continue to the next step.

If **NO**, verify port settings and cabling and go to [Step 91](#).

99. Do you want to release the loopback(s) or loop another port?

If **release loopback**, then continue to the next step.

If **loop another port**, then go to [Step 91](#).

If **neither**, then go to [Step 61](#).

100. Remove the STS-1 loopback using the RLS-LPBK-STS1 command.

Command Syntax: RLS-LPBK-STS1:[TID]:<lpbk\_id>:[CTAG]::  
[<locn>],[<orgn>],[<intext>],  
[<lpbktype>;

**Parameters:**

|          |                                                                                                                                                                                                                      |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lpbk_id  | = IOM-{1 . . . 17}-STS1-{1 . . . 8} - STS-1 port to be looped.                                                                                                                                                       |
| locn     | = FEND - Loopback occurs at Far end.<br>= NEND - Loopback occurs at Near end                                                                                                                                         |
| orgn     | = FEND - Far end office is originating the signal to be looped back.<br>= NEND - Near end office is originating the signal to be looped back.<br>= BOTH - Both offices are originating the signal to be looped back. |
| intext   | = EXT - Loopback is with external signal processing.<br>= INT - Loopback is with internal signal processing.                                                                                                         |
| lpbktype | = LINE - 51.84 Mbps loopback signal                                                                                                                                                                                  |

Command Example: RLS-LPBK-STS1:: iom-4-STS1-2;

101. Do you want to restore the port to service or release another loop?

If **restore the port to service**, then continue to the next step.

If **release another loop**, then go to [Step 100](#).

If **neither**, then go to [Step 61](#).

102. Configure the STS-1 facility line **in-service** using the ED-STS1 command. Refer to [Step 93](#) for command syntax.

Command Example: ED-STS1::IOM-1-STS1-1:::, , , LBO=100, :IS;

103. Verify the STS-1 line entry by using the RTRV-STS1 command. Refer to [Step 89](#) for command syntax.

Command Example: RTRV-T3::iom-4-T3-2::;

104. Is there another port to be tested?

If **YES**, then go to [Step 91](#).

If **NO**, then go to [Step 61](#).

105. Do you need to allow loopbacks? Loopbacks are allowed by default.

If **YES**, then continue to the next step.

If **NO**, then go to [Step 107](#).

106. Allow a port of the Plexus 9000 to respond to a remote OC-3 or OC-12 loopback request using the ALW-LPBK-OC3 or ALW-LPBK-OC12 command.

Command Syntax: ALW-LPBK-OC3:[TID]:<src>:[CTAG];

Command Syntax: ALW-LPBK-OC12:[TID]:<src>:[CTAG];

**parameters:**

lpbk\_id = IOM-{8|10}-OC3-{1 . . . 4} – OC-3 port of OC IOM

= IOM-{8|10}-OC12-{1 . . . 4} – OC-12 port of OC IOM

Command Example: ALW-LPBK-OC12::IOM-8-PORT-1;

107. Configure the OC facility line **out of service** using the ED-OC3 or ED-OC12 command.

Command Syntax: ED-OC<3|12>:[TID]:<oc\_id>:[CTAG]::  
[LINECDE=<linecde>]: [<pst>], [<sst>];

**parameters**

oc\_id = IOM-{8|10}-OC3-{1 . . . 4} – OC2 port of OC-3 IOM.

= IOM-{8|10}-OC12-{1 . . . 4} – OC12 port of OC-12 IOM.

Command Example: ED-OC12::iom-8-port-1::::oos;

108. Verify the OC line entry by using the RTRV-OC3 or RTRV-OC12 command.

Command Syntax: RTRV-OC<3|12>:[TID]:<oc\_id>:[CTAG];

**parameters:**

oc\_id = IOM-{8|10}-OC3-{1 . . . 4} – OC2 port of OC-3 IOM.  
= IOM-{8|10}-OC12-{1 . . . 4} – OC12 port of OC-12 IOM.

Command Example: RTRV-OC12::iom-8-port-1;

109. Put the port in loopback by issuing the OPR-LPBK-OC3 or OPR-LPBK-OC12 command with the parameters for your loopback.

Command Syntax: OPR-LPBK-OC<3|12>Facility:[TID]:  
<lpbk\_id>:[CTAG]:[<locn>],[<orgn>],  
[<intext>],[<lpbktype>;

**parameters:**

lpbk\_id = IOM-{8|10}-OC3-{1 . . . 4} – OC2 port of OC-3 IOM.  
= IOM-{8|10}-OC12-{1 . . . 4} – OC12 port of OC-12 IOM.  
locn = FEND - Loopback occurs at Far end.  
= NEND - Loopback occurs at Near end.  
orgn = FEND - Far end office is originating the signal to be looped  
back.  
= NEND - Near end office is originating the signal to be looped  
back.  
= BOTH - Both offices are originating the signal to be looped  
back.  
intext = EXT - Loopback is with external signal processing.  
= INT - Loopback is with internal signal processing.  
lpbktype = LINE – 155.52 Mbps loopback signal for OC3.  
= LINE – 622.08 Mbps loopback signal for OC3.

Comment: In the following example the far-end of IOM-4, port 1 goes into a line loopback with the signal being generated from the near-end.

Command Example: OPR-LPBK-OC12::iom-8-OC12-1;

110. Connect the fiber test patch cables at the test set and at the fiber entrance panel for the port to be tested.
111. Configure the test set transmission controls according to your company's policy for testing SONET OC ports. Reference the test set's manual.
112. Did the test set run error free for the time specified by your company policy for the OC-3 or OC-12 line?

IF **YES**, then continue to the next step.

If **NO**, verify port settings and cabling and go to [Step 109](#)

**113.** Do you want to release the loopback(s) or loop another port?

If **release loopback**, then continue to the next step.

If **loop another port**, then go to [Step 105](#).

If **neither**, then go to [Step 61](#).

**114.** Remove an OC loopback using the RLS-LPBK command.

Command Syntax: RLS-LPBK-OC<3|12>:[TID]:<lpbk\_id>:  
[CTAG]::[<locn>],[<orgn>],[<intext>],  
[<lpbktype>;

**Parameters:**

|          |                                                                       |
|----------|-----------------------------------------------------------------------|
| lpbk_id  | = IOM-{8 10}-OC3-{1 . . . 4} – OC2 port of OC-3 IOM.                  |
|          | = IOM-{8 10}-OC12-{1 . . . 4} – OC12 port of OC-12 IOM.               |
| locn     | = FEND - Far end is where the loopback occurs.                        |
|          | = NEND - Near end is where the loopback occurs.                       |
| orgn     | = FEND - Far end office is originating the signal to be looped back.  |
|          | = NEND - Near end office is originating the signal to be looped back. |
|          | = BOTH - Both offices are originating the signal to be looped back.   |
| intext   | = EXT - Loopback is with external signal processing.                  |
|          | = INT - Loopback is with internal signal processing.                  |
| lpbktype | = LINE – 622.08 Mbps loopback signal.                                 |

Command Example: RLS-LPBK-OC12::iom-8-OC12-1;

**115.** Do you want to restore the port to service or release another loop?

If **restore the port to service**, then continue to the next step.

If **release another loop**, then go to [Step 114](#).

If **neither**, then go to [Step 61](#).

**116.** Configure the OC port **in-service** using the ED-OC12 command.

Command Syntax: ED-OC<3|12>:[TID]:<oc\_id>:[CTAG]::  
[LINECDE=<linecde>]:[<pst>],[<sst>;

**parameters:**

|         |                                                         |
|---------|---------------------------------------------------------|
| oc_id   | = IOM-{8 10}-OC3-{1 . . . 4} – OC2 port of OC-3 IOM.    |
|         | = IOM-{8 10}-OC12-{1 . . . 4} – OC12 port of OC-12 IOM. |
| linecde | = <b>NRZ</b> - Non-Return to Zero code suppression      |
|         | = <b>RZ</b> - Return to Zero code suppression           |
| pst     | = <b>IS</b> - In-Service.                               |
|         | = <b>OOS</b> - Out-Of-Service.                          |

Command Example: ED-OC12::iom-8-port-1::is;

117. Verify the OC line entry by using the RTRV-OC3 or RTRV-OC12 command.

Command Syntax: RTRV-OC<3|12>:[TID]:<oc\_id>:[CTAG];

**parameters:**

oc\_id = IOM-{8|10}-OC3-{1 . . . 4} – OC2 port of OC-3 IOM.  
= IOM-{8|10}-OC12-{1 . . . 4} – OC12 port of OC-12 IOM.

Command Example: RTRV-OC12::iom-8-port-1;

118. Do you want to loop another OC port?

If **YES**, then go to [Step 105](#).

If **NO**, then go to [Step 61](#).

## DLP-534 - RETRIEVE STATS, PM DATA AND INITIALIZE REGISTERS FOR ISDN MESSAGES

**SUMMARY:** This procedure provides steps to retrieve statistics and performance monitored data as well as initialize the registers for ISDN messages.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - ISDN Interface Number
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISDN messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 12](#).

3. Select your task from the following and go to the indicated step.
  - Retrieve statistics for ISDN messages ..... [Step 5](#)
  - Retrieve PM data for ISDN messages..... [Step 8](#)
  - Clear the counters for ISDN message statistics ..... [Step 10](#)
  - Finished, no other task in the above list..... continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve statistics for the total number of the various ISDN messages transmitted and received, and the last transmitted and received cause and diagnostic codes. Double-click the switch to select it for the main panel and then right-click the switch name. Double-click *ISDN* and then *Interfaces*. Right-click an interface and select *View, Stats* and then click *Refresh* near the bottom of the panel for latest information. Refer to Figure 1.

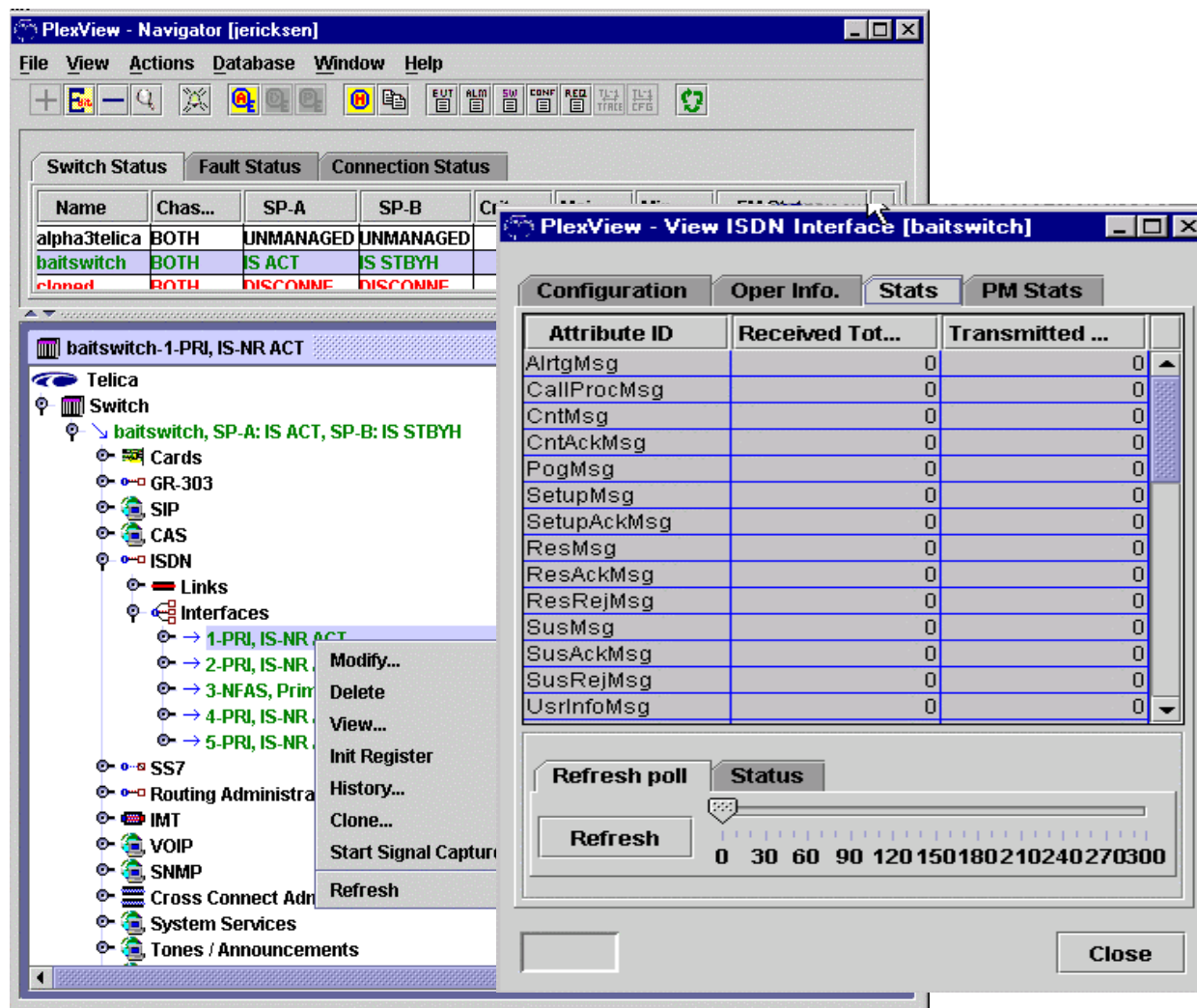


Figure 1. ISDN Interface

**Parameters and Descriptions:**

|                |                                          |
|----------------|------------------------------------------|
| AlrtgMsg       | = Total of alerting messages.            |
| AvgNumOpen Cls | = Average number of open calls.          |
| CallProcMsg    | = Total of call proceeding messages.     |
| CngstnCtrlMsg  | = Total of congestion control messages.  |
| CntAckMsg      | = Total of connect acknowledge messages. |
| CntMsg         | = Total of connect messages.             |
| Cnts           | = Total of connects.                     |
| DisCnts        | = Total of disconnects.                  |



|              |                                           |
|--------------|-------------------------------------------|
| DscntMsg     | = Total of disconnect messages.           |
| FacMsg       | = Total of facility messages.             |
| FacAckMsg    | = Total of facility acknowledge messages. |
| FacRejMsg    | = Total of facility reject messages.      |
| HldAckMsg    | = Total of hold acknowledge messages.     |
| HldMsg       | = Total of hold messages.                 |
| HldRejMsg    | = Total of hold reject messages.          |
| InfoMsg      | = Total of information messages.          |
| LstCauseCd   | = Last transmitted cause code.            |
| LstDiagCd    | = Last transmitted diagnostic code.       |
| NtfyMsg      | = Total of notify messages.               |
| PogMsgTx     | = Total of progress messages.             |
| RegMsg       | = Total of register messages.             |
| RelCmplMsg   | = Total of release complete messages.     |
| RelMsg       | = Total of release messages.              |
| ResRejMsg    | = Total of resume reject messages.        |
| RestrtAckMsg | = Total of restart acknowledge messages.  |
| RestrtMsg    | = Total of restart messages.              |
| RtrvAckMsg   | = Total of retrieve acknowledge messages. |
| RtrvMsg      | = Total of retrieve messages.             |
| RtrvRejMsg   | = Total of retrieve reject messages.      |
| SetupAckMsg  | = Total of setup acknowledge messages.    |
| SetupMsg     | = Total of setup messages.                |
| SgmtMsgTx    | = Total of segment messages.              |
| SrvAckMsg    | = Total of service acknowledge messages.  |
| SrvMsg       | = Total of service messages.              |
| StatusEnqMsg | = Total of status enquiry messages.       |
| StatusMsg    | = Total of status messages.               |
| SusAckMsg    | = Total of suspend acknowledge messages.  |
| SusMsg       | = Total of suspend messages.              |
| SusRejMsg    | = Total of suspend reject messages.       |
| UsrInfoMsg   | = Total of user information messages.     |

6. Do you want to check or retrieve ISDN message statistics for another interface?  
If **YES**, then go to [Step 5](#).  
If **NO**, then continue to the next step.
7. Do you want to retrieve PM data for ISDN messages?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 3](#).
8. Retrieve current and historical performance data for ISDN messages in the Plexus 9000. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *ISDN* and then *Interfaces*. Right-click an interface and select *View*, *PM Stats* and then click *Refresh* near the bottom of the panel for latest information. Refer to [Figure 2](#).

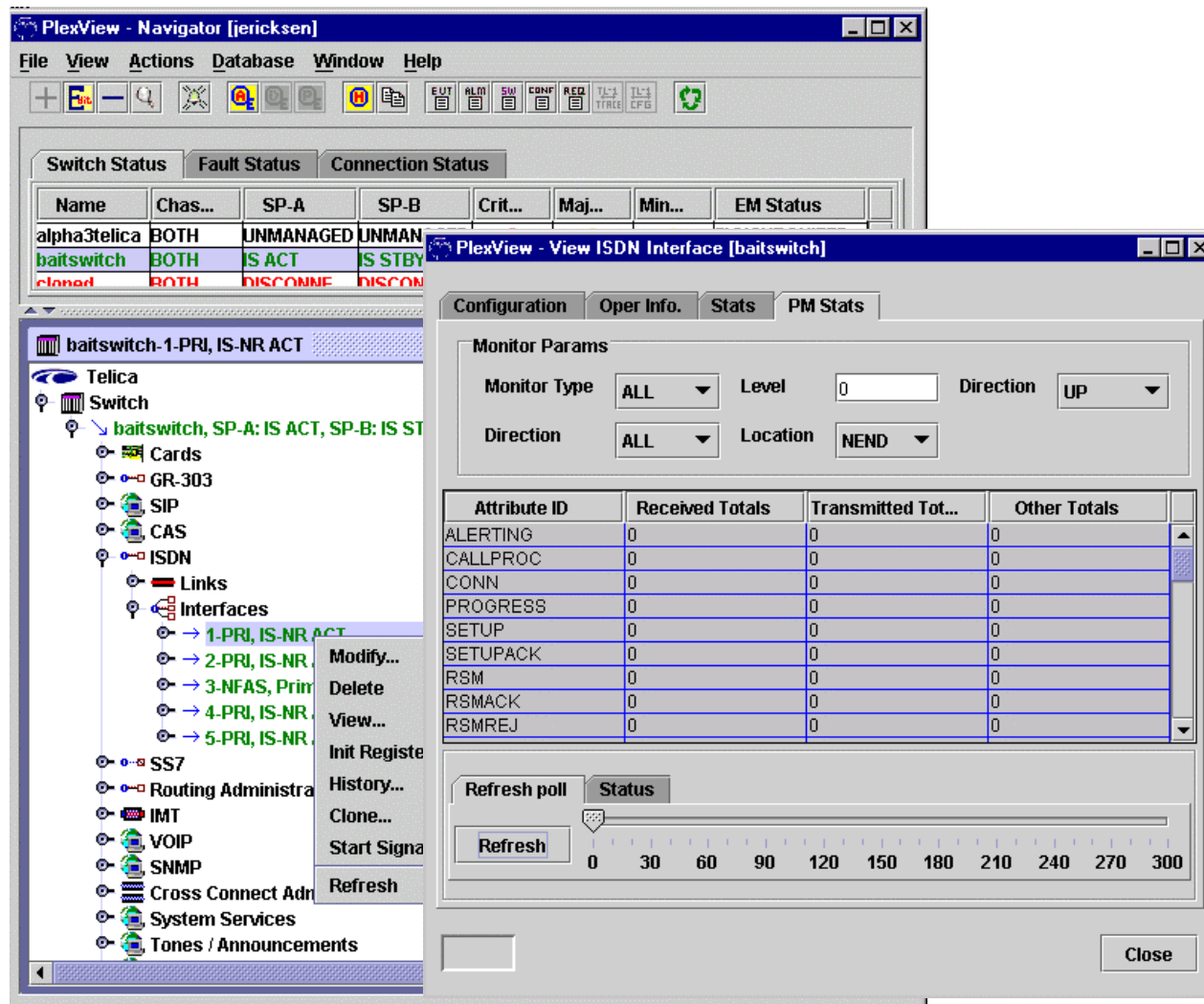


Figure 2. ISDN PM Stats

### Parameters and Descriptions

- ALERTING = Number of alerting messages received or transmitted.
- AVECALLS = Average number of open calls.
- CALLPROC- Number of call proceeding messages received or transmitted.
- CONGCNTRL = Number of congestion control messages received or transmitted.
- CONGL = Number of congestion control messages received or transmitted.
- CONN = Number of connect messages received or transmitted.
- CONNACK = Number of connect acknowledge messages received or transmitted.
- CONS = Total number of connect messages.
- DISC = Number of disconnect messages received or transmitted.

|            |                                                                                                                  |
|------------|------------------------------------------------------------------------------------------------------------------|
| DISCS      | = Total number of disconnect messages.                                                                           |
| FACIL      | = Number of facility messages received or transmitted.                                                           |
| FACILACK   | = Number of facility acknowledge messages received or transmitted.                                               |
| FACILREJ   | = Number of facility reject messages received or transmitted.                                                    |
| HOLD       | = Number of hold messages received or transmitted.                                                               |
| HOLDACK    | = Number of hold acknowledge messages received or transmitted.                                                   |
| HOLDREJ    | = Number of hold reject messages received or transmitted.                                                        |
| INFO       | = Number of information messages received or transmitted.                                                        |
| LASTINIT   | = Number of minutes since initialization of all receive or transmit counters.                                    |
| LASTINITNA | = Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT). |
| NOTIFY     | = Number of notify messages received or transmitted.                                                             |
| PROGRESS   | = Number of progress messages received or transmitted.                                                           |
| REG        | = Number of register messages received or transmitted.                                                           |
| REL        | = Number of release messages received or transmitted.                                                            |
| RELCMPLT   | = Number of release complete messages received or transmitted.                                                   |
| RET        | = Number of retrieve messages received or transmitted.                                                           |
| RETACK     | = Number of retrieve acknowledge messages received or transmitted.                                               |
| RETREJTX   | = Number of retrieve reject messages received or transmitted.                                                    |
| RSM        | = Number of resume messages received or transmitted.                                                             |
| RSMACK     | = Number of resume acknowledge messages received or transmitted.                                                 |
| RSMREJ     | = Number of resume reject messages received or transmitted.                                                      |
| RST        | = Number of restart messages received or transmitted.                                                            |
| RSTACK     | = Number of restart acknowledge messages received or transmitted.                                                |
| SEGMENT    | = Number of segment messages received or transmitted.                                                            |
| SEGMENT    | = Number of segment messages transmitted.                                                                        |
| SERV       | = Number of service messages received or transmitted.                                                            |
| SERVACK    | = Number of service acknowledge messages received or transmitted.                                                |
| SETUP      | = Number of setup messages received or transmitted.                                                              |
| SETUPACK   | = Number of setup acknowledge messages received or transmitted.                                                  |
| STAT       | = Number of status messages received or transmitted.                                                             |
| STATENQ    | = Number of status enquiry messages received or transmitted.                                                     |
| SUSP       | = Number of suspend messages received or transmitted.                                                            |
| SUSPACK    | = Number of suspend acknowledge messages received or transmitted.                                                |
| SUSPREJRX  | = Number of suspend reject messages received or transmitted.                                                     |
| USRINFO    | = Number of user information messages received or transmitted.                                                   |

9. Do you want to initialize registers for ISDN message statistics?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).



**Note:** The following is not applicable to some versions of system software (e.g., 3.8).

10. Clear the counters for ISDN message statistics. Double-click the switch name in the switch status panel to select it for the main panel Double-click *ISDN* and then *Interfaces*. Right-click an interface and select *Init Register*. Make change and then click *Apply*. Refer to [Figure 3](#).

**Figure 3. Initialize ISDN Message Registers**

**Input Parameters:**

Id = {1 . . . 32767} - ISDN interface number.

Monitor Type = ALL - All statistics counters of the group determined by the *dirn* parameter.

= UPDSTSTHRSHLD - Threshold value for updating the standby processor's statistics.

Monitor Value = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".

Location = **NEND** - Near end counters to be initialized.

Direction = **ALL** - All directions of the data stored in statistics counters.  
= **NA** - Direction not applicable. Currently not used.  
= **RCV** - Receive direction only of the data stored in statistics counters. Currently not used.  
= **TRMT** - Transmit direction only of the data stored in statistics counters. Currently not used.  
Time Period = Currently not used.  
Date of Monitor = Currently not used.  
Time of Monitor = Currently not used.

11. Do you want to initialize registers for ISDN message statistics for another interface?

If **YES**, then go to [Step 10](#)

If **NO**, then go to [Step 3](#).

12. Select your task from the following and go to the indicated step.

- Retrieve statistics for ISDN messages ..... [Step 14](#)
- Retrieve PM data for ISDN messages..... [Step 17](#)
- Clear the counters for ISDN message statistics ..... [Step 19](#)
- Finished, no other task in the above list..... continue to the next step.

13.  **YOU HAVE COMPLETED THIS PROCEDURE.**

14. Retrieve statistics for the total number of the various ISDN messages transmitted and received, and the last transmitted and received cause and diagnostic codes, using the RTRV-STATS-ISDNMSG command.

Command Syntax: RTRV-STATS-ISDNMSG:[TID]:<isdnIfNum>:  
[CTAG];

**Input Parameters:**

IsdnIfNum = {1 . . . 32767} - ISDN interface number.

Command Example: RTRV-STATS-ISDNMSG::14::;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<isdnIfNum>:ALRTGMSGTX=<alrtgMsgTx>,
CALLPROCMSGTX=<callProcMsgTx>,CNTMSGTX=<cntMsgTx>,
CNTACKMSGTTX=<cntAckMsgTx>,PROGMSGTTX=<progMsgTx>,
SETUPMSGTTX=<setupMsgTx>,SETUPACKMSGTX=<setupAckMsgTx>,
RESMSGTTX=<resmMsgTx>,RESACKMSGTTX=<resmAckMsgTx>,"
```

```

RESREJMSGTTX=<resmRejMsgTx>, SUSMSGTX=<susMsgTx>,
SUSPACKMSGTX=<susAckMsgTx>, SUSPREJMSGTX=<susRejMsgTx>,
USRINFOMSGTX=<usrInfoMsgTx>, HLDMSGTX=<hldMsgTx>,
HLDACKMSGTX=<hldAckMsgTx>, HLDREJMSGTX=<hldRejMsgTx>,
RTRVMSGTX=<rtrvMsgTx>, RTRVACKMSGTX=<rtrvAckMsgTx>,
RTRVREJMSGTX=<rtrvRejMsgTx>, DSCNTMSGTX=<dscntMsgTx>,
RELMSGTX=<relMsgTx>, RELCMPLMSGTX=<relCmplMsgTx>,
RESTRMSGTX=<restrtMsgTx>, RESTRACKMSGTX=<restrtAckMsgTx>,
SGMTMSGTX=<sgmtMsgTx>, CNGSTNCTRLMSGTX=<cngstnCtrlMsgTx>,
INFOMSGTX=<infoMsgTx>, NTFYMSGTX=<ntfyMsgTx>,
STATUSMSGTX=<statusMsgTx>, STATUSENQMSGTX=<statusEnqMsgTx>,
SRVMSGTX=<srvMsgTx>, SRVACKMSGTX=<srvAckMsgTx>,
FACMSGTX=<facMsgTx>, FACACKMSGTX=<facAckMsgTx>,
FACREJMSGTX=<facRejMsgTx>, REGMSGTX=<regMsgTx>,
ALRTGMSGRX=<alrtgMsgRx>, CALLPROCMSGRX=<callProcMsgRx>,
CNTMSGRX=<cntMsgRx>, CNTACKMSGRX=<cntAckMsgRx>,
PROGMSGRX=<progMsgRx>, SETUPMSGRX=<setupMsgRx>,
SETUPACKMSGRX=<setupAckMsgRx>, RESMSGRX=<resMsgRx>,
RESACKMSGRX=<resAckMsgRx>, RESREJMSGRX=<resRejMsgRx>,
SUSMSGRX=<susMsgRx>, SUSPACKMSGRX=<susAckMsgRx>,
SUSPREJMSGRX=<susRejMsgRx>, USRINFOMSGRX=<usrInfoMsgRx>,
HLDMSGRX=<hldMsgRx>, HLDACKMSGRX=<hldAckMsgRx>,
HLDREJMSGRX=<hldRejMsgRx>, RTRVMSGRX=<rtrvMsgRx>,
RTRVACKMSGRX=<rtrvAckMsgRx>, RTRVREJMSGRX=<rtrvRejMsgRx>,
DSCNTMSGRX=<dscntMsgRx>, RELMSGRX=<relMsgRx>,
RELCMPLMSGRX=<relCmplMsgRx>, RESTRMSGRX=<restrtMsgRx>,
RESTRACKMSGRX=<restrtAckMsgRx>, SGMTMSGRX=<sgmtMsgRx>,
CNGSTNCTRLMSGRX=<cngstnCtrlMsgRx>, INFOMSGRX=<infoMsgRx>,
NTFYMSGRX=<ntfyMsgRx>, STATUSMSGRX=<statusMsgRx>,
STATUSENQMSGRX=<statusEnqMsgRx>, SRVMSGRX=<srvMsgRx>,
SRVACKMSGRX=<srvAckMsgRx>, FACMSGRX=<facMsgRx>,
FACACKMSGRX=<facAckMsgRx>, FACREJMSGRX=<facRejMsgRx>,
REGMSGRX=<regMsgRx>, CNTS=<cnts>, DISCNTS=<discnts>,
AVGNUMOPENCLS=<avgNumOpenCls>, LSTTXCAUSECDE=<lstTxCauseCd>,
LSTTSDIAGCDE=<lstTxDiagCd>, LSTRXCAUSECDE=<lstRxCauseCd>,
LSTRXDIAGCDE=<lstRxDiagCd>"
;

```

### Output Parameters:

Parameters ending with "Rx" are messages received and those ending with "Tx" are messages transmitted.

|               |                     |                                          |
|---------------|---------------------|------------------------------------------|
| IsdnIfNum     | = {1 . . . 1344}    | Identifies the AID as an ISDN interface. |
| alrtgMsgTx    | = {0-4,294,967,295} | - Total of alerting messages.            |
| callProcMsgTx | = {0-4,294,967,295} | - Total of call proceeding messages.     |
| cntMsgTx      | = {0-4,294,967,295} | - Total of connect messages.             |
| cntAckMsgTx   | = {0-4,294,967,295} | - Total of connect acknowledge messages. |
| progMsgTx     | = {0-4,294,967,295} | - Total of progress messages.            |
| setupMsgTx    | = {0-4,294,967,295} | - Total of setup messages.               |
| setupAckMsgTx | = {0-4,294,967,295} | - Total of setup acknowledge messages.   |

|                 |                                                               |
|-----------------|---------------------------------------------------------------|
| resMsgTx        | = {0-4,294,967,295} - Total of resume messages.               |
| resAckMsgTx     | = {0-4,294,967,295} - Total of resume acknowledge messages.   |
| resRejMsgTx     | = {0-4,294,967,295} - Total of resume reject messages.        |
| suspMsgTx       | = {0-4,294,967,295} - Total of suspend messages.              |
| suspAckMsgTx    | = {0-4,294,967,295} - Total of suspend acknowledge messages.  |
| suspRejMsgTx    | = {0-4,294,967,295} - Total of suspend reject messages.       |
| usrInfoMsgTx    | = {0-4,294,967,295} - Total of user information messages.     |
| hldMsgTx        | = {0-4,294,967,295} - Total of hold messages.                 |
| hldAckMsgTx     | = {0-4,294,967,295} - Total of hold acknowledge messages.     |
| hldRejMsgTx     | = {0-4,294,967,295} - Total of hold reject messages.          |
| rtrvMsgTx       | = {0-4,294,967,295} - Total of retrieve messages.             |
| rtrvAckMsgTx    | = {0-4,294,967,295} - Total of retrieve acknowledge messages. |
| rtrvRejMsgTx    | = {0-4,294,967,295} - Total of retrieve reject messages.      |
| dscntMsgTx      | = {0-4,294,967,295} - Total of disconnect messages.           |
| relMsgTx        | = {0-4,294,967,295} - Total of release messages.              |
| relCmplMsgTx    | = {0-4,294,967,295} - Total of release complete messages.     |
| restrtMsgTx     | = {0-4,294,967,295} - Total of restart messages.              |
| restrtAckMsgTx  | = {0-4,294,967,295} - Total of restart acknowledge messages.  |
| sgmtMsgTx       | = {0-4,294,967,295} - Total of segment messages.              |
| cngstnCtrlMsgTx | = {0-4,294,967,295} - Total of congestion control messages.   |
| infoMsgTx       | = {0-4,294,967,295} - Total of information messages.          |
| ntfyMsgTx       | = {0-4,294,967,295} - Total of notify messages.               |
| statusMsgTx     | = {0-4,294,967,295} - Total of status messages.               |
| statusEnqMsgTx  | = {0-4,294,967,295} - Total of status enquiry messages.       |
| srvMsgTx        | = {0-4,294,967,295} - Total of service messages.              |
| srvAckMsgTx     | = {0-4,294,967,295} - Total of service acknowledge messages.  |
| facMsgTx        | = {0-4,294,967,295} - Total of facility messages.             |
| facAckMsgTx     | = {0-4,294,967,295} - Total of facility acknowledge messages. |
| facRejMsgTx     | = {0-4,294,967,295} - Total of facility reject messages.      |
| regMsgTx        | = {0-4,294,967,295} - Total of register messages.             |
| alrtgMsgRx      | = {0-4,294,967,295} - Total of alerting messages.             |
| callProcMsgRx   | = {0-4,294,967,295} - Total of call proceeding messages.      |
| cntMsgRx        | = {0-4,294,967,295} - Total of connect messages.              |
| cntAckMsgRx     | = {0-4,294,967,295} - Total of connect acknowledge messages.  |
| progMsgRx       | = {0-4,294,967,295} - Total of progress messages.             |
| setupMsgRx      | = {0-4,294,967,295} - Total of setup messages.                |
| setupAckMsgRx   | = {0-4,294,967,295} - Total of setup acknowledge messages.    |
| resMsgRx        | = {0-4,294,967,295} - Total of resume messages.               |
| resAckMsgRx     | = {0-4,294,967,295} - Total of resume acknowledge messages.   |
| resRejMsgRx     | = {0-4,294,967,295} - Total of resume reject messages.        |

|                 |                                                               |
|-----------------|---------------------------------------------------------------|
| suspMsgRx       | = {0-4,294,967,295} - Total of suspend messages.              |
| suspAckMsgRx    | = {0-4,294,967,295} - Total of suspend acknowledge messages.  |
| suspRejMsgRx    | = {0-4,294,967,295} - Total of suspend reject messages.       |
| usrInfoMsgRx    | = {0-4,294,967,295} - Total of user information messages.     |
| hldMsgRx        | = {0-4,294,967,295} - Total of hold messages.                 |
| hldAckMsgRx     | = {0-4,294,967,295} - Total of hold acknowledge messages.     |
| hldRejMsgRx     | = {0-4,294,967,295} - Total of hold reject messages.          |
| rtrvMsgRx       | = {0-4,294,967,295} - Total of retrieve messages.             |
| rtrvAckMsgRx    | = {0-4,294,967,295} - Total of retrieve acknowledge messages. |
| rtrvRejMsgRx    | = {0-4,294,967,295} - Total of retrieve reject messages.      |
| dscntMsgRx      | = {0-4,294,967,295} - Total of disconnect messages.           |
| relMsgRx        | = {0-4,294,967,295} - Total of release messages.              |
| relCmplMsgRx    | = {0-4,294,967,295} - Total of release complete messages.     |
| restrtMsgRx     | = {0-4,294,967,295} - Total of restart messages.              |
| restrtAckMsgRx  | = {0-4,294,967,295} - Total of restart acknowledge messages.  |
| sgmtMsgRx       | = {0-4,294,967,295} - Total of segment messages.              |
| cngstnCtrlMsgRx | = {0-4,294,967,295} - Total of congestion control messages.   |
| infoMsgRx       | = {0-4,294,967,295} - Total of information messages.          |
| ntfyMsgRx       | = {0-4,294,967,295} - Total of notify messages.               |
| statusMsgRx     | = {0-4,294,967,295} - Total of status messages.               |
| statusEnqMsgRx  | = {0-4,294,967,295} - Total of status enquiry messages.       |
| srvMsgRx        | = {0-4,294,967,295} - Total of service messages.              |
| srvAckMsgRx     | = {0-4,294,967,295} - Total of service acknowledge messages.  |
| facMsgRx        | = {0-4,294,967,295} - Total of facility messages.             |
| facAckMsgRx     | = {0-4,294,967,295} - Total of facility acknowledge messages. |
| facRejMsgRx     | = {0-4,294,967,295} - Total of facility reject messages.      |
| regMsgRx        | = {0-4,294,967,295} - Total of register messages.             |
| cnts            | = {0-4,294,967,295} - Total of connects.                      |
| discnts         | = {0-4,294,967,295} - Total of disconnects.                   |
| avgNumOpenCalls | = {0-4,294,967,295} - Average number of open calls.           |
| lstTxCauseCde   | = {1-127} - Last transmitted cause code.                      |
| lstTxDiagCde    | = {1-127} - Last transmitted diagnostic code.                 |
| lstRxCauseCde   | = {1-127} - Last received cause code.                         |
| LstRxDiagCde    | = {1-127} - Last received diagnostic code.                    |

**Output Example:**

```
telica 2000-09-29 14:37:49
M 0 COMPLD
"16001:ALRTGMSGTX=11,CALLPROCMSGTX=20,CNTMSGTX=0,
CNTACKMSGTXX=0,PROGMSGTXX=11,SETUPMSGTXX=0,
SETUPACKMSGTX=0,RESMSGTXX=0,RESACKMSGTXX=0,RESREJMSGTXX=0,
SUSMSGTX=0,SUSPACKMSGTX=0,SUSPREJMSGTX=0,USRINFOMSGTX=0,
HLDMSGTX=0,HLDACKMSGTX=0,HLDREJMSGTX=0,RTRVMSGTX=0,
RTRVACKMSGTX=0,RTRVREJMSGTX=0,DSCNTMSGTX=8,RELMSGTX=12,
```



```
RELCMPLMSGTX=10, RESTRMSGTX=0, RESTRACKMSGTX=0, SGMTMSGTX=0,
CNGSTNCTRLMSGTX=0, INFOMSGTX=0, NTFYMSGTX=0, STATUSMSGTX=0,
STATUSENQMSGTX=0, SRVMSGTX=0, SRVACKMSGTX=0, FACMSGTX=0,
FACACKMSGTX=0, FACREJMSGTX=0, REGMSGTX=0, ALRTGMSGRX=0,
CALLPROCMSGRX=0, CNTMSGRX=0, CNTACKMSGRX=0, PROGMSGRX=0,
SETUPMSGRX=22, SETUPACKMSGRX=0, RESMSGRX=0, RESACKMSGRX=0,
RESREJMSGRX=0, SUSMSGRX=0, SUSPACKMSGRX=0, SUSPREJMSGRX=0,
USRINFOMSGRX=0, HLDMSGRX=0, HLDACKMSGRX=0, HLDREJMSGRX=0,
RTRVMSGRX=0, RTRVACKMSGRX=0, RTRVREJMSGRX=0, DSCNTMSGRX=12,
RELMSGRX=8, RELCMPLMSGRX=12, RESTRMSGRX=0, RESTRACKMSGRX=0,
SGMTMSGRX=0, CNGSTNCTRLMSGRX=0, INFOMSGRX=0, NTFYMSGRX=0,
STATUSMSGRX=0, STATUSENQMSGRX=0, SRVMSGRX=0, SRVACKMSGRX=0,
FACMSGRX=0, FACACKMSGRX=0, FACREJMSGRX=0, REGMSGRX=0, CNTS=0,
DISCNTS=20, AVGNUMOPENCLS=0, LSTTXCAUSECDE=0, LSTTSDIAGCDE=0,
LSTRXCAUSECDE=16, LSTRXDIAGCDE=0"
/* RTRV-STATS-ISDNMSG */
```

15. Do you want to check or retrieve ISDN message statistics for another interface?  
If **YES**, then go to [Step 14](#).  
If **NO**, then continue to the next step.
16. Do you want to retrieve PM data for ISDN messages?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 12](#).
17. Retrieve current and historical performance data for ISDN messages in the Plexus 9000 using the RTRV-PM-ISDNMSG command.

Command Syntax: RTRV-PM-ISDNMSG:[TID]:<isdnIfNum>:  
[CTAG]:[:<montype>], [<monlev>],  
[<locn>], [<dirn>];

**Input Parameters:**

|           |                                                                                                                                                                                                                                                                          |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| isdnIfNum | = {1 . . . 32767} - ISDN interface number.                                                                                                                                                                                                                               |
| montype   | = ALL - All statistics counters of the group determined by the <i>dirn</i> parameter.                                                                                                                                                                                    |
| monlev    | = {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                                                                                                                                                  |
| locn      | = <b>NEND</b> - Near end counters to be initialized.                                                                                                                                                                                                                     |
| dirn      | = <b>ALL</b> - All directions of the data stored in statistics counters.<br>= NA - Direction not applicable.<br>= RCV - Receive direction only of the data stored in statistics counters.<br>= TRMT - Transmit direction only of the data stored in statistics counters. |

Command Example: RTRV-PM-ISDNMSG::3029;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7Pc>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

isdnIfNum = {1 . . . 32767} - ISDN interface number.

montype = ALERTINGRX - Number of alerting messages received.  
= ALERTINGTX - Number of alerting messages transmitted.  
= ALL - All types.  
= AVECALLS - Average number of open calls.  
= CALLPROC RX - Number of call proceeding messages received.  
= CALLPROCTX - Number of call proceeding messages transmitted.  
= CONGCNTRLRX - Number of congestion control messages received.  
= CONGLTX - Number of congestion control messages transmitted.  
= CONNACKRX - Number of connect acknowledge messages received.  
= CONNACKTX - Number of connect acknowledge messages transmitted.  
= CONNRX - Number of connect messages received.  
= CONNTX - Number of connect messages transmitted.  
= CONS - Total number of connect messages.  
= DISCRX - Number of disconnect messages received.  
= DISCS - Total number of disconnect messages.  
= DISCTX - Number of disconnect messages transmitted.  
= FACILACKRX - Number of facility acknowledge messages received.  
= FACILACKTX - Number of facility acknowledge messages transmitted.  
= FACILREJRX - Number of facility reject messages received.  
= FACILREJTX - Number of facility reject messages transmitted.  
= FACILRX - Number of facility messages received.  
= FACILTX - Number of facility messages transmitted.  
= HOLDACKRX - Number of hold acknowledge messages received.  
= HOLDACKTX - Number of hold acknowledge messages transmitted.  
= HOLDREJRX - Number of hold reject messages received.  
= HOLDREJTX - Number of hold reject messages transmitted.  
= HOLDRX - Number of hold messages received.  
= HOLDTX - Number of hold messages transmitted.  
= INFORX - Number of information messages received.

- = INFOTX - Number of information messages transmitted.
- = LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT).
- = LASTINITRCV - Number of minutes since initialization of all RCV (receive) counters.
- = LASTINITTRMT - Number of minutes since initialization of all TRMT (transmit) counters.
- = LSTRXCAUSE - Last received cause code.
- = LSTRXDGN - Last received diagnostic code.
- = LSTTXCAUSE - Last transmitted cause code.
- = LSTTXDGN - Last transmitted diagnostic code.
- = NOTIFYRX - Number of notify messages received.
- = NOTIFYTX - Number of notify messages transmitted.
- = PROGRESSRX - Number of progress messages received.
- = PROGRESSTX - Number of progress messages transmitted.
- = REGRX - Number of register messages received.
- = REGTX - Number of register messages transmitted.
- = RELCMPLTRX - Number of release complete messages received.
- = RELCMPLTTX - Number of release complete messages transmitted.
- = RELRX - Number of release messages received.
- = RELTX - Number of release messages transmitted.
- = RETACKRX - Number of retrieve acknowledge messages received.
- = RETACKTX - Number of retrieve acknowledge messages transmitted.
- = RETREJRX - Number of retrieve reject messages received.
- = RETREJTX - Number of retrieve reject messages transmitted.
- = RETRX - Number of retrieve messages received.
- = RETTX - Number of retrieve messages transmitted.
- = RSMACKRX - Number of resume acknowledge messages received.
- = RSMACKTX - Number of resume acknowledge messages transmitted.
- = RSMREJRX - Number of resume reject messages received.
- = RSMREJTX - Number of resume reject messages transmitted.
- = RSMRX - Number of resume messages received.
- = RSMTX - Number of resume messages transmitted.
- = RSTACKRX - Number of restart acknowledge messages received.
- = RSTACKTX - Number of restart acknowledge messages transmitted.
- = RSTRX - Number of restart messages received.
- = RSTTX - Number of restart messages transmitted.
- = SEGMENTRX - Number of segment messages received.

|        |                                                                                                                                                           |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | = SEGMENTX - Number of segment messages transmitted.                                                                                                      |
|        | = SERVACKRX - Number of service acknowledge messages received.                                                                                            |
|        | = SERVACKTX - Number of service acknowledge messages transmitted.                                                                                         |
|        | = SERVRX - Number of service messages received.                                                                                                           |
|        | = SERVTX - Number of service messages transmitted.                                                                                                        |
|        | = SETUPACKRX - Number of setup acknowledge messages received.                                                                                             |
|        | = SETUPACKTX - Number of setup acknowledge messages transmitted.                                                                                          |
|        | = SETUPRX - Number of setup messages received.                                                                                                            |
|        | = SETUPTX - Number of setup messages transmitted.                                                                                                         |
|        | = STATENQRX - Number of status enquiry messages received.                                                                                                 |
|        | = STATENQTX - Number of status enquiry messages transmitted.                                                                                              |
|        | = STATRX - Number of status messages received.                                                                                                            |
|        | = STATTX - Number of status messages transmitted.                                                                                                         |
|        | = SUSPACKRX - Number of suspend acknowledge messages received.                                                                                            |
|        | = SUSPACKTX - Number of suspend acknowledge messages transmitted.                                                                                         |
|        | = SUSPREJRX - Number of suspend reject messages received.                                                                                                 |
|        | = SUSPREJTX - Number of suspend messages reject transmitted.                                                                                              |
|        | = SUSPRX - Number of suspend messages received.                                                                                                           |
|        | = SUSPTX - Number of suspend messages transmitted.                                                                                                        |
|        | = UPDSTSTHRSHLD - Threshold value for the increase in the number of established calls that triggers an update to the statistics on the standby processor. |
|        | = USRINFORX - Number of user information messages received.                                                                                               |
|        | = USRINFOTX - Number of user information messages transmitted.                                                                                            |
| monval | = {0 – 4,294,967,295} - Monitored value.                                                                                                                  |
| monlev | - {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                                   |
| locn   | = NEND - Near end counters to be initialized.                                                                                                             |
| dirn   | = ALL - All directions of the data stored in statistics counters.                                                                                         |
|        | = NA - Direction not applicable.                                                                                                                          |
|        | = RCV - Receive direction only of the data stored in statistics counters.                                                                                 |
|        | = TRMT - Transmit direction only of the data stored in statistics counters.                                                                               |

**Output Example:**

```
telica 2002-11-06 15:16:35
M 0 COMPLD
"3029:ALERTINGTX,0,0-UP,NEND,ALL"
":CALLPROCTX,0,0-UP,NEND,ALL"
":CONNTX,0,0-UP,NEND,ALL"
":CONNTX,0,0-UP,NEND,ALL"
":PROGRESSTX,0,0-UP,NEND,ALL"
":SETUPTX,0,0-UP,NEND,ALL"
":SETUPACKTX,0,0-UP,NEND,ALL"
":RSMTX,0,0-UP,NEND,ALL"
":RSMACKTX,0,0-UP,NEND,ALL"
":RSMREJTX,0,0-UP,NEND,ALL"
":SUSPTX,0,0-UP,NEND,ALL"
":SUSPACKTX,0,0-UP,NEND,ALL"
":SUSPREJTX,0,0-UP,NEND,ALL"
":USRINFOTX,0,0-UP,NEND,ALL"
":HOLDTX,0,0-UP,NEND,ALL"
":HOLDACKTX,0,0-UP,NEND,ALL"
":HOLDREJTX,0,0-UP,NEND,ALL"
":RETTX,0,0-UP,NEND,ALL"
":RETACKTX,0,0-UP,NEND,ALL"
":RETREJTX,0,0-UP,NEND,ALL"
":DISCTX,0,0-UP,NEND,ALL"
":RELTx,0,0-UP,NEND,ALL"
":RELCMPLTTX,0,0-UP,NEND,ALL"
":RSTTX,0,0-UP,NEND,ALL"
":RSTACKTX,0,0-UP,NEND,ALL"
":SEGMENTX,0,0-UP,NEND,ALL"
":CONGLTX,0,0-UP,NEND,ALL"
":INFOTX,0,0-UP,NEND,ALL"
":NOTIFYTX,0,0-UP,NEND,ALL"
":STATTX,0,0-UP,NEND,ALL"
":STATENQTX,0,0-UP,NEND,ALL"
":SERVTX,0,0-UP,NEND,ALL"
":SERVACKTX,0,0-UP,NEND,ALL"
":FACILTX,0,0-UP,NEND,ALL"
":FACILACKTX,0,0-UP,NEND,ALL"
":FACILREJTX,0,0-UP,NEND,ALL"
":REGTX,0,0-UP,NEND,ALL"
":LASTINITTRMT,2452,0-UP,NEND,ALL"
":ALERTINGRX,0,0-UP,NEND,ALL"
":CALLPROCX,0,0-UP,NEND,ALL"
":CONNRX,0,0-UP,NEND,ALL"
":CONNACKRX,0,0-UP,NEND,ALL"
":PROGRESSRX,0,0-UP,NEND,ALL"
":SETUPRX,0,0-UP,NEND,ALL"
```

```
" : SETUPACKRX, 0, 0-UP, NEND, ALL "
" : RSMRX, 0, 0-UP, NEND, ALL "
" : RSMACKRX, 0, 0-UP, NEND, ALL "
" : RSMREJRX, 0, 0-UP, NEND, ALL "
" : SUSPRX, 0, 0-UP, NEND, ALL "
" : SUSPACKRX, 0, 0-UP, NEND, ALL "
" : SUSPREJRX, 0, 0-UP, NEND, ALL "
" : USRINFORX, 0, 0-UP, NEND, ALL "
" : HOLDRX, 0, 0-UP, NEND, ALL "
" : HOLDACKRX, 0, 0-UP, NEND, ALL "
" : HOLDREJRX, 0, 0-UP, NEND, ALL "
" : RETRX, 0, 0-UP, NEND, ALL "
" : RETACKRX, 0, 0-UP, NEND, ALL "
" : RETREJRX, 0, 0-UP, NEND, ALL "
" : DISCRX, 0, 0-UP, NEND, ALL "
" : RELRX, 0, 0-UP, NEND, ALL "
" : CONNRX, 0, 0-UP, NEND, ALL "
" : CONNACKRX, 0, 0-UP, NEND, ALL "
" : PROGRESSRX, 0, 0-UP, NEND, ALL "
" : SETUPRX, 0, 0-UP, NEND, ALL "
" : SETUPACKRX, 0, 0-UP, NEND, ALL "
" : RSMRX, 0, 0-UP, NEND, ALL "
" : RSMACKRX, 0, 0-UP, NEND, ALL "
" : RSMREJRX, 0, 0-UP, NEND, ALL "
" : SUSPRX, 0, 0-UP, NEND, ALL "
" : SUSPACKRX, 0, 0-UP, NEND, ALL "
" : SUSPREJRX, 0, 0-UP, NEND, ALL "
" : USRINFORX, 0, 0-UP, NEND, ALL "
" : HOLDRX, 0, 0-UP, NEND, ALL "
" : HOLDACKRX, 0, 0-UP, NEND, ALL "
" : HOLDREJRX, 0, 0-UP, NEND, ALL "
" : RETRX, 0, 0-UP, NEND, ALL "
" : RETACKRX, 0, 0-UP, NEND, ALL "
" : RETREJRX, 0, 0-UP, NEND, ALL "
" : DISCRX, 0, 0-UP, NEND, ALL "
" : RELRX, 0, 0-UP, NEND, ALL "
/* RTRV-PM-ISDNMSG */
```

;

18. Do you want to initialize registers for ISDN message statistics?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 12](#).

19. Clear the counters for ISDN message statistics using the INIT-REG-ISDNMSG command.

Command Syntax:   INIT-REG-ISDNMSG:[TID]:<isdnIfNum>:  
                                          [CTAG]:<montype>,[<monval>],[<locn>],  
                                          [<dirn>];

**Input Parameters:**

isdnIfNum   = {1 . . . 32767} - ISDN interface number.  
montype     = ALL - All statistics counters of the group determined by the *dirn* parameter.  
              = UPDSTSTHRSHLD - Threshold value for updating the standby processor's statistics.  
  
monnval     = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".  
locn        = **NEND** - Near end counters to be initialized.  
dirn        = **ALL** - All directions of the data stored in statistics counters.  
              = NA - Direction not applicable.  
              = RCV - Receive direction only of the data stored in statistics counters.  
              = TRMT - Transmit direction only of the data stored in statistics counters.

Command Example:   INIT-REG-ISDNMSG::3029;

20. Do you want to initialize registers for ISDN message statistics for another interface?

If **YES**, then go to [Step 19](#).

If **NO**, then go to [Step 12](#).

**NOTES:**



## DLP-535 - REPLACE A MODULE, FAN OR FAN FILTER

**SUMMARY:** This procedure provides the steps to replace a System Processor/Timing, Switch Fabric or I/O module as well as the Fan shelf or Fan Filter.



**DANGER:** *Technicians will be in proximity with –48 Vdc office battery power. Verify that the power to the unit has been turned off at the source before performing this procedure.*



**Caution:** *This unit employs electrical voltage and amperage levels that, per GR-1089, may be considered an electrical hazard. Care should be exercised to assure that only qualified personnel are allowed to install, operate, maintain or otherwise come in contact with this equipment when the panel is energized. Only insulated tools should be used on energized elements of the panel.*



**Warning:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards*

1. What module, fan shelf or fan filter needs to be replaced or hardware upgraded?

If **System Processor Timing Module**, then replace System Processor Timing Module.

Reference: **DLP-512**

If **Switch Fabric Module**, then replace Switch Fabric Module.

Reference: **DLP-513**

If **replacing a DS1 or DS3 IOM**, then replace a DS1 or DS3 Module.

Reference: **DLP-515**

If **replacing ANA, PNA, ENA or VS IOM**, then replace a Network Access or Voice Server I/O Module.

Reference: **DLP-667**

If **upgrading an I/O Module**, then upgrade I/O Module.

Reference: **DLP-511**

If **Fan Shelf**, then replace the Fan Shelf.

Reference: **DLP-507**

If **Fan Filter**, then replace the Fan Filter.

Reference: **DLP-508**

2.  **YOU HAVE COMPLETED THIS PROCEDURE.**

## DLP-536 - RETRIEVE STATS, PM DATA AND INITIALIZE REGISTERS FOR ISUP MESSAGES

**SUMMARY:** This procedure provides steps to retrieve statistics and performance monitored data as well as initialize the registers for ISUP messages.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - SS7 Point Codes
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?
  - If using **EMS**, then continue to the next step.
  - If using **TL1**, then go to [Step 11](#).
3. Select your task from the following and go to the indicated step.
  - Retrieve statistics for ISUP messages ..... [Step 5](#)
  - Retrieve PM data for ISUP messages ..... [Step 7](#)
  - Clear the counters for ISUP message statistics ..... [Step 9](#)
  - Finished, no other task in the above list ..... continue to the next step.
4.  **YOU HAVE COMPLETED THIS PROCEDURE.**
5. Retrieve statistics for the total number of protocol messages and the various ISUP messages. Double-click the switch name in the switch status panel to select it for the main panel Double-click *SS7* and then *Point Codes*. Right-click an interface and select *View, Stats* and then click *Refresh* near the bottom of the panel for latest information. Refer to [Figure 1](#).

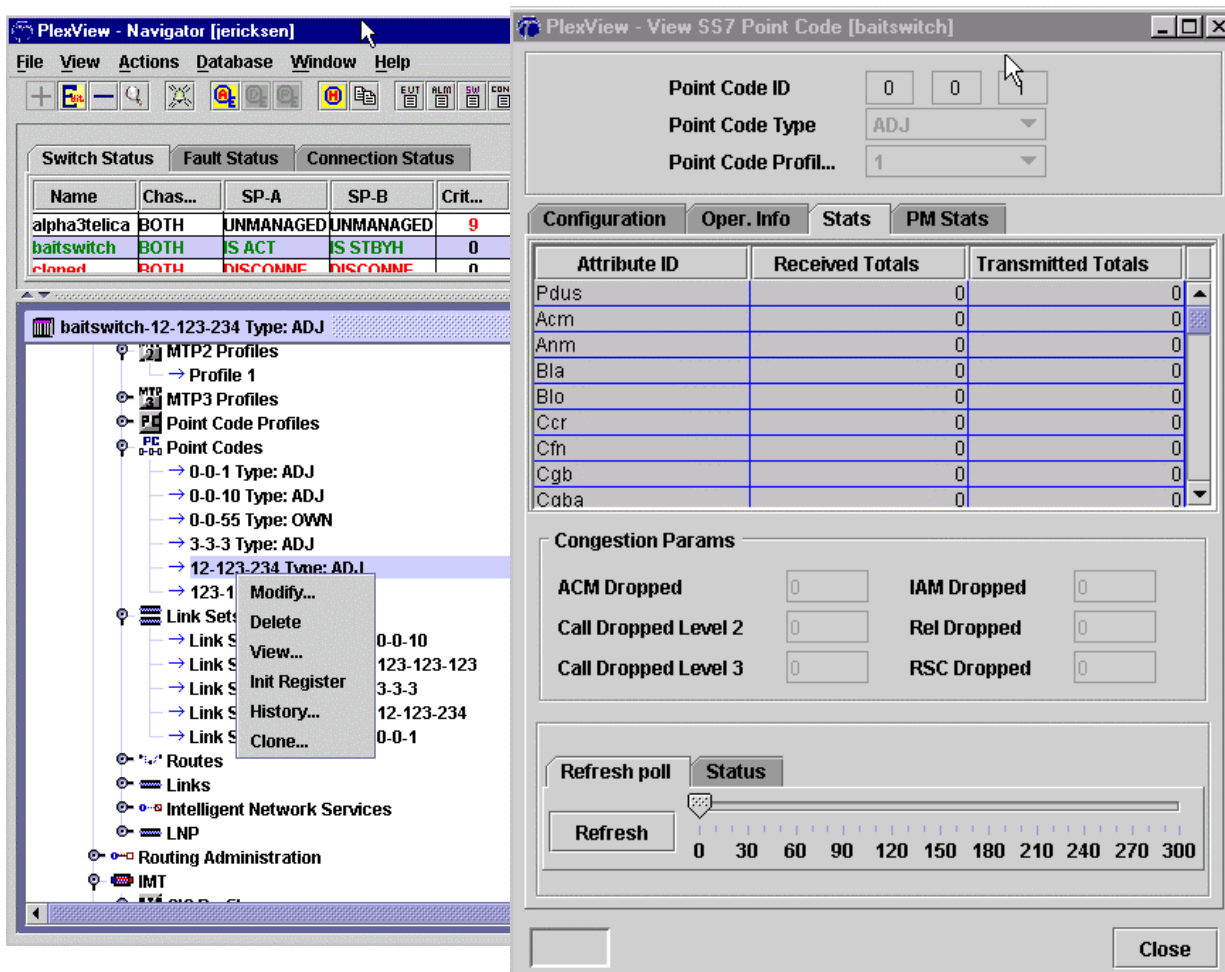


Figure 1. SS7 ISUP Messages Stats

**Parameters and Descriptions:**

- Point Code ID = {0 ... 255}-{0 ... 255}-{0 ... 255} - SS7 point code.
- Point Code Type = {ADJ|REM|OWN} – Point code type.
- Point Code Profile ID = {1 - 128} – Point Code profile number.
- Acm = {0 - 4,294,967,295} - Total of address complete messages.
- Anm = {0 - 4,294,967,295} - Total of answer messages.
- Bla = {0 - 4,294,967,295} - Total of blocking acknowledgement messages.
- Blo = {0 - 4,294,967,295} - Total of blocking messages.
- Ccr = {0 - 4,294,967,295} - Total of continuity check request messages.
- Cfn = {0 - 4,294,967,295} - Total of confusion messages.
- Cgb = {0 - 4,294,967,295} - Total of circuit group blocking messages.
- Cgba = {0 - 4,294,967,295} - Total of circuit group blocking acknowledgement messages.
- Cgu = {0 - 4,294,967,295} - Total of circuit group unblocking messages.

|        |                                                                                     |
|--------|-------------------------------------------------------------------------------------|
| Cgua   | = {0 - 4,294,967,295} - Total of circuit group unblocking acknowledgement messages. |
| Con    | = {0 - 4,294,967,295} - Total of connect messages.                                  |
| Cott   | = {0 - 4,294,967,295} - Total of continuity messages.                               |
| Cpg    | = {0 - 4,294,967,295} - Total of call progress messages.                            |
| Cqm    | = {0 - 4,294,967,295} - Total of circuit query messages.                            |
| Cqr    | = {0 - 4,294,967,295} - Total of circuit query acknowledgement messages.            |
| Cra    | = {0 - 4,294,967,295} - Total of circuit reservation acknowledgement messages.      |
| Crg    | = {0 - 4,294,967,295} - Total of charging messages.                                 |
| Crm    | = {0 - 4,294,967,295} - Total of circuit reservation messages.                      |
| Cvr    | = {0 - 4,294,967,295} - Total of circuit validation response messages.              |
| Cvt    | = {0 - 4,294,967,295} - Total of circuit validation messages.                       |
| Exm    | = {0 - 4,294,967,295} - Total of exit messages.                                     |
| Faa    | = {0 - 4,294,967,295} - Total of facility accepted messages.                        |
| Fac    | = {0 - 4,294,967,295} - Total of facility messages.                                 |
| FarMsg | = {0 - 4,294,967,295} - Total of facility request messages.                         |
| Fot    | = {0 - 4,294,967,295} - Total of forward transfer messages.                         |
| Frj    | = {0 - 4,294,967,295} - Total of facility rejected messages.                        |
| Gra    | = {0 - 4,294,967,295} - Total of circuit group reset acknowledgement messages.      |
| Grs    | = {0 - 4,294,967,295} - Total of circuit group reset messages.                      |
| Iam    | = {0 - 4,294,967,295} - Total of initial address messages.                          |
| Idr    | = {0 - 4,294,967,295} - Total of identification request messages.                   |
| Inf    | = {0 - 4,294,967,295} - Total of information messages.                              |
| Inr    | = {0 - 4,294,967,295} - Total of information request messages.                      |
| Irs    | = {0 - 4,294,967,295} - Total of identification response messages.                  |
| Lop    | = {0 - 4,294,967,295} - Total of loop prevention messages.                          |
| lpa    | = {0 - 4,294,967,295} - Total of loopback acknowledgement messages.                 |
| Nrm    | = {0 - 4,294,967,295} - Total of network resource management messages.              |
| Olm    | = {0 - 4,294,967,295} - Total of overload messages.                                 |
| Pam    | = {0 - 4,294,967,295} - Total of pass-along messages.                               |
| Pdus   | = {0 - 4,294,967,295} - Total of protocol data units.                               |
| Rel    | = {0 - 4,294,967,295} - Total of release messages.                                  |
| Res    | = {0 - 4,294,967,295} - Total of resume messages.                                   |
| Rlc    | = {0 - 4,294,967,295} - Total of release complete messages.                         |
| Rsc    | = {0 - 4,294,967,295} - Total of reset messages.                                    |
| Sam    | = {0 - 4,294,967,295} - Total of subsequent address messages.                       |
| Sgm    | = {0 - 4,294,967,295} - Total of segmentation messages.                             |
| Sus    | = {0 - 4,294,967,295} - Total of suspend messages.                                  |
| Uba    | = {0 - 4,294,967,295} - Total of unblocking acknowledgement messages.               |
| Ubl    | = {0 - 4,294,967,295} - Total of unblocking messages.                               |
| Ucic   | = {0 - 4,294,967,295} - Total of unequipped CIC messages.                           |

|                      |                                                                                  |
|----------------------|----------------------------------------------------------------------------------|
| Upa                  | = {0 - 4,294,967,295} - Total of user part available messages.                   |
| Upt                  | = {0 - 4,294,967,295} - Total of user part test messages.                        |
| Usr                  | = {0 - 4,294,967,295} - Total of user-to-user messages.                          |
| ACM Dropped          | = Number of ACM messages dropped                                                 |
| Call Dropped Level 2 | = Number of Level 2 messages dropped.                                            |
| Call Dropped Level 3 | = Number of Level 3 messages dropped.                                            |
| IAM Dropped          | = Number of IAM messages dropped                                                 |
| REL Dropped          | = Total number of RELEASE messages (REL)<br>dropped because of congestion.       |
| RSC Dropped          | = Total number of RESET CIRCUIT messages (RSC)<br>dropped because of congestion. |

6. Do you want to retrieve PM data for ISUP messages?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 3](#).
7. Retrieve current and historical performance data for ISUP messages received from a destination point code. Double-click the switch name in the switch status panel to select it for the main panel Double-click *SS7* and then *Point Codes*. Right-click an interface and select *View, PM Stats* and then click *Refresh* near the bottom of the panel for latest information. Refer to [Figure 2](#).
8. Do you want to initialize registers for ISUP message statistics?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 3](#).

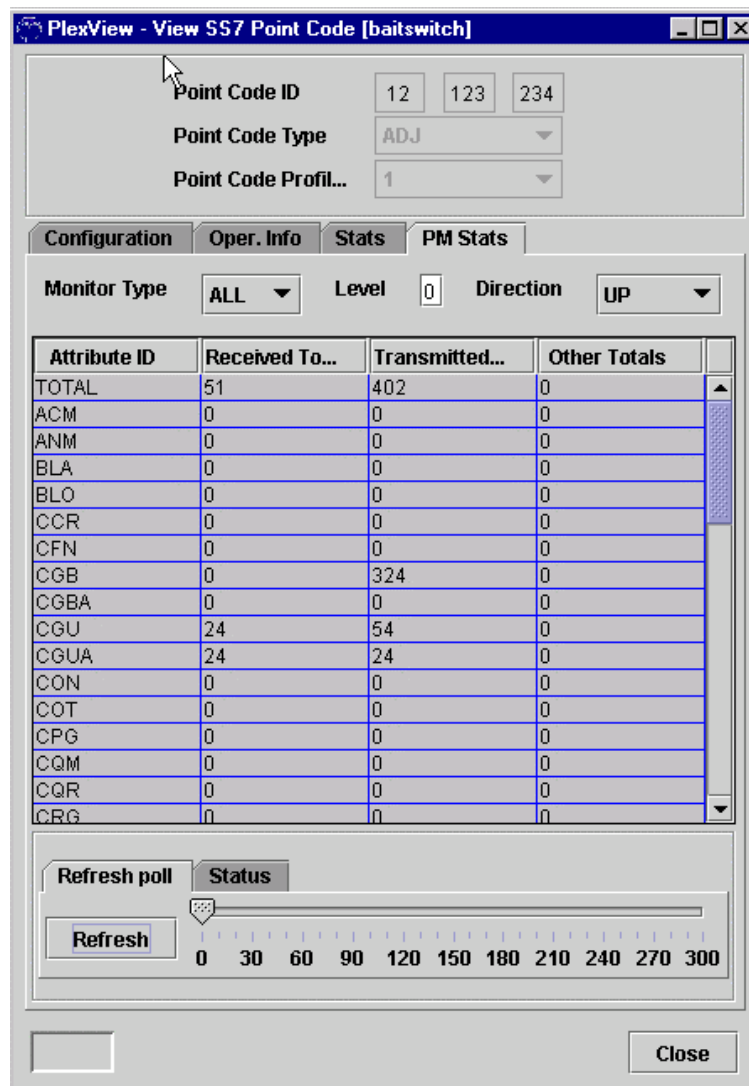


Figure 2. ISUP Messages PM Data

**Parameters and Descriptions:**

- Point Code ID = {0 ... 255}-{0 ... 255}-{0 ... 255} - SS7 point code.
- Point Code Type = {ADJ|REM|OWN} - Point code type.
- Point Code Profile ID = {1 - 128} - Point Code profile number.
- Monitor Type = ALL - All statistics counters of the group determined by the *dirn* parameter.
- Level = Monitored value.
- Direction = {UP|DOWN}
- ACM = Number of address complete messages.
- ANM = Number of answer messages.
- BLA = Number of blocking acknowledgement messages.
- BLO = Number of blocking messages.
- CCR = Number of continuity check request messages.
- CFN = Number of confusion messages.

|          |                                                                |
|----------|----------------------------------------------------------------|
| CGB      | = Number of circuit group blocking messages                    |
| CGBA     | = Number of circuit group blocking acknowledgement messages.   |
| CGU      | = Number of circuit group unblocking messages.                 |
| CGUA     | = Number of circuit group unblocking acknowledgement messages. |
| CON      | = Number of connect messages.                                  |
| COT      | = Number of continuity messages.                               |
| CPG      | = Number of call progress messages.                            |
| CQM      | = Number of circuit query messages.                            |
| CQR      | = Number of circuit query acknowledgement messages.            |
| CRA      | = Number of circuit reservation acknowledgement messages.      |
| CRG      | = Number of charging messages.                                 |
| CRM      | = Number of circuit reservation messages.                      |
| CVR      | = Number of circuit validation response messages.              |
| CVT      | = Number of circuit validation messages.                       |
| EXM      | = Number of exit messages.                                     |
| FAA      | = Number of facility accepted messages.                        |
| FAC      | = Number of facility messages.                                 |
| FARMSG   | = Number of facility request messages.                         |
| FOT      | = Number of forward transfer messages.                         |
| FRJ      | = Number of facility rejected messages.                        |
| GRA      | = Number of circuit group reset acknowledgement messages.      |
| GRS      | = Number of circuit group reset messages.                      |
| IAM      | = Number of initial address messages.                          |
| IDR      | = Number of identification request messages.                   |
| INF      | = Number of information messages.                              |
| INR      | = Number of information request messages.                      |
| IRS      | = Number of identification response messages.                  |
| LASTINIT | = Number of minutes since initialization of all counters.      |
| LOP      | = Number of loop prevention messages.                          |
| LPA      | = Number of loopback acknowledgement messages.                 |
| NRM      | = Number of network resource management messages.              |
| OLM      | = Number of overload messages.                                 |
| PAM      | = Number of pass-along messages.                               |
| REL      | = Number of release messages.                                  |
| RES      | = Number of resume messages.                                   |
| RLC      | = Number of release complete messages.                         |
| RSC      | = Number of reset messages.                                    |
| SAM      | = Number of subsequent address messages.                       |
| SGM      | = Number of segmentation messages.                             |
| SUS      | = Number of suspend messages.                                  |
| TOTAL    | = Total number of messages.                                    |
| UBA      | = Number of unblocking acknowledgement messages.               |
| UBL      | = Number of unblocking messages.                               |
| UCIC     | = Number of unequipped CIC messages.                           |
| UPA      | = Number of user part available messages.                      |
| UPT      | = Number of user part test messages.                           |
| USR      | = Number of user-to-user messages.                             |



9. Clear the counters for ISUP message statistics received from a destination point code. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *SS7* and then *Point Codes*. Right-click an interface and select *Init Register*. Make changes and then click *Apply*. Refer to [Figure 3](#).

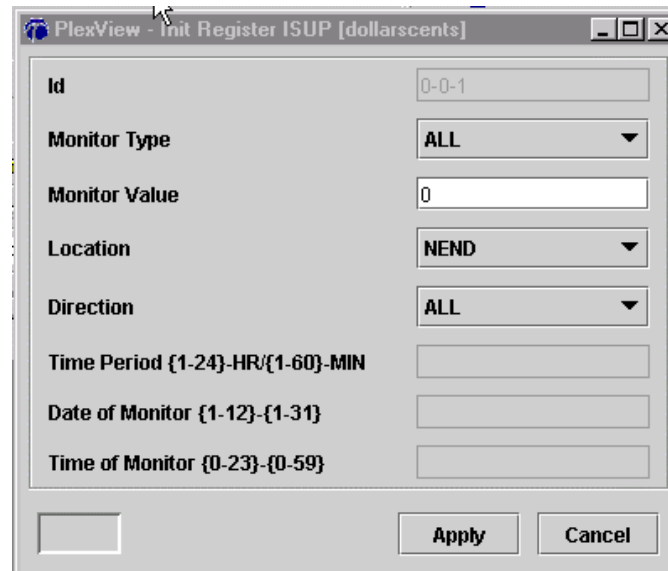


Figure 3. Initialize PM Registers for ISUP Messages

**Input Parameters:**

- ID = {0 . . . 255}-{0 . . . 255}-{0 . . . 255} - Destination point code.
- Monitor Type = ALL - All statistics counters of the group determined by the *dirn* parameter.  
= UPDSTSTHRSHLD - Threshold value for the increase in the number of established calls that triggers an update to the statistics on the standby processor
- Monitor Value = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".
- Location = NEND - Near end counters to be initialized.
- Direction = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.
- Time Period = {1-24}-HR/{1-60}-MIN - Time - Currently not used.
- Date of Monitor = {1-12}-{1-31} - Date - Currently not used.
- Time of Monitor = {0-23}-{0-59} - Time - Currently not used.

10. Do you want to check ISUP message statistics again?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 3](#).

11. Select your task from the following and go to the indicated step.

- Retrieve statistics for ISUP messages ..... [Step 13](#)
- Retrieve PM data for ISUP messages ..... [Step 15](#)
- Clear the counters for ISUP message statistics ..... [Step 17](#)
- Finished, no other task in the above list ..... continue to the next step.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Retrieve statistics for the total number of protocol messages and the various ISUP messages transmitted and received using the RTRV-STATS-ISUPMSG command.

Command Syntax: RTRV-STATS-ISUPMSG:[TID]:<ss7Pc>:  
[CTAG];

**Input Parameters:**

ss7Pc = {0...255}-{0...255}-{0...255} Identifies the AID as an SS7 point code.

Command Example: RTRV-STATS-ISUPMSG::1-1-1;;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"ss7Pc:PDUSTX=<pdusTx>, PDUSRX=<pdusRx>, ACMRX=<acmRx>,
ANMRX=<anmRx>, BLARX=<blaRx>, BLORX=<bloRx>, CCRX=<ccrRx>,
CFNRX=<cfnRx>, CGBRX=<cgbRx>, CGBARX=<cgbaRx>, CGURX=<cguRx>,
CGUARX=<cguaRx>, CONRX=<conRx>, COTRX=<cotRx>, CPGRX=<cpgrRx>,
CQMRX=<cqmRx>, CQRRX=<cqrRx>, CRGRX=<crgRx>, FAARX=<faaRx>,
FACRX=<facRx>, FARMSGRX=<farMsgRx>, FOTRX=<fotRx>,
FRJRX=<frjRx>, GRARX=<graRx>, GRSRX=<grsRx>, IAMRX=<iamRx>,
IDRRX=<idrRx>, INFRX=<infRx>, INRRX=<inrRx>, IRSRX=<irsRx>,
LOPRX=<lopRx>, LPARX=<lpaRx>, NMRX=<nrmRx>, OLMRX=<olmRx>,
PAMRX=<pamRx>, RELRX=<relRx>, RESRX=<resRx>, RLCRX=<rlcRx>,
RSCRX=<rscRx>, SAMRX=<samRx>, SGMRX=<sgmRx>, SUSRX=<susRx>,
UBARX=<ubaRx>, UBLRX=<ublRx>, UCICRX=<ucicRx>, UPARX=<upaRx>,
UPTRX=<uptRx>, USRRX=<usrRx>, CRARX=<craRx>, CRMRX=<crmRx>,
CVRX=<cvrRx>, CVTRX=<cvtrRx>, EXMRX=<exmRx>, ACMTX=<acmTx>,
ANMTX=<anmTx>, BLATX=<blaTx>, BLOTX=<bloTx>, CCRTX=<ccrTx>,
CFNTX=<cfnTx>, CGBTX=<cgbTx>, CGBATX=<cgbaTx>, CGUTX=<cguTx>,
CGUATX=<cguaTx>, CONTX=<conTx>, COTTX=<cotTx>, CPGTX=<cpgrTx>,
CQMTX=<cqmTx>, CQRTX=<cqrTx>, CRGTX=<crgTx>, FAATX=<faaTx>,
FACTX=<facTx>, FARMSGTX=<farMsgTx>, FOTTX=<fotTx>,
```

```
FRJTX=<frjTx>, GRATX=<graTx>, GRSTX=<grsTx>, IAMTX=<iamTx>,
IDRTX=<idrTx>, INFTX=<infTx>, INRTX=<inrTx>,IRSTX=<irsTx>,
LOPTX=<lopTx>, LPATX=<lpaTx>, NRMTX=<nrmTx>, OLMTX=<olmTx>,
PAMTX=<pamTx>, RELTX=<relTx>, RESTX=<resTx>, RLCTX=<rlcTx>,
RSCTX=<rscTx>, SAMTX=<samTx>, SGMTX=<sgmTx>, SUSTX=<susTx>,
UBATX=<ubaTx>, UBLTX=<ublTx>, UCICTX=<ucicTx>, UPATX=<upaTx>,
UPTTX=<uptTx>, USRTX=<usrTx>, CRATX=<craTx>, CRMTX=<crmTx>,
CVRTX=<cvrTx>, CVTTX=<cvtTx>, EXMTX=<exmTx>,
ACMDROPPED=<acmDropped>, CALLDROPPED2=<callDropped2>,
CALLDROPPED3=<callDropped3>, IAMDROPPED=<iamDropped>,
RELDROPPED=<relDropped>, RSCDROPPED=<rscDropped>"
;
```

### Output Parameters:

Parameters ending with "Rx" are received from the point code and those ending with "Tx" are.

|        |                                                                                     |
|--------|-------------------------------------------------------------------------------------|
| acmRx  | = {0 - 4,294,967,295} - Total of address complete messages.                         |
| acmTx  | = {0 - 4,294,967,295} - Total of address complete messages.                         |
| anmRx  | = {0 - 4,294,967,295} - Total of answer messages.                                   |
| anmTx  | = {0 - 4,294,967,295} - Total of answer messages.                                   |
| blaRx  | = {0 - 4,294,967,295} - Total of blocking acknowledgement messages.                 |
| blaTx  | = {0 - 4,294,967,295} - Total of blocking acknowledgement messages.                 |
| bloRx  | = {0 - 4,294,967,295} - Total of blocking messages.                                 |
| bloTx  | = {0 - 4,294,967,295} - Total of blocking messages.                                 |
| ccrRx  | = {0 - 4,294,967,295} - Total of continuity check request messages.                 |
| ccrTx  | = {0 - 4,294,967,295} - Total of continuity check request messages.                 |
| cfnRx  | = {0 - 4,294,967,295} - Total of confusion messages.                                |
| cfnTx  | = {0 - 4,294,967,295} - Total of confusion messages.                                |
| cgbaRx | = {0 - 4,294,967,295} - Total of circuit group blocking acknowledgement messages.   |
| cgbaTx | = {0 - 4,294,967,295} - Total of circuit group blocking acknowledgement messages.   |
| cgbRx  | = {0 - 4,294,967,295} - Total of circuit group blocking messages.                   |
| cgbTx  | = {0 - 4,294,967,295} - Total of circuit group blocking messages.                   |
| cguaRx | = {0 - 4,294,967,295} - Total of circuit group unblocking acknowledgement messages. |
| cguaTx | = {0 - 4,294,967,295} - Total of circuit group unblocking acknowledgement messages. |
| cguRx  | = {0 - 4,294,967,295} - Total of circuit group unblocking messages.                 |
| cguTx  | = {0 - 4,294,967,295} - Total of circuit group unblocking messages.                 |
| conRx  | = {0 - 4,294,967,295} - Total of connect messages.                                  |
| conTx  | = {0 - 4,294,967,295} - Total of connect messages.                                  |

|          |                                                                                |
|----------|--------------------------------------------------------------------------------|
| cotRx    | = {0 - 4,294,967,295} - Total of continuity messages.                          |
| cotTx    | = {0 - 4,294,967,295} - Total of continuity messages.                          |
| cpgRx    | = {0 - 4,294,967,295} - Total of call progress messages.                       |
| cpgTx    | = {0 - 4,294,967,295} - Total of call progress messages.                       |
| cqmRx    | = {0 - 4,294,967,295} - Total of circuit query messages.                       |
| cqmTx    | = {0 - 4,294,967,295} - Total of circuit query messages.                       |
| cqrRx    | = {0 - 4,294,967,295} - Total of circuit query acknowledgement messages.       |
| cqrTx    | = {0 - 4,294,967,295} - Total of circuit query acknowledgement messages.       |
| craRx    | = {0 - 4,294,967,295} - Total of circuit reservation acknowledgement messages. |
| craTx    | = {0 - 4,294,967,295} - Total of circuit reservation acknowledgement messages. |
| crgRx    | = {0 - 4,294,967,295} - Total of charging messages.                            |
| crgTx    | = {0 - 4,294,967,295} - Total of charging messages.                            |
| crmRx    | = {0 - 4,294,967,295} - Total of circuit reservation messages.                 |
| crmTx    | = {0 - 4,294,967,295} - Total of circuit reservation messages.                 |
| cvrRx    | = {0 - 4,294,967,295} - Total of circuit validation response messages.         |
| cvrTx    | = {0 - 4,294,967,295} - Total of circuit validation response messages.         |
| cvtRx    | = {0 - 4,294,967,295} - Total of circuit validation messages.                  |
| cvtTx    | = {0 - 4,294,967,295} - Total of circuit validation messages.                  |
| exmRx    | = {0 - 4,294,967,295} - Total of exit messages.                                |
| exmTx    | = {0 - 4,294,967,295} - Total of exit messages.                                |
| faaRx    | = {0 - 4,294,967,295} - Total of facility accepted messages.                   |
| faaTx    | = {0 - 4,294,967,295} - Total of facility accepted messages.                   |
| facRx    | = {0 - 4,294,967,295} - Total of facility messages.                            |
| facTx    | = {0 - 4,294,967,295} - Total of facility messages.                            |
| farMsgRx | = {0 - 4,294,967,295} - Total of facility request messages.                    |
| farMsgTx | = {0 - 4,294,967,295} - Total of facility request messages.                    |
| forRx    | = {0 - 4,294,967,295} - Total of forward transfer messages.                    |
| forTx    | = {0 - 4,294,967,295} - Total of forward transfer messages.                    |
| frjRx    | = {0 - 4,294,967,295} - Total of facility rejected messages.                   |
| frjTx    | = {0 - 4,294,967,295} - Total of facility rejected messages.                   |
| graRx    | = {0 - 4,294,967,295} - Total of circuit group reset acknowledgement messages. |
| graTx    | = {0 - 4,294,967,295} - Total of circuit group reset acknowledgement messages. |
| grsRx    | = {0 - 4,294,967,295} - Total of circuit group reset messages.                 |
| grsTx    | = {0 - 4,294,967,295} - Total of circuit group reset messages.                 |
| iamRx    | = {0 - 4,294,967,295} - Total of initial address messages.                     |
| iamTx    | = {0 - 4,294,967,295} - Total of initial address messages.                     |
| idrRx    | = {0 - 4,294,967,295} - Total of identification request messages.              |
| idrTx    | = {0 - 4,294,967,295} - Total of identification request messages.              |
| infRx    | = {0 - 4,294,967,295} - Total of information messages.                         |
| infTx    | = {0 - 4,294,967,295} - Total of information messages.                         |

|            |                                                                                                         |
|------------|---------------------------------------------------------------------------------------------------------|
| inrRx      | = {0 - 4,294,967,295} - Total of information request messages.                                          |
| inrTx      | = {0 - 4,294,967,295} - Total of information request messages.                                          |
| irsRx      | = {0 - 4,294,967,295} - Total of identification response messages.                                      |
| irsTx      | = {0 - 4,294,967,295} - Total of identification response messages.                                      |
| lopRx      | = {0 - 4,294,967,295} - Total of loop prevention messages.                                              |
| lopTx      | = {0 - 4,294,967,295} - Total of loop prevention messages.                                              |
| lpaRx      | = {0 - 4,294,967,295} - Total of loopback acknowledgement messages.                                     |
| lpaTx      | = {0 - 4,294,967,295} - Total of loopback acknowledgement messages.                                     |
| nrmRx      | = {0 - 4,294,967,295} - Total of network resource management messages.                                  |
| nrmTx      | = {0 - 4,294,967,295} - Total of network resource management messages.                                  |
| olmRx      | = {0 - 4,294,967,295} - Total of overload messages.                                                     |
| olmTx      | = {0 - 4,294,967,295} - Total of overload messages.                                                     |
| pamRx      | = {0 - 4,294,967,295} - Total of pass-along messages.                                                   |
| pamTx      | = {0 - 4,294,967,295} - Total of pass-along messages.                                                   |
| pdusRx     | = {0 - 4,294,967,295} - Total of protocol data units.                                                   |
| pdusTx     | = {0 - 4,294,967,295} - Total of protocol data units.                                                   |
| relDropped | = {0 . . . 4,294,967,295} - Total number of RELEASE messages (REL) dropped because of congestion.       |
| relRx      | = {0 - 4,294,967,295} - Total of release messages.                                                      |
| relTx      | = {0 - 4,294,967,295} - Total of release messages.                                                      |
| resRx      | = {0 - 4,294,967,295} - Total of resume messages.                                                       |
| resTx      | = {0 - 4,294,967,295} - Total of resume messages.                                                       |
| rlcRx      | = {0 - 4,294,967,295} - Total of release complete messages.                                             |
| rlcTx      | = {0 - 4,294,967,295} - Total of release complete messages.                                             |
| rscDropped | = {0 . . . 4,294,967,295} - Total number of RESET CIRCUIT messages (RSC) dropped because of congestion. |
| rscRx      | = {0 - 4,294,967,295} - Total of reset messages.                                                        |
| rscTx      | = {0 - 4,294,967,295} - Total of reset messages.                                                        |
| samRx      | = {0 - 4,294,967,295} - Total of subsequent address messages.                                           |
| samTx      | = {0 - 4,294,967,295} - Total of subsequent address messages.                                           |
| sgmRx      | = {0 - 4,294,967,295} - Total of segmentation messages.                                                 |
| sgmTx      | = {0 - 4,294,967,295} - Total of segmentation messages.                                                 |
| ss7Pc      | = {0 . . . 255}-{0 . . . 255}-{0 . . . 255} AID is an SS7 point code.                                   |
| susRx      | = {0 - 4,294,967,295} - Total of suspend messages.                                                      |
| susTx      | = {0 - 4,294,967,295} - Total of suspend messages.                                                      |
| totalRx    | = Total number of messages received                                                                     |
| totalTx    | = Total number of messages transmitted                                                                  |
| ubaRx      | = {0 - 4,294,967,295} - Total of unblocking acknowledgement messages.                                   |
| ubaTx      | = {0 - 4,294,967,295} - Total of unblocking acknowledgement messages.                                   |
| ublRx      | = {0 - 4,294,967,295} - Total of unblocking messages.                                                   |
| ublTx      | = {0 - 4,294,967,295} - Total of unblocking messages.                                                   |
| ucicRx     | = {0 - 4,294,967,295} - Total of unequipped CIC messages.                                               |

ucicTx = {0 - 4,294,967,295} - Total of unequipped CIC messages.  
 upaRx = {0 - 4,294,967,295} - Total of user part available messages.  
 upaTx = {0 - 4,294,967,295} - Total of user part available messages.  
 uptRx = {0 - 4,294,967,295} - Total of user part test messages.  
 uptTx = {0 - 4,294,967,295} - Total of user part test messages.  
 usrRx = {0 - 4,294,967,295} - Total of user-to-user messages.  
 usrTx = {0 - 4,294,967,295} - Total of user-to-user messages.

### Output Example:

```
telica 2000-09-29 14:37:49
M 0 COMPLD
"1-1-1:PDUSTX=0, PDUSRX=0, ACMRX=0, ANMRX=0, BLARX=0,
BLORX=0, CCRRX=0, CFNRX=0, CGBRX=0, CGBARX=0, CGURX=0, CGUARX=0,
CONRX=0, COTRX=0, CPGRX=0, CQMRX=0, CQRRX=0, CRGRX=0, FAARX=0,
FACRX=0, FARMSGRX=0, FOTRX=0, FRJRX=0, GRARX=0, GRSRX=0, IAMRX=0,
IDRRX=0, INFRX=0, INRRX=0, IRSRX=0, LOPRX=0, LPARX=0, NRMRX=0,
OLMRX=0, PAMRX=0, RELRX=0, RESRX=0, RLCRX=0, RSCRX=0, SAMRX=0,
SGMRX=0, SUSRX=0, UBARX=0, UBLRX=0, UCICRX=0, UPARX=0, UPTRX=0,
USRRX=0, CRARX=0, CRM RX=0, CVRRX=0, CVTRX=0, EXMRX=0, ACMTX=0,
ANMTX=0, BLATX=0, BLOTX=0, CCRTX=0, CFNTX=0, CGBTX=0, CGBATX=0,
CGUTX=0, CGUATX=0, CONTX=0, COTTX=0, CPGTX=0, CQMTX=0, CQRTX=0,
CRGTX=0, FAATX=0, FACTX=0, FARMSGTX=0, FOTTX=0, FRJTX=0, GRATX=0,
GRSTX=0, IAMTX=0, IDRTX=0, INFTX=0, INRTX=0, IRSTX=0, LOPTX=0,
LPATX=0, NRMTX=0, OLMTX=0, PAMTX=0, RELTX=0, RESTX=0, RLCTX=0,
RSCTX=0, SAMTX=0, SGM TX=0, SUSTX=0, UBATX=0, UBLTX=0, UCICTX=0,
UPATX=0, UPTTX=0, USRTX=0, CRATX=0, CRMTX=0, CVRTX=0, CVTTX=0,
EXMTX=0, ACMDROPPED=0, CALLDROPPED2=0, CALLDROPPED3=0,
IAMDROPPED=0, RELDROPPED=0, RSCDROPPED=0"
/* RTRV-STATS-ISUPMSG */
;
```

### 14. Do you want to retrieve PM data for ISUP messages?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

### 15. Retrieve current and historical performance data for ISUP messages received from a destination point code using the RTRV-PM-ISUPMSG command.

Command Syntax: RTRV-PM-ISUPMSG:[TID]:<ss7Pc>:[CTAG]::  
 [<montype>],[<monlev>],[<locn>],  
 [<dirn>;

### Input Parameters:

ss7Pc = {0 ... 255}-{0 ... 255}-{0 ... 255} - Destination point code.  
 montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
 monlev = {0 ... 255}-{UP|DOWN} - Level of the requested monitored parameter.  
 locn = NEND - Near end counters to be initialized.  
 dirn = ALL - All directions of the data stored in statistics counters.

- = NA - Direction not applicable.
- = RCV - Receive direction only of the data stored in statistics counters.
- = TRMT - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-ISUPMSG: :005-005-005;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7Pc>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

- ss7Pc = {0 . . . 255}-{0 . . . 255}-{0 . . . 255} - Destination point code.
- montype = ALL - All statistics counters of the group determined by the *dirn* parameter.
  - = UPDSTSTHRSHLD - Threshold value for the increase in the number of established calls that triggers an update to the statistics on the standby processor
- montype = ACMRX - Number of address complete messages received.
  - = ACMTX - Number of address complete messages transmitted.
  - = ALL - all types.
  - = ANMRX - Number of answer messages received.
  - = ANMTX - Number of address complete messages transmitted.
  - = BLARX - Number of blocking acknowledgement messages received.
  - = BLATX - Number of blocking acknowledgement messages transmitted.
  - = BLORX - Number of blocking messages received.
  - = BLOTX - Number of blocking messages transmitted.
  - = CCRRX - Number of continuity check request messages received.
  - = CCRTX - Number of continuity check request messages transmitted.
  - = CFNRX - Number of confusion messages received.
  - = CFNTX - Number of confusion messages transmitted.
  - = CGBARX - Number of circuit group blocking acknowledgement messages received.
  - = CGBATX - Number of circuit group blocking acknowledgement messages transmitted.
  - = CGBRX - Number of circuit group blocking messages received
  - = CGBTX - Number of circuit group blocking messages transmitted.
  - = CGUARX - Number of circuit group unblocking acknowledgement messages received.

- = CGUATX - Number of circuit group unblocking acknowledgement messages transmitted.
- = CGURX - Number of circuit group unblocking messages received.
- = CGUTX - Number of circuit group unblocking messages transmitted.
- = CONRX - Number of connect messages received.
- = CONTX - Number of connect messages transmitted.
- = COTRX - Number of continuity messages received.
- = COTTX - Number of continuity messages transmitted.
- = CPGRX - Number of call progress messages received.
- = CPGTX - Number of call progress messages transmitted.
- = CQMRX - Number of circuit query messages transmitted.
- = CQMTX - Number of circuit query messages transmitted.
- = CQRRX - Number of circuit query acknowledgement messages received.
- = CQRTX - Number of circuit query acknowledgement messages transmitted.
- = CRARX - Number of circuit reservation acknowledgement messages received.
- = CRATX - Number of circuit reservation acknowledgement messages transmitted.
- = CRGRX - Number of charging messages received.
- = CRGTX - Number of charging messages transmitted.
- = CRMRX - Number of circuit reservation messages received.
- = CRMTX - Number of circuit reservation messages transmitted.
- = CVRRX - Number of circuit validation response messages received.
- = CVRTX - Number of circuit validation response messages transmitted.
- = CVTRX - Number of circuit validation messages received.
- = CVTTX - Number of circuit validation messages transmitted.
- = EXMRX - Number of exit messages received.
- = EXMTX - Number of exit messages transmitted.
- = FAARX - Number of facility accepted messages received.
- = FAATX - Number of facility accepted messages transmitted.
- = FACRX - Number of facility messages received.
- = FACTX - Number of facility messages transmitted.
- = FARMSGRX - Number of facility request messages received.
- = FARMSGTX - Number of facility request messages transmitted.
- = FOTRX - Number of forward transfer messages received.
- = FOTTX - Number of forward transfer messages transmitted.
- = FRJRX - Number of facility rejected messages received.
- = FRJTX - Number of facility rejected messages transmitted.
- = GRARX - Number of circuit group reset acknowledgement messages received.
- = GRATX - Number of circuit group reset acknowledgement messages transmitted.



- = GRSRX - Number of circuit group reset messages received.
- = GRSTX - Number of circuit group reset messages transmitted.
- = IAMRX - Number of initial address messages received.
- = IAMTX - Number of initial address messages transmitted.
- = IDRRX - Number of identification request messages received.
- = IDRTX - Number of identification request messages transmitted.
- = INFRX - Number of information messages received.
- = INFTX - Number of information messages transmitted.
- = INRRX - Number of information request messages received.
- = INRTX - Number of information request messages transmitted.
- = IRSRX - Number of identification response messages received.
- = IRSTX - Number of identification response messages transmitted.
- = LASTINITRCV - Number of minutes since initialization of all RCV (receive) counters.
- = LASTINITTRMT - Number of minutes since initialization of all TRMT (transmit) counters.
- = LOPRX - Number of loop prevention messages received.
- = LOPTX - Number of loop prevention messages transmitted.
- = LPARX - Number of loopback acknowledgement messages received.
- = LPATX - Number of loopback acknowledgement messages transmitted.
- = NRM RX - Number of network resource management messages received.
- = NRMTX - Number of network resource management messages transmitted.
- = OLMRX - Number of overload messages received.
- = OLMTX - Number of overload messages transmitted.
- = PAMRX - Number of pass-along messages received.
- = PAMTX - Number of pass-along messages transmitted.
- = RELRX - Number of release messages received.
- = RELTX - Number of release messages transmitted.
- = RESRX - Number of resume messages received.
- = RESTX - Number of resume messages transmitted.
- = RLCRX - Number of release complete messages received.
- = RLCTX - Number of release complete messages transmitted.
- = RSCRX - Number of reset messages received.
- = RSCTX - Number of reset messages transmitted.
- = SAMRX - Number of subsequent address messages received.
- = SAMTX - Number of subsequent address messages transmitted.
- = SGMRX - Number of segmentation messages received.
- = SGM TX - Number of segmentation messages transmitted.
- = SUSRX - Number of suspend messages received.
- = SUSTX - Number of suspend messages transmitted.
- = TOTALRX - Total number of messages received.
- = TOTALTX - Total number of messages transmitted.

|        |                                                                                                                                                        |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | = UBARX - Number of unblocking acknowledgement messages received.                                                                                      |
|        | = UBATX - Number of unblocking acknowledgement messages transmitted.                                                                                   |
|        | = UBLRX - Number of unblocking messages received.                                                                                                      |
|        | = UBLTX - Number of unblocking messages transmitted.                                                                                                   |
|        | = UCICRX - Number of unequipped CIC messages received.                                                                                                 |
|        | = UCICTX - Number of unequipped CIC messages transmitted.                                                                                              |
|        | = UPARX - Number of user part available messages received.                                                                                             |
|        | = UPATX - Number of user part available messages transmitted.                                                                                          |
|        | = UPDTHRSHLD - Threshold value for the increase in the number of established calls that triggers an update to the statistics on the standby processor. |
|        | = UPTRX - Number of user part test messages received.                                                                                                  |
|        | = UPTTX - Number of user part test messages transmitted.                                                                                               |
|        | = USRRX - Number of user-to-user messages received.                                                                                                    |
|        | = USRTX - Number of user-to-user messages transmitted                                                                                                  |
| monval | = {0 – 4,294,967,295} - Monitored value.                                                                                                               |
| monlev | = {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                                |
| locn   | = <b>NEND</b> - Near end counters to be initialized.                                                                                                   |
| dirn   | = <b>ALL</b> - All directions of the data stored in statistics counters.                                                                               |
|        | = NA - Direction not applicable.                                                                                                                       |
|        | = RCV - Receive direction only of the data stored in statistics counters.                                                                              |
|        | = TRMT - Transmit direction only of the data stored in statistics counters.                                                                            |

### Output Example:

```
telica 2002-11-06 15:50:29
M 0 COMPLD
"005-005-005:TOTALTX,742610,0-UP,NEND,ALL"
"005-005-005:ACMTX,0,0-UP,NEND,ALL"
"005-005-005:ANMTX,0,0-UP,NEND,ALL"
"005-005-005:BLATX,0,0-UP,NEND,ALL"
"005-005-005:BLOTX,0,0-UP,NEND,ALL"
"005-005-005:CCRTX,0,0-UP,NEND,ALL"
"005-005-005:CFNTX,0,0-UP,NEND,ALL"
"005-005-005:CGBTX,58,0-UP,NEND,ALL"
"005-005-005:CGBATX,0,0-UP,NEND,ALL"
"005-005-005:CGUTX,28,0-UP,NEND,ALL"
"005-005-005:CGUATX,0,0-UP,NEND,ALL"
"005-005-005:CONTX,0,0-UP,NEND,ALL"
"005-005-005:COTTX,0,0-UP,NEND,ALL"
"005-005-005:CPGTX,0,0-UP,NEND,ALL"
"005-005-005:CQMTX,0,0-UP,NEND,ALL"
"005-005-005:CQRTX,0,0-UP,NEND,ALL"
```

"005-005-005:CRGTX,0,0-UP,NEND,ALL"  
"005-005-005:FAATX,0,0-UP,NEND,ALL"  
"005-005-005:FACTX,0,0-UP,NEND,ALL"  
"005-005-005:FARMSGTX,0,0-UP,NEND,ALL"  
"005-005-005:FOTTX,0,0-UP,NEND,ALL"  
"005-005-005:FRJTX,0,0-UP,NEND,ALL"  
"005-005-005:GRATX,0,0-UP,NEND,ALL"  
"005-005-005:GRSTX,0,0-UP,NEND,ALL"  
"005-005-005:IAMTX,0,0-UP,NEND,ALL"  
"005-005-005:IDRTX,0,0-UP,NEND,ALL"  
"005-005-005:INFTX,0,0-UP,NEND,ALL"  
"005-005-005:INRTX,0,0-UP,NEND,ALL"  
"005-005-005:IRSTX,0,0-UP,NEND,ALL"  
"005-005-005:LOPTX,0,0-UP,NEND,ALL"  
"005-005-005:LPATX,0,0-UP,NEND,ALL"  
"005-005-005:NRMTX,0,0-UP,NEND,ALL"  
"005-005-005:OLMTX,0,0-UP,NEND,ALL"  
"005-005-005:PAMTX,0,0-UP,NEND,ALL"  
"005-005-005:RELTx,371262,0-UP,NEND,ALL"  
"005-005-005:RESTX,0,0-UP,NEND,ALL"  
"005-005-005:RLCTX,371262,0-UP,NEND,ALL"  
"005-005-005:RSCTX,0,0-UP,NEND,ALL"  
"005-005-005:SAMTX,0,0-UP,NEND,ALL"  
"005-005-005:SGMTX,0,0-UP,NEND,ALL"  
"005-005-005:SUSTX,0,0-UP,NEND,ALL"  
"005-005-005:UBATX,0,0-UP,NEND,ALL"  
"005-005-005:UBLTX,0,0-UP,NEND,ALL"  
"005-005-005:UCICTX,0,0-UP,NEND,ALL"  
"005-005-005:UPATX,0,0-UP,NEND,ALL"  
"005-005-005:UPTTX,0,0-UP,NEND,ALL"  
"005-005-005:USRTX,0,0-UP,NEND,ALL"  
"005-005-005:CRATX,0,0-UP,NEND,ALL"  
"005-005-005:CRMTX,0,0-UP,NEND,ALL"  
"005-005-005:CVRTX,0,0-UP,NEND,ALL"  
"005-005-005:CVTTX,0,0-UP,NEND,ALL"  
"005-005-005:EXMTX,0,0-UP,NEND,ALL"  
"005-005-005:LASTINITRMT,2491,0-UP,NEND,ALL"  
"005-005-005:TOTALRX,1175948,0-UP,NEND,ALL"  
"005-005-005:ACMRX,0,0-UP,NEND,ALL"  
"005-005-005:ANMRX,0,0-UP,NEND,ALL"  
"005-005-005:BLARX,0,0-UP,NEND,ALL"  
"005-005-005:BLORX,0,0-UP,NEND,ALL"  
"005-005-005:CCRRX,0,0-UP,NEND,ALL"  
"005-005-005:CFNRX,0,0-UP,NEND,ALL"  
"005-005-005:CGBRX,0,0-UP,NEND,ALL"  
"005-005-005:CGBARX,58,0-UP,NEND,ALL"  
"005-005-005:CGURX,0,0-UP,NEND,ALL"  
"005-005-005:CGUARX,62104,0-UP,NEND,ALL"  
"005-005-005:CONRX,0,0-UP,NEND,ALL"

```
"005-005-005:COTRX,0,0-UP,NEND,ALL"
"005-005-005:CPGRX,0,0-UP,NEND,ALL"
"005-005-005:CQMRX,0,0-UP,NEND,ALL"
"005-005-005:CQRRX,0,0-UP,NEND,ALL"
"005-005-005:CRGRX,0,0-UP,NEND,ALL"
"005-005-005:FAARX,0,0-UP,NEND,ALL"
"005-005-005:FACRX,0,0-UP,NEND,ALL"
"005-005-005:FARMSGRX,0,0-UP,NEND,ALL"
"005-005-005:FOTRX,0,0-UP,NEND,ALL"
"005-005-005:FRJRX,0,0-UP,NEND,ALL"
"005-005-005:GRARX,0,0-UP,NEND,ALL"
"005-005-005:GRSRX,0,0-UP,NEND,ALL"
"005-005-005:IAMRX,371262,0-UP,NEND,ALL"
"005-005-005:IDRRX,0,0-UP,NEND,ALL"
"005-005-005:INFRX,0,0-UP,NEND,ALL"
"005-005-005:INRRX,0,0-UP,NEND,ALL"
"005-005-005:IRSRX,0,0-UP,NEND,ALL"
"005-005-005:LOPRX,0,0-UP,NEND,ALL"
"005-005-005:LPARX,0,0-UP,NEND,ALL"
"005-005-005:NRMRX,0,0-UP,NEND,ALL"
"005-005-005:OLMRX,0,0-UP,NEND,ALL"
"005-005-005:PAMRX,0,0-UP,NEND,ALL"
"005-005-005:RELRX,0,0-UP,NEND,ALL"
"005-005-005:RESRX,0,0-UP,NEND,ALL"
"005-005-005:RLCRX,371262,0-UP,NEND,ALL"
"005-005-005:RSCRX,371262,0-UP,NEND,ALL"
"005-005-005:SAMRX,0,0-UP,NEND,ALL"
"005-005-005:SGMRX,0,0-UP,NEND,ALL"
"005-005-005:SUSRX,0,0-UP,NEND,ALL"
"005-005-005:UBARX,0,0-UP,NEND,ALL"
"005-005-005:UBLRX,0,0-UP,NEND,ALL"
"005-005-005:UCICRX,0,0-UP,NEND,ALL"
"005-005-005:UPARX,0,0-UP,NEND,ALL"
"005-005-005:UPTRX,0,0-UP,NEND,ALL"
"005-005-005:USRRX,0,0-UP,NEND,ALL"
"005-005-005:CRARX,0,0-UP,NEND,ALL"
"005-005-005:CRM RX,0,0-UP,NEND,ALL"
"005-005-005:CVRRX,0,0-UP,NEND,ALL"
"005-005-005:CVTRX,0,0-UP,NEND,ALL"
"005-005-005:EXMRX,0,0-UP,NEND,ALL"
"005-005-005:LASTINITRCV,2491,0-UP,NEND,ALL"
"005-005-005:UPDTHRSHLD,50,0-UP,NEND,ALL"
/* RTRV-PM-ISUPMSG */
;
```

16. Do you want to initialize registers for ISUP message statistics?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

17. Clear the counters for ISUP message statistics received from a destination point code using the INIT-REG-ISUPMSG command.

Command Syntax: INIT-REG-ISUPMSG:[TID]:<ss7Pc>:[CTAG]::  
<montype>,[<monval>],[<locn>],[<dirn>;

**Input Parameters:**

ss7Pc = {0 . . . 255}-{0 . . . 255}-{0 . . . 255} - Destination point code.  
montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
= UPDSTSTHRSHLD - Threshold value for the increase in the number of established calls that triggers an update to the statistics on the standby processor  
monnval = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".  
locn = **NEND** - Near end counters to be initialized.  
dirn = **ALL** - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Command Example: INIT-REG-ISUPMSG::1-1-1:::ALL;

18. Do you want to check ISUP message statistics again?

If **YES**, then go to [Step 13](#).

If **NO**, then go to [Step 11](#).

**NOTES:**

## DLP-537 - PROVISION T1 REGISTERS AND THRESHOLDS AND RETRIEVE PM DATA

**SUMMARY:** This procedure provides steps to retrieve performance monitoring data, set/retrieve performance monitoring thresholds and initialize registers.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize T1 registers?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 12](#).

2. Select your task from the following and go to the indicated step.

- Retrieve T1 PM data ..... [Step 4](#)
- Initialize T1 registers..... [Step 6](#)
- Set thresholds. .... [Step 8](#)
- Retrieve thresholds..... [Step 10](#)
- Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** PM data cannot be retrieved for DS-1s of DS-1 IOMs.

4. Retrieve current and historical performance data for T1 ports. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *View Performance*. Make changes if necessary and then click *Ok*. Refer to [Figure 1](#). After clicking *Ok*, you will see a screen similar to [Figure 2](#).

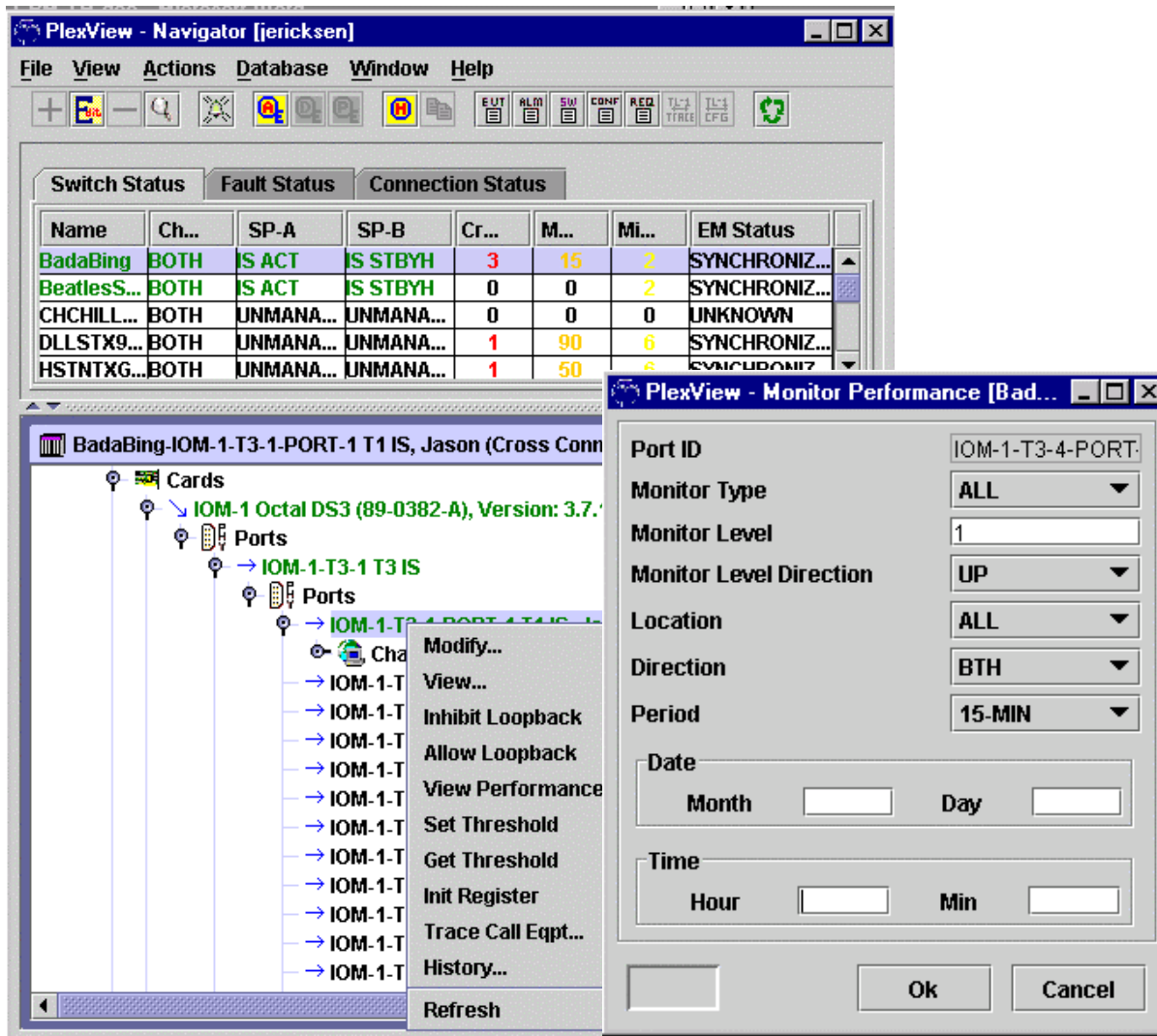


Figure 1. Monitor T1 Performance



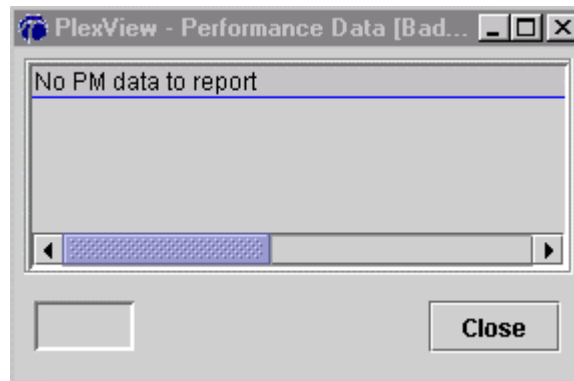


**Figure 2. Performance Data**

**Parameters and Descriptions:**

Monitor Type = Type of monitored parameter. Refer to [Table B](#) for T1 selections.

Monitor Level = - {0, 1 . . . 255} - Level of the requested monitored parameter.  
Monitor Level

Direction = {UP|DOWN}

Location = {ALL|NEND|FEND} – All|Near-end|Far-end counters to be retrieved.

Direction = Direction for which PM data is to be retrieved. Refer to [Table A](#) for selections.

Period = 24-HR - Interval of 24 hours.  
= 15-MIN - Interval of 15 minutes.

5. Do you want to retrieve PM data for another port or IOM?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).

6. Initialize one or more storage registers or event counters associated with specific T1 ports in the Plexus 9000. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Init Register*. Make required changes and then click *Ok* or *Apply*. See [Figure 3](#).

7. Do you want to initialize other registers?

If **YES**, then go to [Step 6](#)

If **NO**, then go to [Step 2](#).

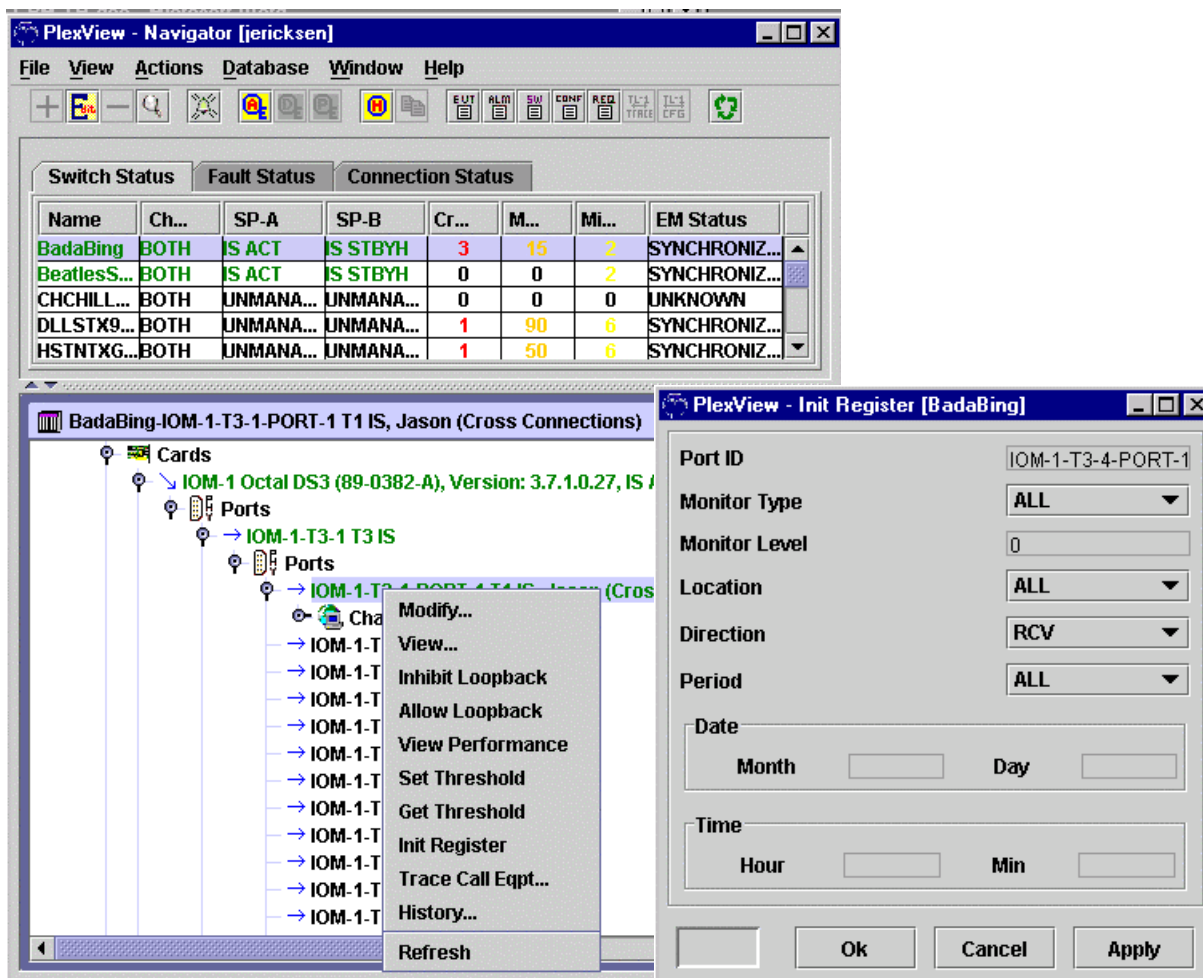


Figure 3. Modify T1 PM Thresholds

#### Parameters and Descriptions:

- Monitor Type     Type of monitored parameter. Refer to [Table B](#) for selections.
- Monitor Level = {0 . . . 9999} - Monitored value to which the register identified by montype is to be initialized.
- Location        = {ALLFEND|NEND} – ALL|Far-end|Near-end location of the storage registers for counters initialized. A null value defaults to both.
- Direction       = Direction in which the threshold is to be set. Refer to [Table A](#) for selections. Currently is only “BTH”).
- Period           = ALL - All time periods  
                      = 24-HR - Interval of 24 hours.  
                      = 15-MIN - Interval of 15 minutes.
- Date             This parameter is presently not supported.
- Month        = {1-12}
- Day           = {1-31}
- Time             This parameter is presently not supported.
- Hour          = {0-23}
- Min           = {0-59}

8. Set performance monitoring parameter threshold levels. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *Set Threshold*. Make required changes and then click *Ok*. Refer to [Figure 4](#).

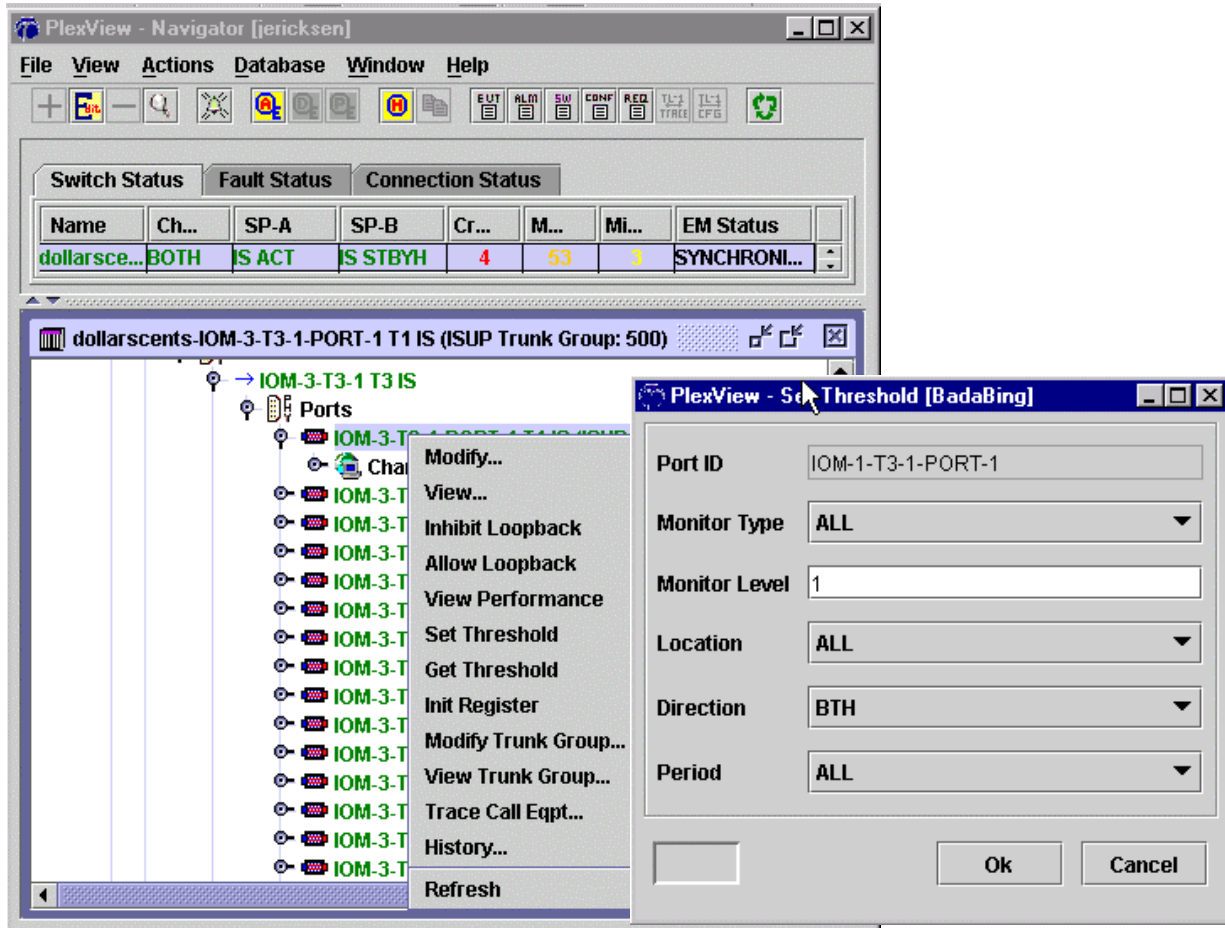


Figure 4. Modify T1 PM Thresholds

**Parameters and Descriptions:**

Monitor Type = Type of monitored parameter. Refer to [Table B](#) for T1 selections.

Monitor Level = Threshold level for the monitored parameter. Ranges are determined by *montype*. See following table.

| Parameter              | Threshold range |               |
|------------------------|-----------------|---------------|
|                        | 15 minute       | Day           |
| CV                     | 1 ... 16383     | 1 ... 1048575 |
| CSS, ES, SAS, SES, UAS | 1 ... 900       | 1 ... 65535   |
| ALL                    | 1 ... 900       | 1 ... 900     |

Location = {ALL|FEND|NEND} – All|Far-end|Near-end is location of the storage registers or event counters to be initialized.

- Direction = Direction in which the threshold is to be set. Refer to [Table A](#) for selections. Currently is only “BTH”).
- Time Period = ALL – All time periods  
= 24-HR - Interval of 24 hours.  
= 15-MIN - Interval of 15 minutes.

9. Do you want to set other performance monitoring threshold levels?
- If **YES**, then go to [Step 6](#).  
If **NO**, then go to [Step 2](#).
10. Retrieve the current threshold level of one or more monitored performance counts. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, desired port, and *Ports*. Right-click desired port, select *get Threshold*. Refer to [Figure 5](#).

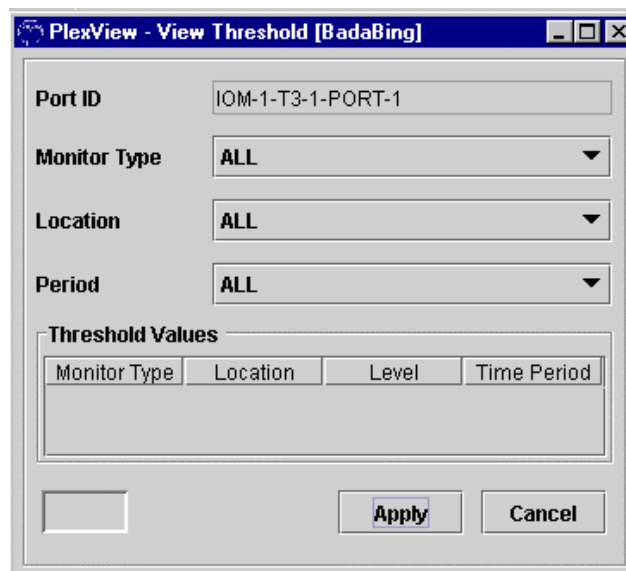


**Figure 5. Get PM Thresholds**

11. Do you want to retrieve other threshold levels?
- If **YES**, then go to [Step 10](#).  
If **NO**, then go to [Step 2](#).
12. Select your task from the following and go to the indicated step.
- Retrieve T1 PM data ..... [Step 14](#)
  - Set thresholds. .... [Step 16](#)
  - Retrieve thresholds..... [Step 18](#)
  - Initialize T1 registers..... [Step 20](#)
  - Finished, no other task in the above list..... continue to the next step.

13.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** Performance monitoring must be allowed. Reference DLP-561 to allow if necessary.

PM data cannot be retrieved for DS-1 IOMs.

14. Retrieve current and historical performance data for T1 ports using the RTRV-PM-T1 command.

Command Syntax: `RTRV-PM-T1:[TID]:<pm_id>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],[<dirn>  
],[<tmper>],[<mondatt>],[<montm>];`

**Input Parameters:**

|         |                                                                                                                                                |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------|
| pm_id   | = IOM-{1-17}-T3-{1-8} – IOM T3 port<br>= IOM-{1-17}-T3-{1-8}-PORT-{1-28} – IOM T3 port<br>= IOM-{1-17}-STS1-{1-8}-PORT-{1-28} – IOM STS-1 port |
| montype | Type of monitored parameter. Refer to <a href="#">Table B</a> for T1 selections.                                                               |
| monlev  | - {0, 1 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                     |
| locn    | = {NEND FEND} – Near-end Far-end counters to be retrieved. Null defaults to both.                                                              |
| dirn    | Direction for which PM data is to be retrieved. Refer to <a href="#">Table A</a> for selections.                                               |
| tmper   | = {24}-HR - Interval of one to 24 hours.<br>= {15}-MIN - Interval of one to 1440 minutes.                                                      |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank.                                |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.                                |

Command Example: `rtrv-pm-t1::IOM-2-T3-1-PORT-1;`

**Output Format:**

```

 SID DATE TIME
M CTAG COMPLD
 "<aid>:MONTYPE=<montype>,MONVAL=<monval>,
[VLDTY=<vldty>],[LOCN=<locn>],[DIRN=<dirn>],
[TPMER=<tmper>],[MONDAT=<mondatt>],[MONTM=<montm>]"
;
```

### Output Parameters:

Refer to Input Parameters for all except the following.

monval = {1 . . . 9999} - Monitored value.  
vldty = ADJ - Data manually adjusted or initialized  
= COMPL - Data accumulated over the entire time period  
= LONG - Data accumulated over greater than the entire time period  
= NA - Data not available  
= PRTL - Data accumulated over a portion of the time period

### Output Example:

```
alpha2telica 2002-11-08 08:33:36
M 0 COMPLD
 "IOM-2-T3-1-PORT-1:MONTYPE=SAS-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=15-MIN,
MONDAT=11-07, MONTM=23-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=AISS-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=15-
MIN, MONDAT=11-07, MONTM=23-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=ES-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=15-
MIN, MONDAT=11-07, MONTM=23-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=SES-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=15-
MIN, MONDAT=11-07, MONTM=23-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=SAS-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=24-
HR, MONDAT=11-07, MONTM=00-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=AISS-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=24-
HR, MONDAT=11-07, MONTM=00-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=ES-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=24-
HR, MONDAT=11-07, MONTM=00-00"
 "IOM-2-T3-1-PORT-1:MONTYPE=SES-
P, MONVAL=1, VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=24-
HR, MONDAT=11-07, MONTM=00-00"
/* RTRV-PM-T1 */
;
```

15. Do you want to retrieve PM data for another port or IOM?

If **YES**, then go to [Step 14](#).

If **NO**, then go to [Step 12](#).

16. Set performance monitoring parameter threshold levels using the SET - TH - T1 command for T1.

Command Syntax: SET - TH -  
T1: [TID]:<pm\_id>:[CTAG]::<montype>,  
<thlev>,[<locn>],[<dirn>],[<tmper>;

**Input Parameters:**

pm\_id = IOM-{1-17} - IOM  
= IOM-{1-17}-PORT-{1-28} – IOM T1 port  
= IOM-{1-17}-T3-{1-8}-PORT-{1-28} – IOM T3 port  
= IOM-{1-17}-STS1-{1-8}-PORT-{1-28} – IOM STS-1 port  
montype Type of monitored parameter. Refer to [Table B](#) for T1 selections.  
thlev Threshold level for the monitored parameter. Ranges are determined by *montype*. See following table.

| Parameter              | Threshold range |                 |
|------------------------|-----------------|-----------------|
|                        | 15 minute       | Day             |
| CV                     | 1 . . . 16383   | 1 . . . 1048575 |
| CSS, ES, SAS, SES, UAS | 1 . . . 900     | 1 . . . 65535   |
| ALL                    | 1 . . . 900     | 1 . . . 900     |

locn = {FEND|NEND} – Far-end|Near-end is location of the storage registers or event counters to be initialized.  
A null value defaults to all applicable locations.  
dirn Direction in which the threshold is to be set. Refer to [Table A](#) for selections. Currently is only “BTH”).  
tmper = 1-DAY - Time interval is exactly one day for accumulation of performance counters.  
= {1 . . . 24}-HR - Interval of one to 24 hours.  
= {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.

Command Example: SET - TH - T1: : IOM-1-PORT-  
1: : : ALL, 1000, NEND, 15-MIN;

17. Do you want to set other performance monitoring threshold levels?

If **YES**, then go to [Step 16](#).

If **NO**, then go to [Step 12](#).

18. Retrieve the current threshold level of one or more monitored performance counts using the RTRV - TH - T1 command for T1 or the RTRV - TH - T3 command.

Command Syntax: RTRV - TH - T1: [TID]:<pm\_id>:[CTAG]::  
[<montype>],[<locn>],[<tmper>;

**Input Parameters:**

pm\_id = IOM-{1-17}-T3-{1-8} – IOM T3 port  
 = IOM-{1-17}-T3-{1-8}-PORT-{1-28} – IOM T3 port  
 = IOM-{1-17}-STS1-{1-8}-PORT-{1-28} – IOM STS-1 port  
 montype Type of monitored parameter. Refer to [Table B](#) for T1 selections.  
 locn = {FEND|NEND} – Far-end|Near-end location of the storage registers for counters initialized.  
 tmper = 1-DAY - Time interval is exactly one day for accumulation of performance counters.  
 = {1 . . . 24}-HR - Interval of one to 24 hours.  
 = {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.

Command Example: RTRV-TH-T1::IOM-1-PORT-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<pm_id>,<entitytype>:<montype>,<locn>,<thlev>,<tmper>"
;
```

**Output Parameters:** See Input Parameters. “entitytype” is not used.

**T1 Output Example:**

```
telica 2001-05-25 14:37:49
M 0 COMPLD
 "IOM-1-PORT-1, :ALL, NEND, 100, 15-MIN"
;
```

19. Do you want to retrieve other threshold levels?

If **YES**, then go to [Step 18](#).

If **NO**, then go to [Step 12](#).

20. Initialize one or more storage registers or event counters associated with specific T1 ports in the Plexus 9000 using the INIT-REG-T1 command. In most cases, registers contain performance data.

Command Syntax: INIT-REG-T1:[TID]:<entity\_id>:[CTAG]:<montype>,<monval>,<locn>,<dirn>,<tmper>,<mondatt>,<montm>;

**Input Parameters:**

entity\_id = IOM-{1-17}-T3-{1-8} – IOM T3 port  
 = IOM-{1-17}-T3-{1-8}-PORT-{1-28} – IOM T3 port  
 = IOM-{1-17}-STS1-{1-8}-PORT-{1-28} – IOM STS-1 port



|         |                                                                                                                                                                                                              |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| montype | Type of monitored parameter. Refer to <a href="#">Table B</a> for T1 selections.                                                                                                                             |
| monval  | = {0 . . . 9999} - Monitored value to which the register identified by montype is to be initialized.                                                                                                         |
| locn    | = {FEND NEND} – Far-end Near-end location of the storage registers for counters initialized. A null value defaults to both.                                                                                  |
| dirn    | Direction in which the threshold is to be set. Refer to <a href="#">Table A</a> for selections. Currently is only “BTH”).                                                                                    |
| tmper   | = 1-DAY - Time interval is exactly one day for accumulation of performance counters.<br>= {1 . . . 24}-HR - Interval of one to 24 hours.<br>= {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes. |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank.                                                                                              |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.                                                                                              |

Command Example: INIT-REG-T3::IOM-1-T3-1:::ALL;

21. Do you want to initialize other registers?

If **YES**, then go to [Step 20](#)

If **NO**, then go to [Step 12](#).

**Table A. DIRECTION**

| Direction                                           | Description                           |
|-----------------------------------------------------|---------------------------------------|
| AZ                                                  | Transmit                              |
| BTH                                                 | Both directions                       |
| NA                                                  | Not applicable                        |
| RCV                                                 | Receive direction only                |
| TDTC                                                | Transmit direction toward customer    |
| TDTN                                                | Transmit direction toward network     |
| TRMT                                                | Transmit direction only               |
| ZA                                                  | Receive                               |
| null                                                | Defaults to all applicable directions |
| <b>Note:</b> Currently, RCV is the only valid value |                                       |

**Table B. T1 MONITORED TYPES**

| <b>Type</b> | <b>Description</b>                                                |
|-------------|-------------------------------------------------------------------|
| ALL         | All types. Default.                                               |
| AISS-P      | Alarm Indication Signal Seconds Count – Path                      |
| CSS-P       | Controlled Slip Second – Path                                     |
| CSS-PFE     | Controlled Slip Second – Path, Far End                            |
| CV-L        | Coding Violation – Line                                           |
| CV-P        | Coding Violation – Path                                           |
| CV-PFE      | Coding Violation – Path, Far End                                  |
| ES-L        | Errored Second – Line                                             |
| ES-LFE      | Errored Second – Line, Far End                                    |
| ES-P        | Errored Second – Path,                                            |
| ES-PFE      | Errored Second – Path, Far End                                    |
| ESA-P       | Errored Second, type A – Path                                     |
| ESA-PFE     | Errored Second, type A – Path, Far End                            |
| ESB-P       | Errored Second, type B – Path                                     |
| ESB-PFE     | Errored Second, type B – Path, Far End                            |
| FC          | Failure Count                                                     |
| FC-FE       | Failure Count, Far End                                            |
| LOSS-L      | Loss of Signal Seconds – Line                                     |
| SAS-P       | Severely errored frame / Alarm indication signal<br>Second – Path |
| SEFS-PFE    | Severely Errored Frame Second – Path, Far End                     |
| SES-L       | Severe Errored Second – Line                                      |
| SES-P       | Severe Errored Second – Path                                      |
| SES-PFE     | Severe Errored Second – Path, Far End                             |
| UAS-P       | Unavailable Second – Path                                         |
| UAS-PFE     | Unavailable Second – Path, Far End                                |
| null        | A null value is equivalent to "ALL".                              |

## DLP-538 - PROVISION T3 REGISTERS AND THRESHOLDS AND RETRIEVE PM DATA

**SUMMARY:** This procedure provides steps to retrieve performance monitored data, set/retrieve performance monitoring thresholds and initialize registers.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - Initial values of registers and counters
  - Desired threshold levels
2. Are you going to be using EMS or TL1 to check PM data and/or initialize T3 registers?  
If using **EMS**, then continue to the next step.  
If using **TL1**, then go to [Step 16](#).
3. Select your task from the following and go to the indicated step.
  - Retrieve PM data for T3 ports..... [Step 5](#)
  - Initialize T3 registers..... [Step 7](#)
  - Set thresholds. .... [Step 7](#)
  - Retrieve thresholds..... [Step 14](#)
  - Finished, no other task in the above list..... continue to the next step.
4.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** Performance monitoring must be allowed. Reference DLP-561 to allow if necessary.

5. Retrieve current and historical performance data for T3. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*, and desired port. Right-click desired port, select *View Performance*. Make changes if necessary and then click *Ok*. Refer to [Figure 1](#). After clicking *Ok*, you will see a screen similar to [Figure 2](#).

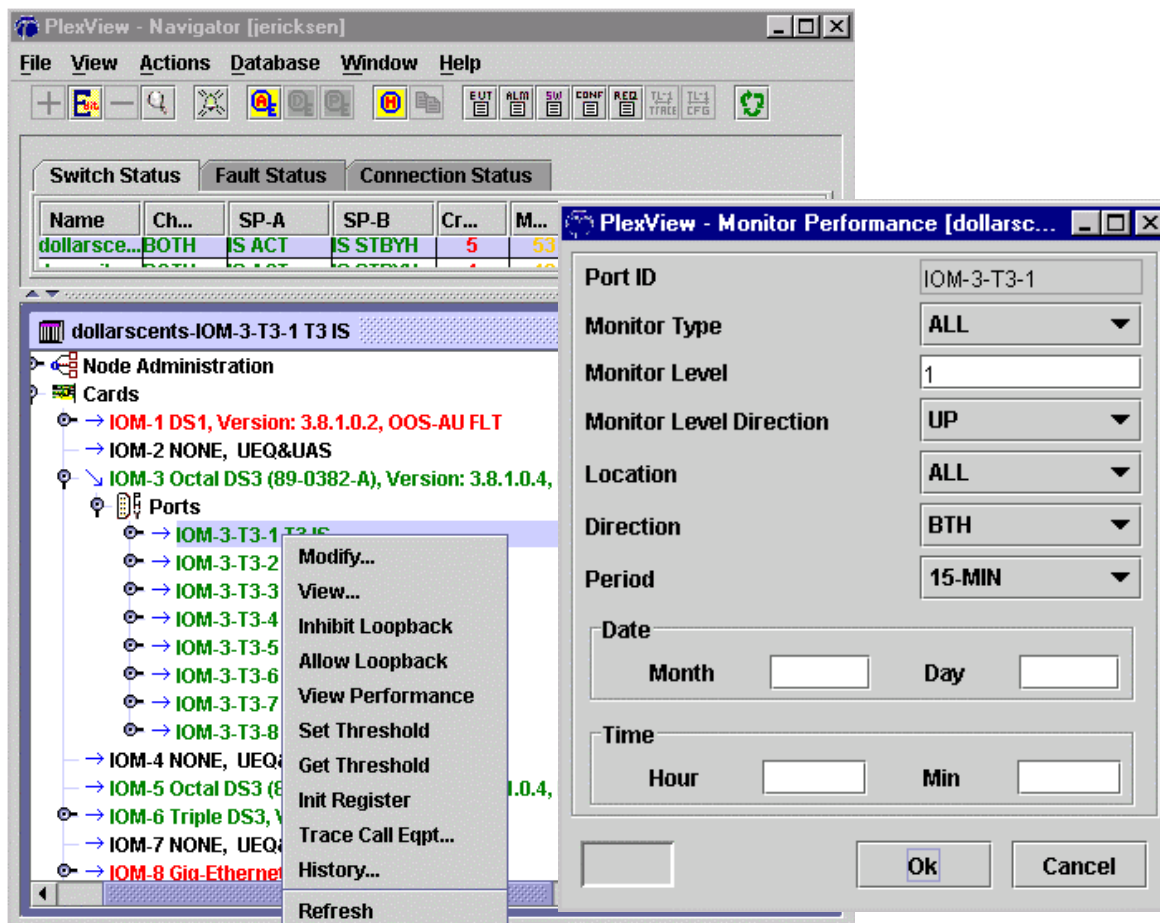


**Figure 1. Monitor T3 Performance**

**Parameters and Descriptions:**

Monitor Type = Type of monitored parameter. Refer to [Table B](#) for T1 selections.

Monitor Level = - {0, 1 . . . 255} - Level of the requested monitored parameter.

Direction = {UP|DOWN}

Location = {ALL|NEND|FEND} – All|Near-end|Far-end counters to be retrieved.

Direction = Direction for which PM data is to be retrieved. Refer to [Table A](#) for selections.

Period = {15-Min|24-HR} - Interval of 15 minutes or 24 hours.

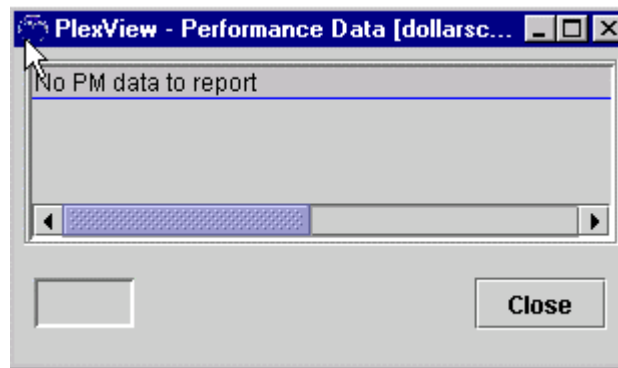


Figure 2. Performance Data

6. Do you want to retrieve PM data for another port or IOM?  
 If **YES**, then go to [Step 5](#).  
 If **NO**, then go to [Step 3](#).
7. Initialize one or more storage registers or event counters associated with specific T3 ports in the Plexus 9000. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, *Ports*.. Right-click desired port, select *Init Register*. Make changes if necessary and then click *Ok* or *Apply*. Refer to [Figure 3](#).

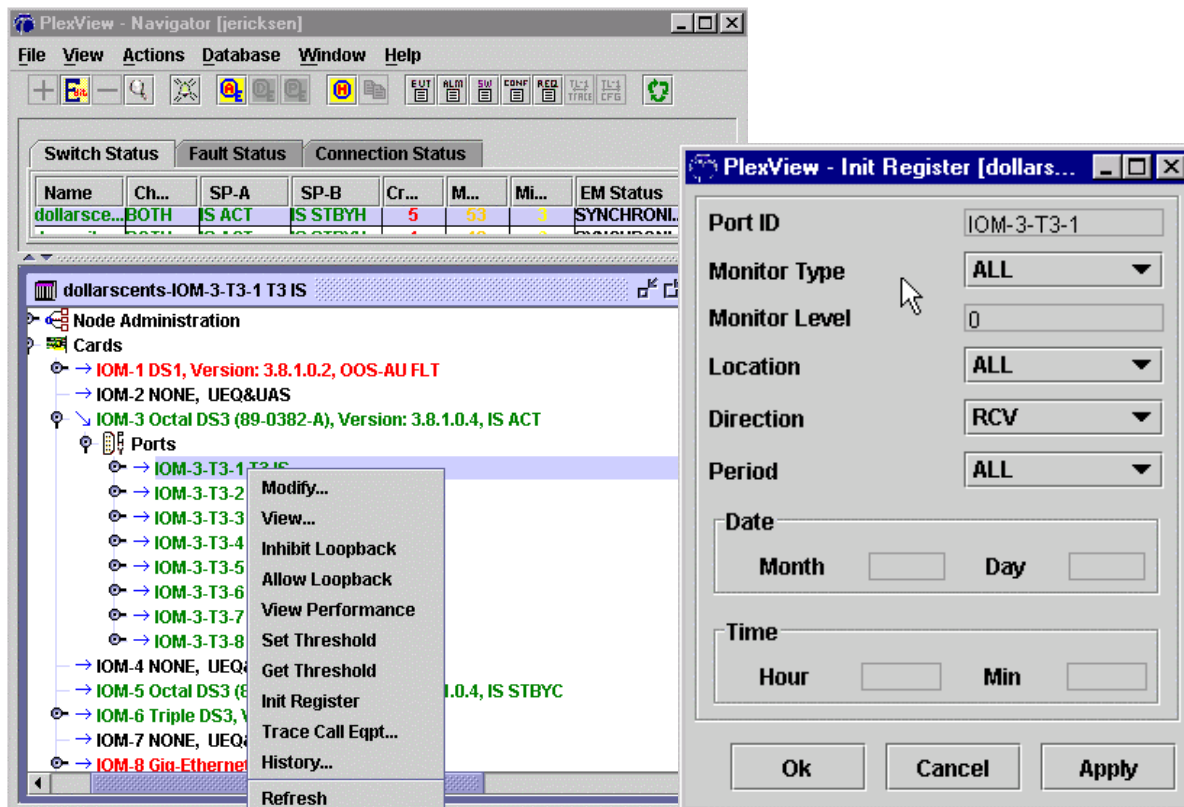


Figure 3. Modify T3 Registers

8. Initialize one or more storage registers or event counters associated with specific T1 ports in the Plexus 9000. Double-click *Switch*, *Switch name*, *Cards*, desired IOM, *Ports*, desired port, and *Ports*. Right-click desired port, select *Init Register*. Make required changes and then click *Ok* or *Apply*. See [Figure 4](#).

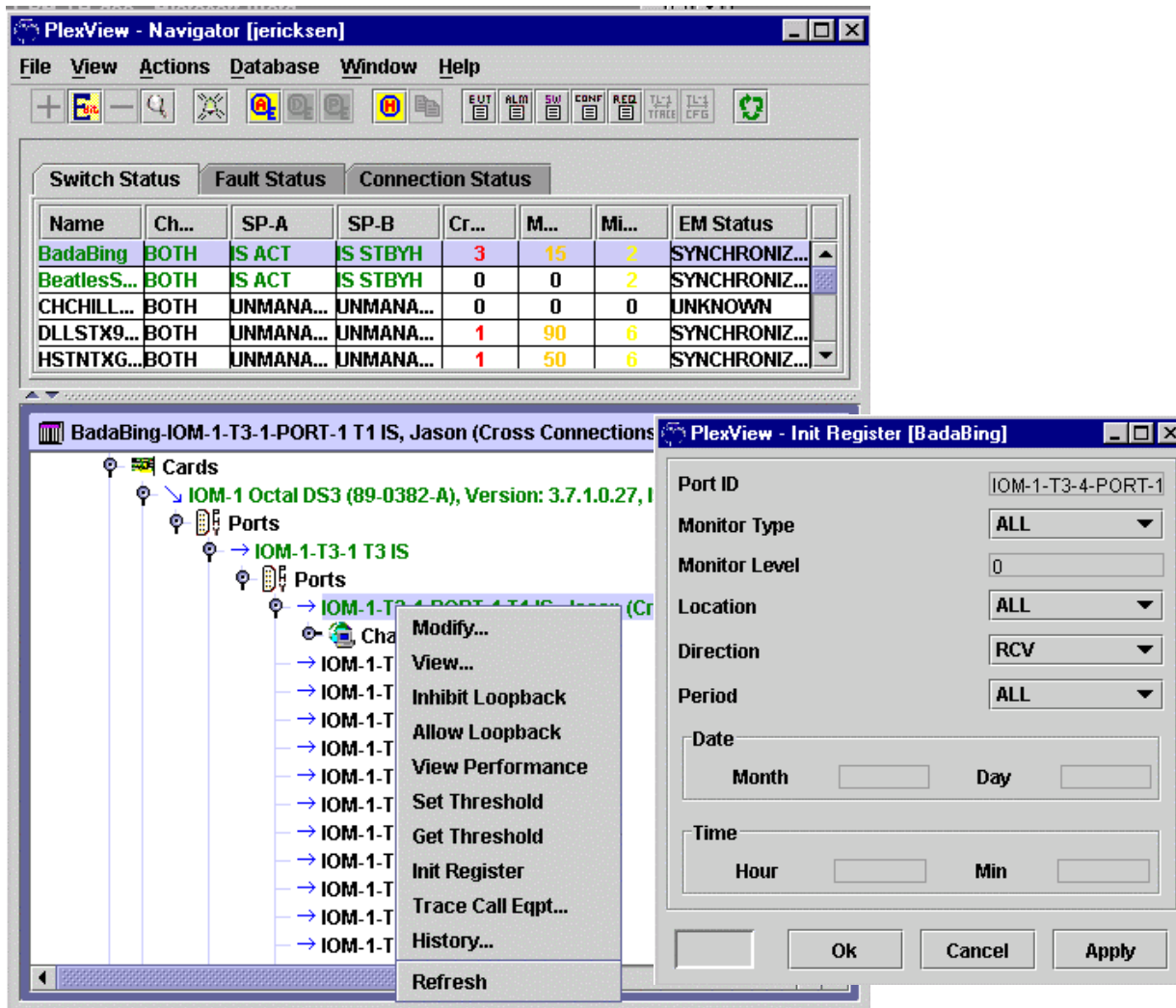


Figure 4. Modify T3 PM Thresholds

**Parameters and Descriptions:**

- Monitor Type     Type of monitored parameter. Refer to [Table B](#) for selections.
- Monitor Level = {0 . . . 9999} - Monitored value to which the register identified by mtype is to be initialized.
- Location         = {ALLFEND|NEND} – ALL|Far-end|Near-end location of the storage registers for counters initialized. A null value defaults to both.
- Direction        = Direction in which the threshold is to be set. Refer to [Table A](#) for selections. Currently is only “BTH”).
- Period            = {ALL|15-MIN|24-HR} - Ttime periods

Date This parameter is presently not supported.  
 Month = {1-12}  
 Day = {1-31}  
 Time This parameter is presently not supported.  
 Hour = {0-23}  
 Min = {0-59}

Command Example: INIT-REG-T3::IOM-1-T3-1:::ALL;

9. Do you want to initialize other registers?

If YES, then go to [Step 7](#)

If NO, then go to [Step 3](#).

10. Do you want to initialize other registers

If YES, then go to [Step 7](#).

If NO, then go to [Step 3](#).

11. Set performance monitoring parameter threshold.

12. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, and *Ports*.. Right-click desired port, select *Set Threshold*. Make changes if necessary and then click *Ok*. Reference **DLP-538** for detailed information for the command.

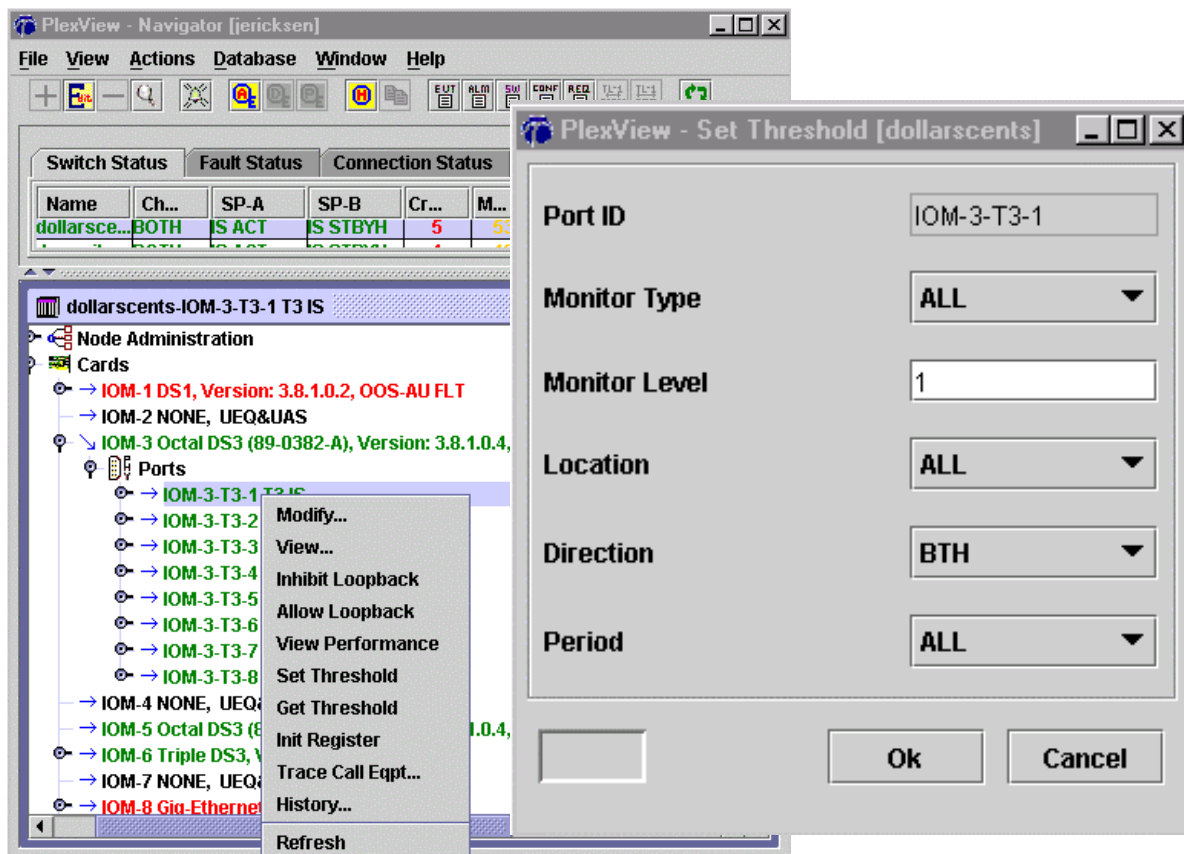


Figure 5. Set T3 PM Thresholds

**Parameters and Descriptions:**

Monitor Type = Type of monitored parameter. Refer to [Table B](#) for T3 selections.

Monitor Level = Threshold level for the monitored parameter. Ranges are determined by *montype*. See following table.

| Parameter              | Threshold range |               |
|------------------------|-----------------|---------------|
|                        | 15 minute       | Day           |
| CV                     | 1 ... 16383     | 1 ... 1048575 |
| CSS, ES, SAS, SES, UAS | 1 ... 900       | 1 ... 65535   |
| ALL                    | 1 ... 900       | 1 ... 900     |

Location = {ALL|FEND|NEND} – All|Far-end|Near-end is location of the storage registers or event counters to be initialized.

Direction = Direction in which the threshold is to be set. Refer to [Table A](#) for selections. Currently is only “BTH”).

Time Period = ALL – All time periods  
= 24-HR - Interval of 24 hours.  
= 15-MIN - Interval of 15 minutes.

13. Do you want to set other performance monitoring parameter threshold levels?

If **YES**, then go to [Step 7](#).

If **NO**, then go to [Step 3](#).

14. Retrieve the current threshold level of one or more monitored performance. Double-click *Switch*, *Switch name*, *Cards*, desired *IOM*, and *Ports*.. Right-click desired port, select *Get Threshold*. Make changes if necessary and then click *Ok*. Refer to [Figure 6](#).

15. Do you want to retrieve other threshold levels?

If **YES**, then go to [Step 14](#).

If **NO**, then go to [Step 3](#).



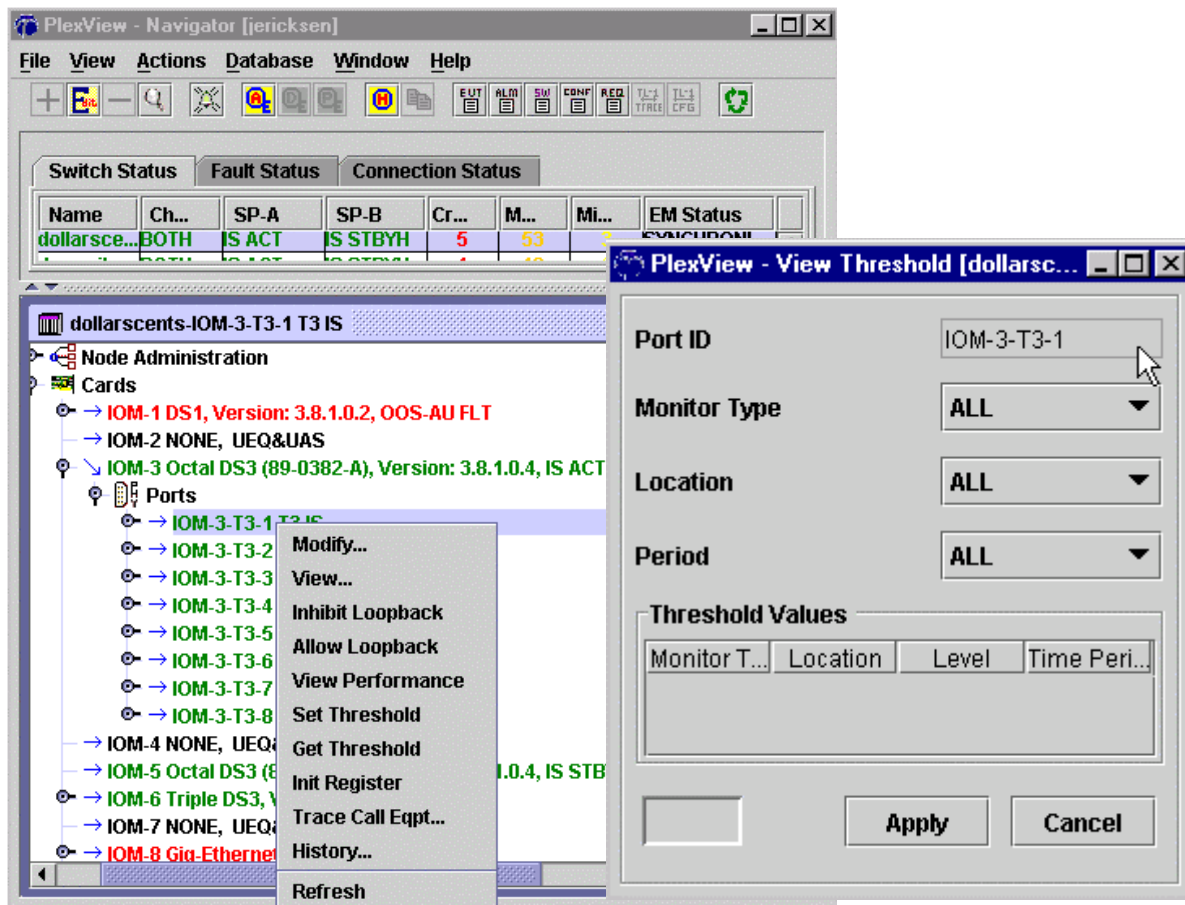


Figure 6. Get T3 PM Thresholds

16. Select your task from the following and go to the indicated step.

- Retrieve PM data for T3 ports..... [Step 18](#)
- Set thresholds. .... [Step 20](#)
- Retrieve thresholds..... [Step 22](#)
- Initialize T3 registers..... [Step 24](#)
- Finished, no other task in the above list..... continue to the next step.

17.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** Performance monitoring must be allowed. Reference DLP-561 to allow if necessary.

18. Retrieve current and historical performance data for T3 ports using the RTRV-PM-T3 command.

Command Syntax: RTRV-PM-T3:[TID]:<pm\_id>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>],[<tmper>],[<mondatt>],  
[<montm>];

**Input parameters:**

|         |                                                                                                                 |
|---------|-----------------------------------------------------------------------------------------------------------------|
| pm_id   | = IOM-{1-17} - IOM                                                                                              |
|         | = IOM-{1-17}-T3-{1-8}- IOM T3 port                                                                              |
| montype | Type of monitored parameter. . Refer to <a href="#">Table B</a> for T3 selections.                              |
| monlev  | - {0, 1 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                      |
| locn    | = {NEND FEND} – Near-end Far-end counters to be retrieved. Null defaults to both.                               |
| dirn    | Direction for which PM data is to be retrieved. Refer to <a href="#">Table A</a> for selections.                |
| tmper   | = {24}-HR - Interval of one to 24 hours.<br>= {15}-MIN - Interval of one to 1440 minutes.                       |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank. |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank. |

Command Example: RTRV-PM-T3::IOM-1-T3-1;

**Output Format:**

```

 SID DATE TIME
M CTAG COMPLD
 "<aid>:MONTYPE=<montype>,MONVAL=<monval>,
[VLDTY=<vldty>],[LOCN=<locn>],[DIRN=<dirn>],
[TPER=<tmper>],[MONDAT=<mondatt>],[MONTM=<montm>]"
;
```

### Output Parameters:

Refer to Input Parameters for all except the following.

monval = {1 . . . 9999} - Monitored value.  
vldty = ADJ - Data manually adjusted or initialized  
= COMPL - Data accumulated over the entire time period  
= LONG - Data accumulated over greater than the entire time period  
= NA - Data not available  
= PRTL - Data accumulated over a portion of the time period

### Output Example:

```
telica 2002-11-07 09:34:24
M 0 RTRV
 "IOM-1-T3-1:MONTYPE=ESL, MONVAL=259, VLDTY=PRTL,
 LOCN=NEND, DIRN=BTH, TMPER=15-MIN, MONDAT=11-07,
 MONTM=09-34"
.
.
.
 "IOM-1-T3-1:MONTYPE=UASP-P, MONVAL=33535,
 VLDTY=PRTL, LOCN=NEND, DIRN=BTH, TMPER=24-HR, MONDAT=11-
 06, MONTM=00-00"
/* RTRV-PM-T3 */
```

19. Do you want to retrieve PM data for another port or IOM?

If **YES**, then go to [Step 18](#).

If **NO**, then go to [Step 16](#).

20. Set performance monitoring parameter threshold levels using the SET-TH-T3 command for T3.

Command Syntax: SET-TH-T3:[TID]:<pm\_id>:[CTAG]::  
<montype>,<thlev>,[<locn>],[<dirn>],  
[<tmper>;

### Input parameters:

pm\_id = IOM-{1-17} - IOM  
= IOM-{1-17}-T3-{1-8} – IOM T3 port  
montype Type of monitored parameter. Refer to [Table B](#) for T3 selections.  
thlev Threshold level for the monitored parameter. Ranges are determined by *montype*. See following table.

| Parameter              | Threshold range |               |
|------------------------|-----------------|---------------|
|                        | 15 minute       | Day           |
| CV                     | 1 ... 16383     | 1 ... 1048575 |
| CSS, ES, SAS, SES, UAS | 1 ... 900       | 1 ... 65535   |
| ALL                    | 1 ... 900       | 1 ... 900     |

- locn = {FEND|NEND} – Far-end|Near-end is location of the storage registers or event counters to be initialized.  
A null value defaults to all applicable locations.
- dirn Direction in which the threshold is to be set. Refer to [Table A](#) for selections. Currently is only “BTH”).
- tmper = 1-DAY - Time interval is exactly one day for accumulation of performance counters.  
= {1 ... 24}-HR - Interval of one to 24 hours.  
= {1 ... 15 ... 1440}-MIN - Interval of one to 1440 minutes.

Command Example: SET-TH-T3::IOM-1-T3-1::ALL,800,NEND,  
15-MIN;

21. Do you want to set other performance monitoring parameter threshold levels?

If YES, then go to [Step 20](#).

If NO, then go to [Step 16](#).

22. Retrieve the current threshold level of one or more monitored performance counts using the RTRV-TH-T3 command.

Command Syntax: RTRV-TH-T3:[TID]:<pm\_id>:[CTAG]::  
[<montype>],[<locn>],[<tmper>;

**Input Parameters:**

- pm\_id = IOM-{1-17} - IOM  
= IOM-{1-17}-T3-{1-8} – IOM T3 port
- montype Type of monitored parameter. Refer to [Table B](#) for T3 selections.
- locn = {FEND|NEND} – Far-end|Near-end location of the storage registers for counters initialized.
- tmper = 1-DAY - Time interval is exactly one day for accumulation of performance counters.  
= {1 ... 24}-HR - Interval of one to 24 hours.  
= {1 ... 15 ... 1440}-MIN - Interval of one to 1440 minutes.

Command Example: RTRV-TH-T3::IOM-1-PORT-1::ALL,NEND,15-MIN;

**Output Format:**

```

 SID DATE TIME
M CTAG COMPLD
 "<pm_id>,[<entitytype>]:<montype>,[<locn>],<thlev>,"
 [<tmper>]"
;

```

**Output Parameters:** See Input parameters. “entitytype” is not used.

**T3 Output Example:**

```

 telica 2002-11-07 09:52:11
M 0 COMPLD
 "IOM-1-T3-1, :AISS-P, NEND, 0, 15-MIN"
 "IOM-1-T3-1, :AISS-P, NEND, 0, 24-HR"
. . .
 "IOM-1-T3-1, :UASP-P, NEND, 0, 15-MIN"
 "IOM-1-T3-1, :UASP-P, NEND, 0, 24-HR"
;

```

23. Do you want to retrieve other threshold levels?

If **YES**, then go to [Step 22](#).

If **NO**, then go to [Step 16](#).

24. Initialize one or more storage registers or event counters associated with specific T3 ports in the Plexus 9000 using the INIT-REG-T3 command. In most cases, registers contain performance data.

Command Syntax:   INIT-REG-T3:[TID]:<entity\_id>:[CTAG]::  
                                  <montype>,[<monval>],[<locn>],[<dirn>],  
                                  [<tmper>],[<mondatt>],[<montm>];

**Input Parameters:**

|           |                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------|
| entity_id | = IOM-{1-17} - IOM                                                                                                          |
|           | = IOM-{1-17}-T3-{1-8} – IOM T3 port                                                                                         |
| montype   | Type of monitored parameter. Refer to <a href="#">Table B</a> for T3 selections.                                            |
| monval    | = {0 . . . 9999} - Monitored value to which the register identified by montype is to be initialized.                        |
| locn      | = {FEND NEND} – Far-end Near-end location of the storage registers for counters initialized. A null value defaults to both. |
| dirn      | Direction in which the threshold is to be set. Refer to <a href="#">Table A</a> for selections. Currently is only “BTH”).   |

tmper = 1-DAY - Time interval is exactly one day for accumulation of performance counters.  
= {1 . . . 24}-HR - Interval of one to 24 hours.  
= {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.  
mondat = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank.  
montm = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.

Command Example: INIT-REG-T3::IOM-1-T3-1:::ALL;

25. Do you want to initialize other registers

If YES, then go to [Step 24](#).

If NO, then go to [Step 16](#).

**Table A. DIRECTION**

| Direction                                           | Description                           |
|-----------------------------------------------------|---------------------------------------|
| AZ                                                  | Transmit                              |
| <b>BTH</b>                                          | Both directions                       |
| NA                                                  | Not applicable                        |
| RCV                                                 | Receive direction only                |
| TDTC                                                | Transmit direction toward customer    |
| TDTN                                                | Transmit direction toward network     |
| TRMT                                                | Transmit direction only               |
| ZA                                                  | Receive                               |
| null                                                | Defaults to all applicable directions |
| <b>Note:</b> Currently, BTH is the only valid value |                                       |

**Table B. T3 MONITORED TYPES**

| <b>Type</b> | <b>Description</b>                                              |
|-------------|-----------------------------------------------------------------|
| ALL         | All types. Default                                              |
| AISS-P      | Alarm Indication Signal Seconds Count – Path                    |
| CVCP-P      | Coding Violation count – Path, DS3 CP-bit parity                |
| CVCP-PFE    | Coding Violation count – Path, Far End, DS3 CP-bit parity       |
| CVL         | Coding Violation count – Line                                   |
| CVP-P       | Coding Violation count – Path, P-bit parity                     |
| ESA-L       | Errored Second count, type A – Line                             |
| ESACP-P     | Errored Second count, type A – Path, DS3 CP-bit parity          |
| ESACP-PFE   | Errored Second count, type A – Path, DS3 CP-bit parity, Far End |
| ESAP-P      | Errored Second count, type A – Path, DS3 P-bit parity           |
| ESB-L       | Errored Second count, type B – Line                             |
| ESBCP-P     | Errored Second count, type B – Path, DS3 CP-bit parity          |
| ESBCP-PFE   | Errored Second count, type B – Path, DS3 CP-bit parity, Far End |
| ESBP-P      | Errored Second count, type B – Path, DS3 P-bit parity           |
| ESCP-P      | Errored Second count – Path, DS3 CP-bit parity                  |
| ESCP-PFE    | Errored Second count – Path, DS3 CP-bit parity, Far End         |
| ESL         | Errored Second count – Line                                     |
| ESP-P       | Errored Second count – Path, P-bit parity                       |
| FCCP-PFE    | Failure Count – Path, DS3 CP-bit parity, Far End                |
| FCP         | Failure Count – Path, Near End                                  |
| LOSS-L      | Loss of Signal Seconds Line count                               |
| SAS-P       | SEF/AIS Second count                                            |
| SASCP-P     | SEF/AIS Second count, CP-bit parity                             |
| SASCP-PFE   | Far End SEF/AIS Second count, CP-bit parity                     |
| SES-P       | Severe Errored Second count, P-bit parity                       |
| SESCP-P     | Severe Errored Second count – Path, DS3 CP-bit parity           |
| SESCP-PFE   | Severe Errored Second count – Path, DS3 CP-bit parity, Far End  |
| SESL        | Severe Errored Second count – Line                              |
| UASCP-P     | Unavailable Second count – Path, DS3 CP-bit parity              |
| UASCP-PFE   | Unavailable Second count – Path, DS3 CP-bit parity, Far End     |
| UASP-P      | Unavailable Second count – Path, P-bit parity                   |

**NOTES:**



## DLP-544 - PROVISION OR CHECK IP ADDRESSES

**SUMMARY:** This procedure provides the steps to provision or check the IP addresses of the Plexus 9000 using the serial DB-9 craft port interface. It also provides steps to change IP addresses of an already provisioned system. There are no default addresses. IP addresses should be obtained from the system administrator.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** IP addresses for element manager (EM), craft and signaling interfaces must be on different networks.

1. Obtain the Ethernet IP addresses assigned for the Plexus 9000.
2. Are you changing or retrieving the IP addresses of a previously provisioned Plexus or initializing a system?

If **YES**, then Telnet to the Plexus and go to [Step 5](#).

If **NO**, then continue to the next step.

3. Have you connected to the DB-9 connector and logged into the Plexus 9000?

If **YES**, then go to [Step 6](#).

If **NO**, then continue to the next step.

4. Connect craft terminal to Plexus 9000 to the craft port on the front of the System Processor card.

Reference: DLP-516

5. Log on to the system using the ACT-USER command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]:: <pid>;

**parameters:**

uid = **telica** {8-16 Alphanumeric characters} user identifier  
pid = **telica** {8-16 Alphanumeric characters} user's password  
(private identifier).

Command Example: ACT-USER::telica::telica;



**Note:** After changing IP addresses, the Plexus 9000 must be reset or the INIT-SYS command must be executed for the changes to go into effect.

6. Select your task from the following and go to the indicated step.
  - Provision IP addresses initially Step 8
  - Change IP addresses Step 12
  - Check or retrieve IP addresses Step 19
  - Reset or initialize the Plexus 9000 Step 21
  - Finished, no other task in the above list continue to the next step.

7.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** IP addresses for element manager (EM), craft and signaling interfaces must be on different networks.

The following steps provision properties and IP addresses of a Plexus that has not previously been provisioned.

8. Edit the properties and IP addresses of the equipment using the ED-CHASSIS-EQPT command, entering the CLLI code, location, and IP addresses.

Command Syntax: ED-CHASSIS-EQPT:[TID]:[<com>]:[CTAG]::  
[SHELFID=<shelfId>],[CHASSISTYPE=  
<chassisType>],[CLLI=<clli>],[LOC=<loc>],  
[EMIPSPA=<emIPSPA>],[CRAFTIPSPA=<craftIPSPA>],  
[SIGNALINGIPSPA=<signalingIPSPA>],  
[EMIPSPB=<emIPSPB>],[CRAFTIPSPB=<craftIPSPB>],  
[SIGNALINGIPSPB=<signalingIPSPB>],  
[EMIPMASK=<emIPMask>],[CRAFTIPMASK=<craftIPMask>]  
, [SIGNALINGIPMASK=<signalingIPMask>],  
[SIGNALINGIPCHASSIS=<signalingIPChassis>],  
[DNSIP1=<dnsIP1>],[DNSIP2=<dnsIP2>],  
[NTPSERVIP1=<ntp servIP1>],[NTPSERVIP2=<ntp servIP2>], [DNSNAME=<dnsName>];

**parameters:**

com = **com** AID for a Plexus 9000  
shelfid = {1 . . . 255} – Number for shelf identification.  
chassisType = MG - Plexus will function as a Media gateway.  
= MGC – Plexus will function as a Media Gateway Controller  
= MGM – Plexus will function as a Media Gateway with  
MEGACO  
= SG - Plexus will function as a Signaling gateway.  
= BOTH - Plexus will function as a both media and signaling  
gateway.

clli = {up to 20 alphanumeric characters} - CLLI code for the Plexus 9000.

loc = {alphanumeric string} - Location of the Plexus 9000.

emIPSPA = {0-255}.{0-255}.{0-255}.{0-255} - IP address of the OS Ethernet (element manager) port on SP/TMG A.

craftIPSPA = {0-255}.{0-255}.{0-255}.{0-255} - IP address of the craft port on SP/TMG A.

signalingIPSPA={0-255}.{0-255}.{0-255}.{0-255} - IP address of the signaling port on SP/TMG A.

emIPSPB = {0-255}.{0-255}.{0-255}.{0-255} - IP address of the OS Ethernet (element manager) port on SP/TMG B.

craftIPSPB = {0-255}.{0-255}.{0-255}.{0-255} - IP address of the craft port on SP/TMG B.

signalingIPSPB= {0-255}.{0-255}.{0-255}.{0-255} - IP address of the signaling port on SP/TMG B.

emIPMask = {0-255}.{0-255}.{0-255}.{0-255} - OS Ethernet (element manager) subnet mask.

craftIPMask = {0-255}.{0-255}.{0-255}.{0-255} - Subnet mask of the craft port.

signalingIPMask= {0-255}.{0-255}.{0-255}.{0-255} - Subnet mask of the signaling Ethernet port.

signalingIPChassis = {0-255}.{0-255}.{0-255}.{0-255} - IP address of signaling chassis.

dnsIP1 = {0-255}.{0-255}.{0-255}.{0-255} - IP address of primary Domain Network Server (DNS)

dnsIP2 = {0-255}.{0-255}.{0-255}.{0-255} - IP address of secondary DNS

ntpservIP1 = {0-255}.{0-255}.{0-255}.{0-255} - IP address of primary Network Time Protocol server.

ntpservIP2 = {0-255}.{0-255}.{0-255}.{0-255} - IP address of secondary Network Time Protocol server.

dnsName = {up to 64 alphanumeric characters} - Domain name for the Plexus 9000.

Command Example: ED-CHASSIS-EQPT::com::SHELFID=3,  
CHASSISTYPE=BOTH,CLLI=mar l20ds0,  
LOC=b1,EMIPSPA=10.5.2.1,  
CRAFTIPSPA=101.0.0.1,  
SIGNALINGIPSPA=192.168.254.0,  
EMIPSPB=10.5.2.2, CRAFTIPSPB=101.0.0.2,  
SIGNALINGIPSPB=192.168.254.1,  
EMIPMASK=255.255.0.0,  
CRAFTIPMASK=255.255.255.0,  
SIGNALINGIPMASK=255.255.255.0;



**Note:** After changing IP addresses, the Plexus 9000 must be reset or the INIT-SYS command must be executed for the changes to go into effect. It takes several minutes for System Processors to initialize and synchronize. A blinking ACTIVE LED on the protection System Processor indicates that its status is STBYH and it is ready.

9. Reset the Plexus 9000 using the INIT-SYS command.

Command Syntax: INIT-SYS:<TID>::[CTAG]::<ph>;

Command Example: INIT-SYS:telica::::10;

10. Wait until the ACT LED is blinking on the standby SP and then log back in to the system, using the ACT-USER command.

Command Syntax: ACT-USER:[TID]:<uid>:[CTAG]::<pid>;

Command Example: act-user::user5678::password8;

11. Do you want to check IP addresses of the Plexus 9000 at this time?

If **YES**, then go to [Step 19](#).

If **NO**, then go to [Step 6](#).



**Note:** The following steps are used to change the IP addresses of a previously provisioned Plexus.

12. Change the IP addresses using the ED-CHASSIS-EQPT command. Refer to [Step 8](#) for command syntax and parameter descriptions.

Command Syntax: ED-CHASSIS-EQPT:::::  
CRAFTIPSPA=101.0.0.10,  
CRAFTIPSPB=101.0.0.11;

13. Remove the **Standby SP** to reboot it using the RMV-EQPT command.

Command Syntax: RMV-EQPT::SP-B;

14. Restore the **Standby SP** using the RST-EQPT command.

Command Syntax: RST-EQPT::SP-B;

15. Ensure that the **protection** System Processor has a state of IS and STBYH and that the new version is shown by using the RTRV-EQPT command **before continuing** to the next step.

Command Example: RTRV-EQPT;

16. Fail over by switching the working SP **to the protection** SP using the SW-TOPROTN-EQPT command. Switching will terminate Telnet session.

Command Syntax: SW-TOPROTN-EQPT:[TID]:sp-{a|b}:[CTAG];

Command Example: **SW-TOPROTN-EQPT::SP-A;**

17. Log back into the Plexus using a Telnet session, typing **2361** for Port and **VT100** for TermType if required, to the IP address of the other (now active or **working**) System Processor. If you changed the Craft IP address, you will log into that IP address.

18. Do you want to check IP addresses of the Plexus 9000 at this time?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 6](#).

19. Enter the RTRV-CHASSIS-EQPT command to retrieve information about IP addresses.

Command Syntax: RTRV-CHASSIS-EQPT:[<TID>]:[<com>]:[CTAG];

Command Example: RTRV-CHASSIS-EQPT::com;

Comment: If a response of "Specified Object Entity Does Not Exist", it means that no IP addresses have been provisioned.

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"com:SHELFID=<shelfId>,CHASSISTYPE=<chassisType>,
[CLLI=<clli>],[LOC=<loc>],EMIPSPA=<emIPSPA>,
CRAFTIPSPA=<craftIPSPA>,SIGNALINGIPA=<signalingIPSPA>,
EMIPSPB=<emIPSPB>,CRAFTIPSPB=<craftIPSPB>,
SIGNALINGIPSPB=<signalingIPSPB>, EMIPMASK=<emIPMask>,
CRAFTIPMASK=<craftIPMask>,SIGNALINGIPMASK=<signalingIPMask>,
[SIGNALINGIPCHASSIS=<signalingIPChassis>],
[DNSIP1=<dnsIP1>],[DNSIP2=<dnsIP2>],
[NTPSERVIP1=<ntpservIP1>],[NTPSERVIP2=<ntpservIP2>],
DNSNAME=<dnsName>"
;
```

**Output Example:**

```
telica 2003-01-11 13:37:22
M 0 COMPLD
"COM:SHELFID=0,CHASSISTYPE=BOTH,CLLI=,LOC=,
EMIPSPA=0.0.0.0,CRAFTIPSPA=0.0.0.0,SIGNALINGIPSPA=0.0.0.0,
EMIPSPB=0.0.0.0,CRAFTIPSPB=0.0.0.0,SIGNALINGIPSPB=0.0.0.0,
EMIPMASK=0.0.0.0,CRAFTIPMASK=0.0.0.0,
SIGNALINGIPMASK=0.0.0.0,SIGNALINGIPCHASSIS=0.0.0.0,
DNSIP1=0.0.0.0,DNSIP2=0.0.0.0,NTPSERVIP1=0.0.0.0,
NTPSERVIP2=0.0.0.0,DNSNAME=NULL"
/* RTRV-CHASSIS-EQPT */
```

20. Do you want to change any IP addresses?

If **YES**, then go to [Step 12](#).

If **NO**, then go to [Step 6](#).



**Note:** The following steps will initialize or reboot the Plexus. It takes several minutes for System Processors to initialize and synchronize. A blinking ACTive LED on the protection System Processor indicates that its status is STBYH and it is ready.

21. Reset the Plexus 9000 using the INIT-SYS command.

Command Syntax: `INIT-SYS:<TID>::[CTAG]::<ph>;`

**parameters:**

ph               = 10 - Normal shutdown and reboot.  
                  = 20 - Shutdown and halt (no reboot).  
                  = 25 - Shutdown and halt the standby (no reboot).  
                  = 30 - Shutdown and clean persistent databases.

Command Example: `INIT-SYS:telica::::10;`

22. When the ACT LED is **blinking** on the protection System Processor, log into the Plexus 9000 using the ACT-USER command.

Command Syntax: `ACT-USER::telica:::telica;`

23. Verify the current state of the alarm conditions within the Network Element by entering the RTRV-ALM-COM command when the Plexus 9000 has finished initialization.

Command Syntax: `RTRV-ALM-  
<AidType>:[TID]:[<alm_id>]:[CTAG]::  
[NTFCNCDE=<ntfcncde>],[CONDTYPE=<condty  
pe>],[SRVEFF=<srveff>],[OCRDAT=<ocrdat>  
<], [OCRTM=<ocrtm>],[DESC=<desc>;`

Reference: DLP-568 for parameter definitions.

Command Example: `RTRV-ALM-COM;`

24.  **YOU HAVE COMPLETED THIS PROCEDURE.**

## DLP-554 - REMOVE OR RESTORE MODULES FROM/TO SERVICE

**SUMMARY:** This procedure explains how to remove a module from service or restore a module to service.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Select your task from the following and go to the indicated step.
  - Remove a module from service..... [Step 3](#)
  - Check module service status ..... [Step 6](#)
  - Restore a module to service ..... [Step 10](#)
  - Finished, no other task in the above list..... continue to the next step.

2.  **YOU HAVE COMPLETED THIS PROCEDURE.**

3. Remove module from service

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 5](#).

Command Syntax: `RMV-EQPT:[TID]:<iomOrSp>:[CTAG]::  
[<mode>],[<state>];`

**parameters:**

|         |                                                                                                             |
|---------|-------------------------------------------------------------------------------------------------------------|
| iomOrSp | = IOM-{1 . . . 17} (I/O module in the Plexus 9000)                                                          |
|         | = SP-{A B}                                                                                                  |
| mode    | = {string of ASCII characters} - Specifies how will be removed from service. Currently is not used.         |
| state   | = {string of ASCII characters} - Specifies state to which equipment will be removed. Currently is not used. |

Command Example: **RMV-EQPT::IOM-1;**

4. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select Yes to remove the module. Refer to [Figure 1](#).

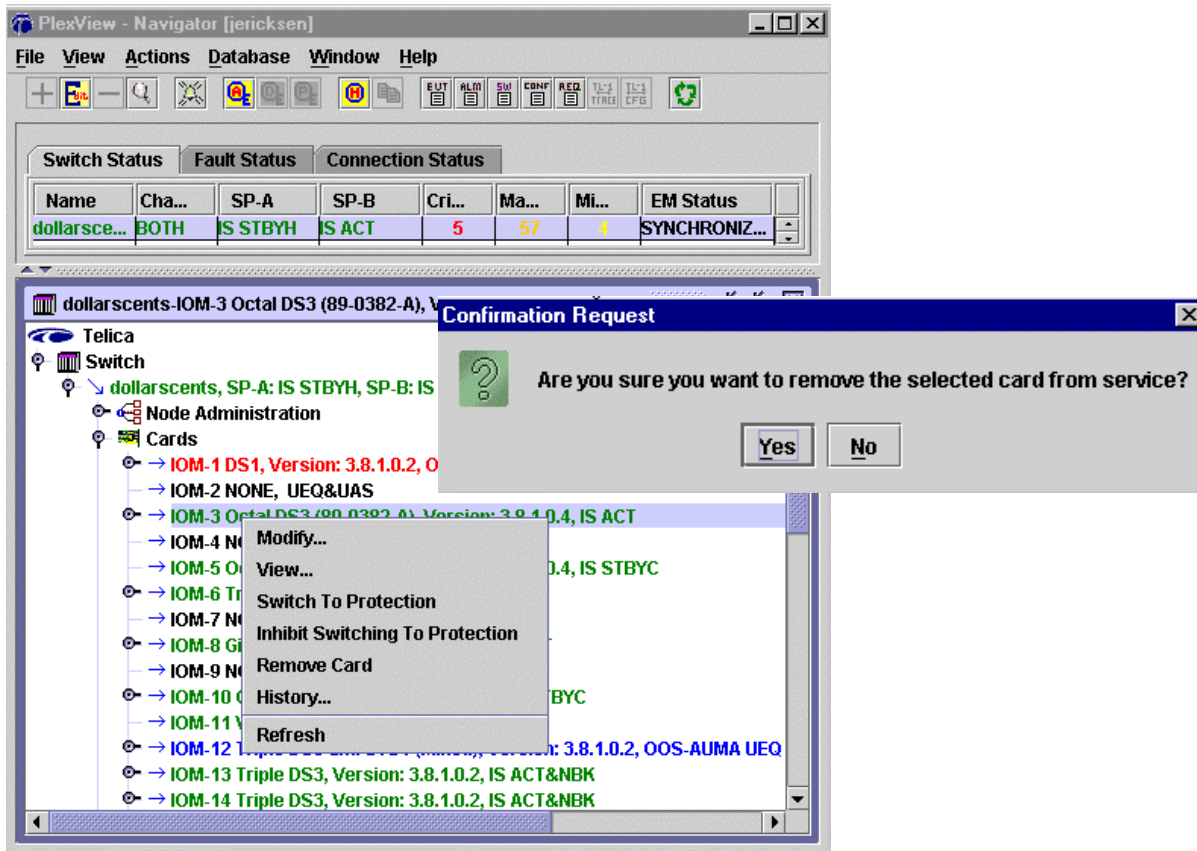


Figure 1. Removing a Module

5. Do you want to check the state of the equipment?  
If **YES**, then continue to the next Step.  
If **NO**, then go to [Step 1](#).
6. Verify the state of the equipment.  
If using **EMS**, then continue to the next step.  
If using **TL1**, execute the RTRV-EQPT or RTRV-EQPT-ALL command and then go to [Step 8](#).  
Command Syntax: RTRV-EQPT:[TID]:[<src>]:[CTAG];  
Command Syntax: RTRV-EQPT-ALL:[TID]:[<src>]:[CTAG];  
**parameters:**  
src = IOM-{1 . . . 17} (I/O module in the Plexus 9000)  
= SP-{A|B}  
Command Example: RTRV-EQPT::IOM-4;



**Output Format for RTRV-EQPT:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:: [<moduleType>], [<rn>], <spMemThreshold>,
<spNVMemThreshold>, <spBusyThreshold>, [<swVersion>]:
<primaryState>, [<secondaryState>]" ;
```

**Output Format for RTRV-EQPT-ALL:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>: [IOMODULETYPE=<moduleType>],
[REDUNDANCY=<rn>], MEMTHRESHOLD=<spMemThreshold>,
NVMEMTHRESHOLD=<spNVMemThreshold>,
BUSYTHRESHOLD=<spBusyThreshold>, [SWVERSION=<swVersion>],
[REARMODULETYPE=<rearModuleType>]:<primaryState>,
[<secondaryState>]"
;
```

**Output Example for RTRV-EQPT:**

```
Telica 2000-06-20 14-30-00
M 001 COMPLD
 "IOM3::BA9IBB0AAA,SX,70,80,85,3.1.0.0:IS,ACT,NBK"
/* RTRV-EQPT */
;
```

7. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Configuration*. Note the CLEI and software version. Refer to [Figure 2](#).
8. Is there other equipment to remove from service?  
If **YES**, then go to [Step 3](#).  
If **NO**, then go to [Step 1](#).
- 9.

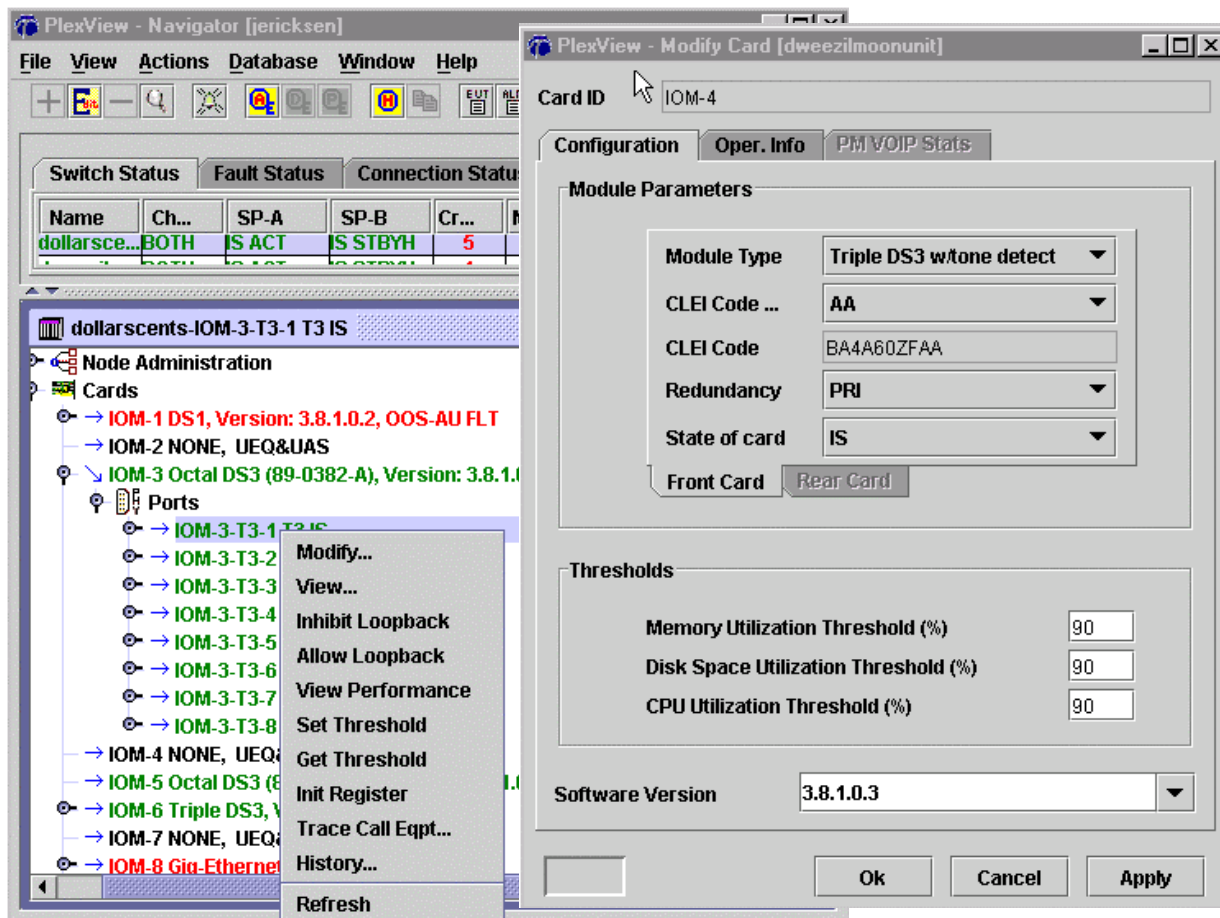


Figure 2. Retrieving Module Configuration

10. Restore equipment to service

If using **EMS**, then continue to the next step.

If using **TL1**, execute the RST-EQPT command and then go to [Step 12](#). Refer to [Step 3](#) for a description of the parameters.

Command Syntax: RST-EQPT:[TID]:<iomOrSp>:[CTAG]::  
[<mode>];

Command Example: RST-EQPT::IOM-7;

11. Double-click the switch to select it for the main panel and double-click *Cards*. Right-click the desired SP and then select *Restore Card*. A confirmation screen will appear. Select Yes to restore the module. Refer to [Figure 3](#).

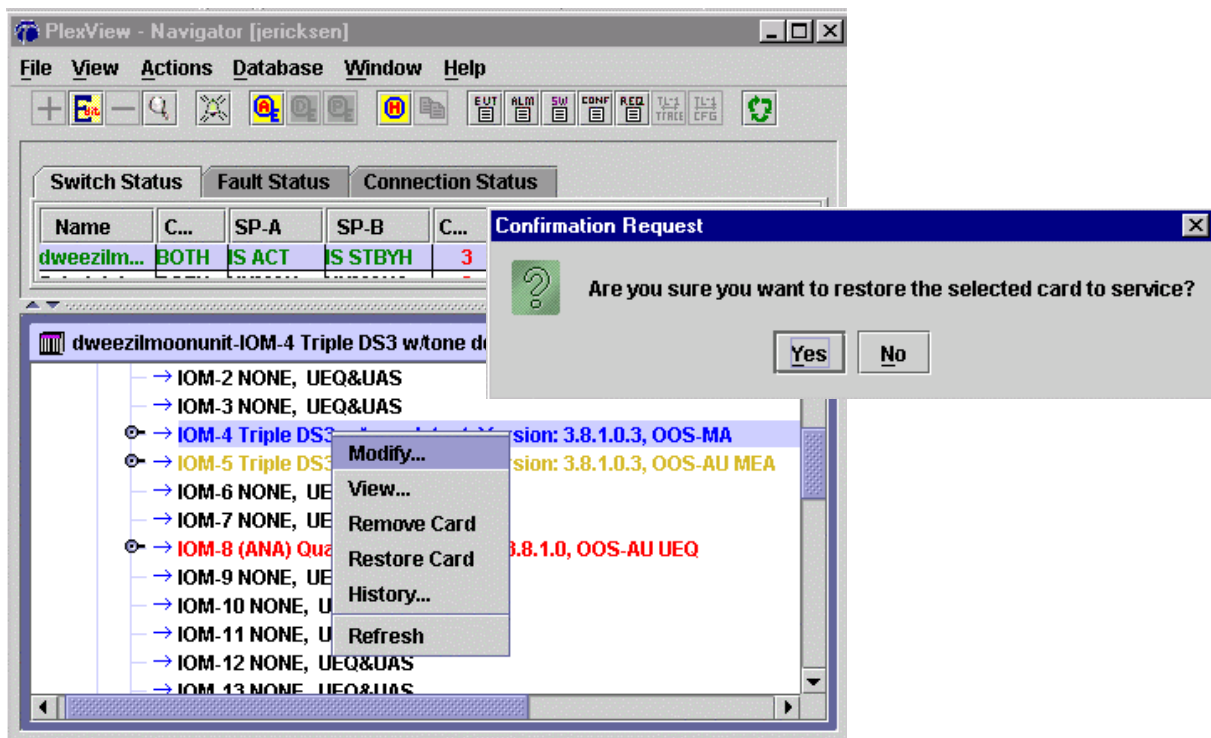


Figure 3. Restoring a Module

12. Is there other equipment to restore to service?

If YES, then go to [Step 10](#).

If NO, then go to [Step 1](#).

**NOTES:**

## DLP-555 - LOG COMMANDS

**SUMMARY:** This procedure provides steps to set the size of a log, clear a log, retrieve the attributes of a log and retrieve contents of a log.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Select your task from the following and go to the indicated step.
  - Set log attributes (size, clearing) ..... [Step 3](#)
  - Retrieve the attributes of a log ..... [Step 6](#)
  - Retrieve the contents (messages) of a log ..... [Step 8](#)
  - Finished, no other task in the above list ..... continue to the next step.

2.  **YOU HAVE COMPLETED THIS PROCEDURE.**

3. Set the size of the log and/or clear the log.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the SET-ATTR-LOG command and go to [Step 5](#).

Command Syntax: SET-ATTR-LOG:[TID]:[<log\_id>]:[CTAG]::  
<lognm>,[<clr log>],[<maxmsg>;

**parameters:**

log\_id = **COM** Identifies the Plexus 9000 from which to retrieve a log.  
lognm = AO - Autonomous messages log  
= BKUP – Backup log  
= BULK – Bulk download log  
= CALLCAPT – Call capture/trace log  
= CALLCAPTV – Call capture verbose log  
= FRAUD – Fraud calling log  
= MSG - Message log  
= PATCH – Patch log  
= SEC - Security log  
= SECBKUP – Security backup log  
= SYS - System log  
clrlog = CLR - Clears log.  
= DLT - Deletes log  
= **NOCLR** - Don't clear log  
maxmsg = {1 . . . 9999} Identifies the maximum number of messages to be logged.  
Defaults are AO = 1000, MSG = 1000, SYS = 1000 and SEC = 400. CALLCAPT = 1000 records and BKUP = 1 message for most recent backup attempt.

Command Example: SET-ATTR-LOG::COM:::SYS,CLR,9999;

4. Double-click the switch to select it for the main panel and right-click the switch name. Then select *Set Log Attributes*. A log attribute screen will display. Refer to [Figure 1](#).

**parameters for Set Log Attributes:**

Log Name = AO - Autonomous messages log  
= MSG – Message log of all TL1 commands entered.  
= SEC - Security log of all logins, logouts, failed logins, etc.  
= SYS - System log of all system messages such as processes started, alarms, events, etc.  
= BULK – Bulk download log  
= FRAUD – Fraud calling log  
Clear Log = CLR - Clears log.  
= DLT - Deletes log  
= **NOCLR** - Don't clear log  
Size = {1 . . . 9999} Identifies the maximum number of messages to be logged.  
Defaults are AO = 1000, BULK = 10000, FRAUD = 1000, MSG = 20000, SYS = 500 and SEC = 400. CALLCAPT = 1000 records and BKUP = 1 message for most recent backup attempt.

5. Will the attributes of another log be set or changed?

If **YES**, then go to [Step 3](#).

If **NO**, then go to [Step 1](#).

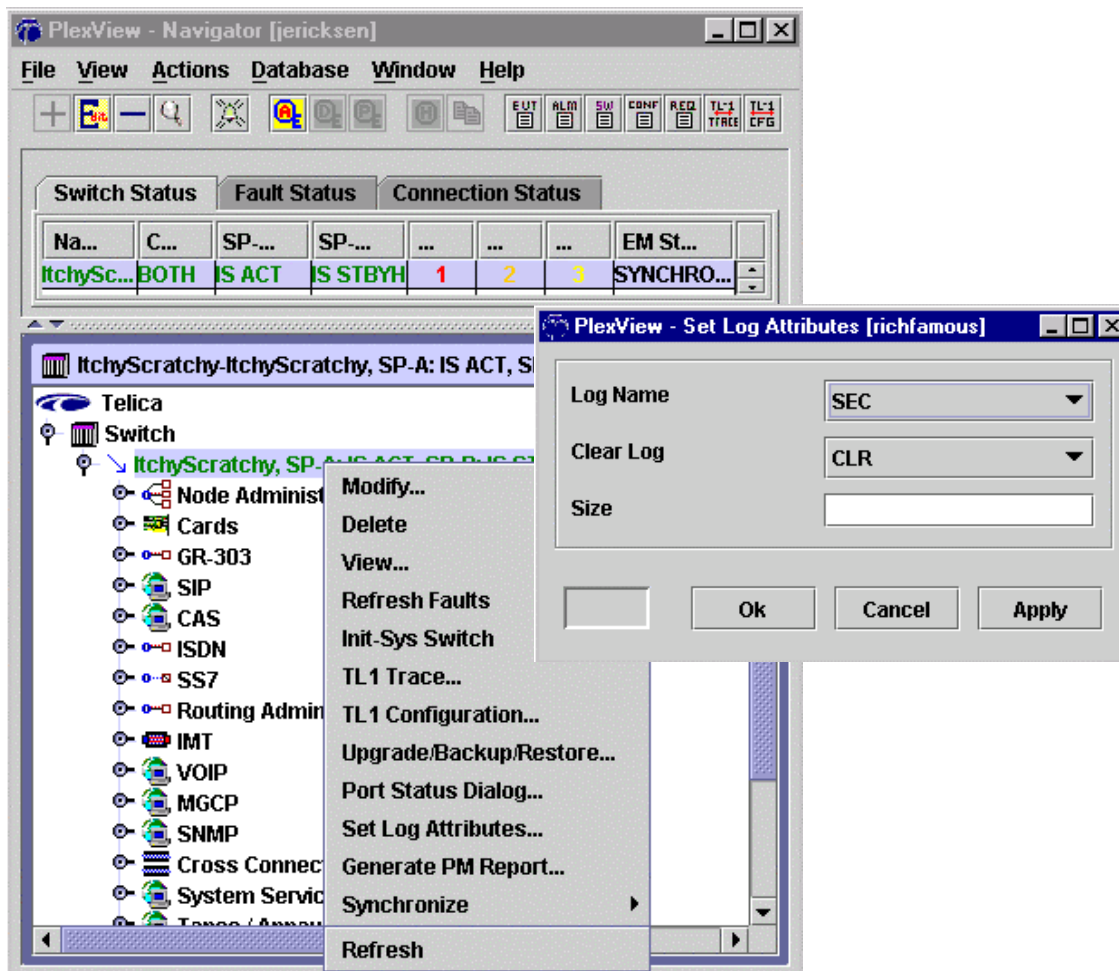


Figure 1. Setting Log Attributes



**Note:** Currently log attributes cannot be retrieved using EMS.

6. Check the attributes of a log by entering the RTRV-ATTR-LOG command.

Command Syntax: RTRV-ATTR-LOG:[TID]:[<log\_id>]:[CTAG]::  
[<lognm>];

**parameters:**

log\_id = COM Identifies the Plexus 9000 from which to retrieve a log.  
lognm = AO - Autonomous message log  
= BKUP - Backup log  
= CALLCAPT - Call capture/trace log  
= CALLCAPTV - Call capture verbose  
= MSG - Message log  
= PATCH - Patch log  
= SEC - Security log  
= SYS - System log

Command Example: RTRV-ATTR-LOG::COM::MSG;

**Output Format:**

```
 SID DATE TIME
M CTAG COMPLD
 "<lognm>,[<maxmsg>]"
;
```

**Output Example:**

```
 Telica 2000-06-20 14-30-00
M 001 COMPLD
 "SYS,1000"
 "MSG,1000"
 "AO,1000"
 "SEC,400"
 "CALLCAPT,1000"
 /* RTRV-ATTR-LOG */
;
```

7. Is there another log to check?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 1](#).

8. Check the messages of a log

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-LOG command and then go to [Step 10](#).

Command Syntax: RTRV-LOG:[TID]:[<log\_id>]:[CTAG]::  
<lognm>;

**parameters:**

|        |                                                                       |
|--------|-----------------------------------------------------------------------|
| log_id | = <b>COM</b> Identifies the Plexus 9000 from which to retrieve a log. |
| lognm  | = AO - Autonomous message log                                         |
|        | = BKUP – Backup log                                                   |
|        | = BULK – Bulk download log                                            |
|        | = CALLCAPT – Call capture/trace log                                   |
|        | = CALLCAPTV – Call capture verbose log                                |
|        | = FRAUD – Fraud calling log                                           |
|        | = MSG - Message log                                                   |
|        | = PATCH – Patch log                                                   |
|        | = SEC - Security log                                                  |
|        | = SECBKUP – Security backup log                                       |
|        | = SYS - System log                                                    |

Command Example: RTRV-LOG::COM::MSG;



### Output Format:

```
SID DATE TIME
M CTAG COMPLD
/*"<free-format-text log messages>"*/
;
```

### Output Example:

```
Telica 2000-06-20 14-30-00
M 001 COMPLD
/* "2000-05-18 15:08:50 rtrv-eqpt::sp-a" */
/* "2000-05-18 15:08:55 rtrv-eqpt" */
/* "2000-05-18 15:09:39 act-
user::telica:99::*****" */
/* RTRV-LOG */
;
```

9. Double-click the switch to select it for the main panel. In the toolbar, select the log to retrieve.

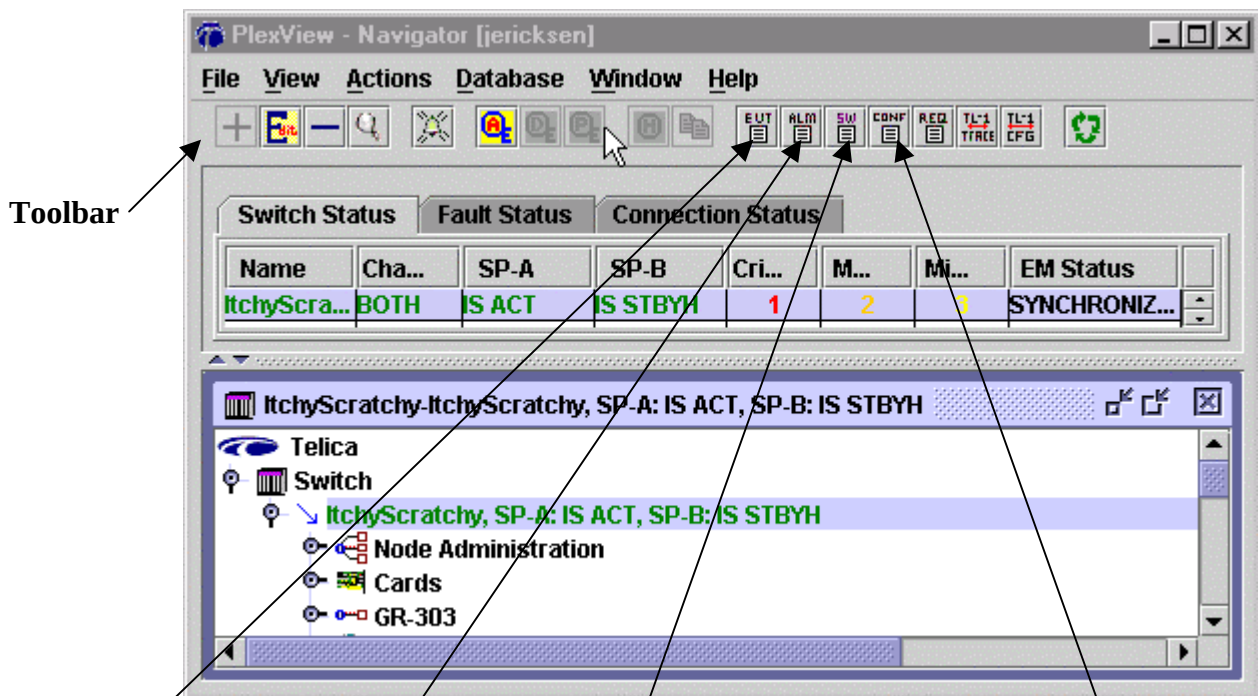


Figure 2. Logs

**EVT**  
Config Event Log

**ALM** –  
Alarm Log

**SW**  
Transfer/View Switch Logs

**CONF**  
Config Log

**10.** Is there another log to check?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 1](#).

## DLP-556 - ALLOW OR INHIBIT LOOPBACKS

**SUMMARY:** This procedure provides steps to allow or inhibit ports of the Plexus 9000 to respond or not respond to remote loopbacks.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISDN messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 20](#).

2. Select your task from the following and go to the indicated step.

- Allow remote T1 loopbacks ..... [Step 4](#)
- Allow remote T3 loopbacks ..... [Step 6](#)
- Allow remote STS-1 loopbacks ..... [Step 8](#)
- Allow remote OC loopbacks ..... [Step 10](#)
- Inhibit remote T1 loopbacks ..... [Step 12](#)
- Inhibit remote T3 loopbacks ..... [Step 14](#)
- Inhibit remote STS-1 loopbacks..... [Step 16](#)
- Inhibit remote OC loopbacks ..... [Step 18](#)
- Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Allow a port of the Plexus 9000 to respond to a remote T1 loopback request. Double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. If the IOM is a DS3 IOM, then click *DS3 port* and *Ports*. Right-click the desired port and select *Allow Loopback*. Click *Yes* in displayed frame to allow loopbacks. See [Figure 1](#).

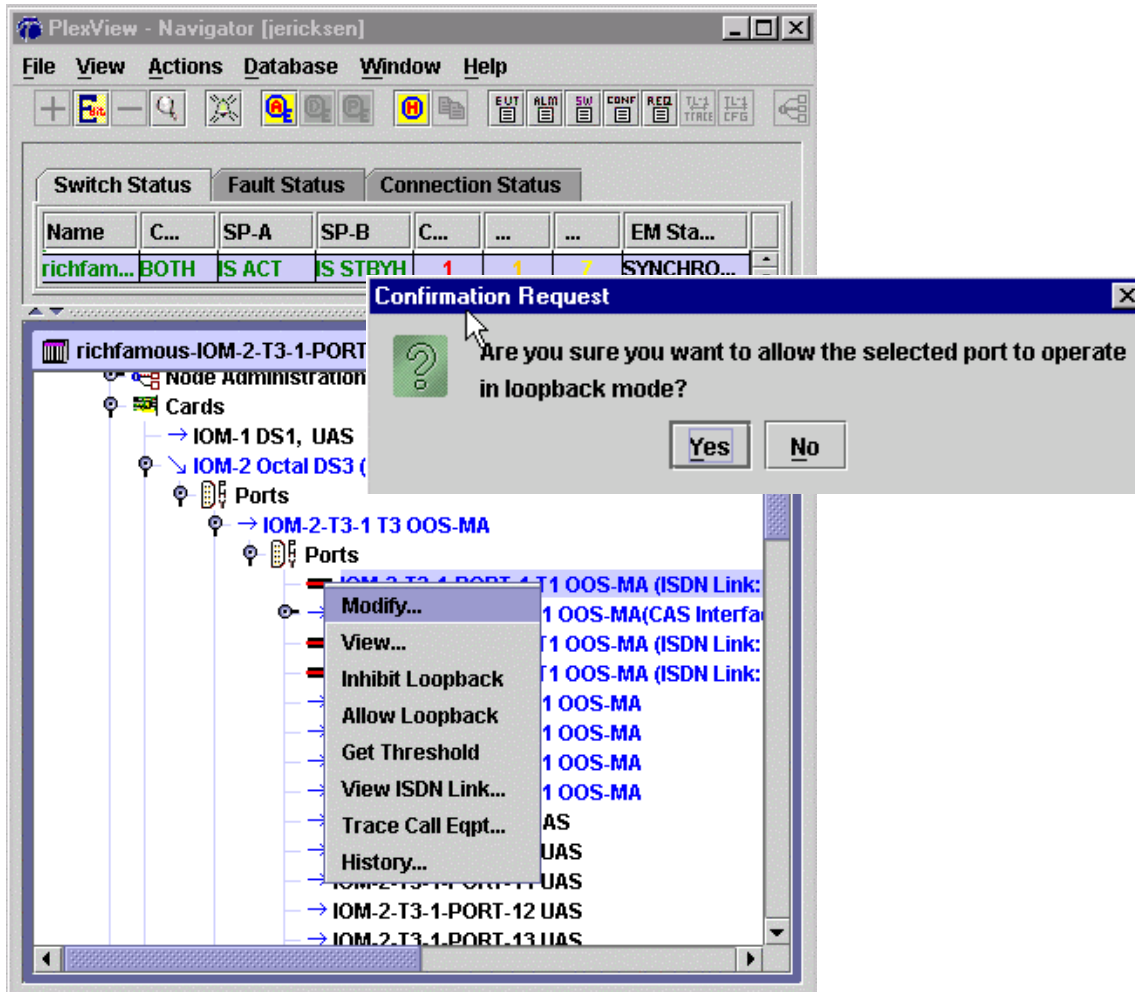


Figure 1. Allowing T1 Loopbacks

5. Will remote loopbacks be allowed for another IOM's port?  
If **YES**, then go to [Step 4](#).  
If **NO**, then go to [Step 2](#).

6. Allow a port of the Plexus 9000 to respond to a remote T3 loopback request. Double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. Right-click the desired port and select *Allow Loopback*. Click Yes in displayed frame to allow loopbacks. See [Figure 2](#).

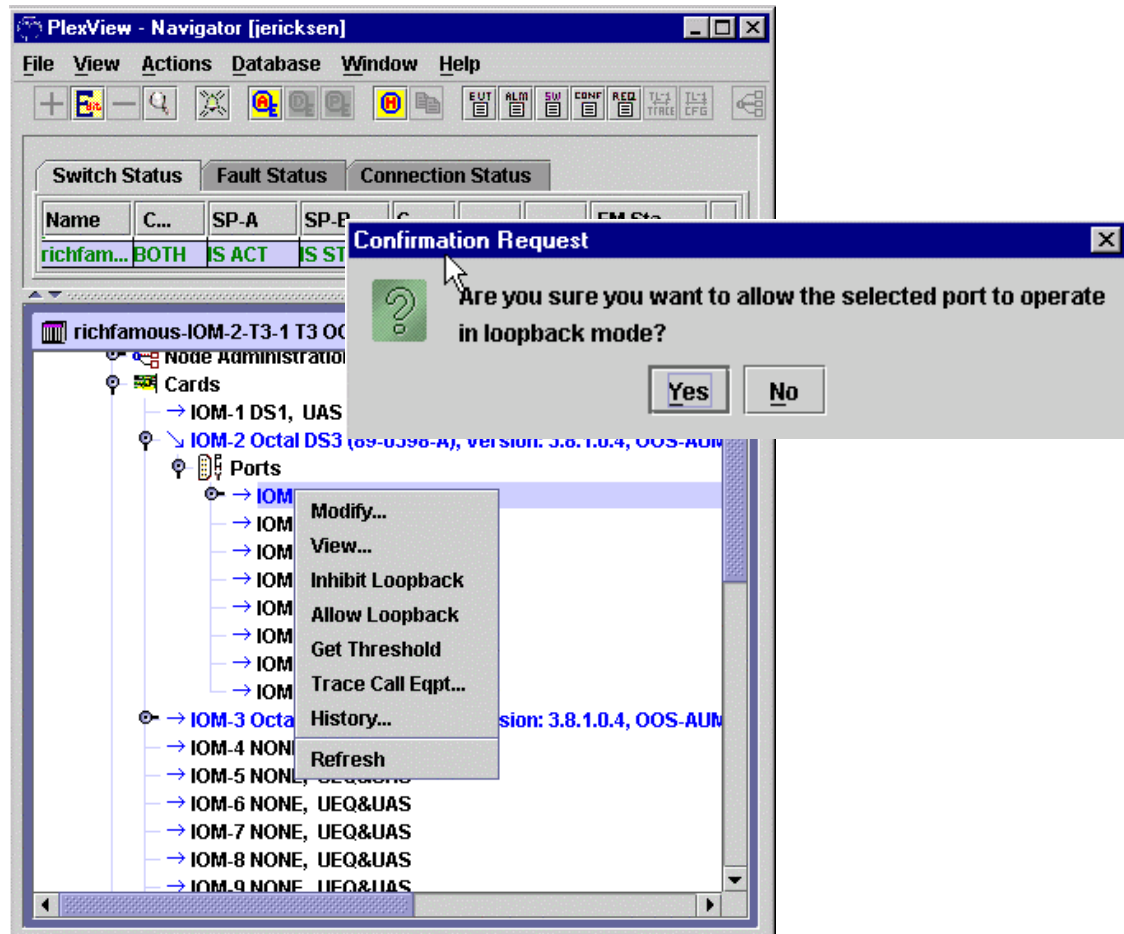


Figure 2. Allowing T3 Loopbacks

7. Will remote T3 loopbacks be allowed for another IOM's port?  
If **YES**, then go to [Step 6](#).  
If **NO**, then go to [Step 2](#).
8. Allow a port of the Plexus 9000 to respond to a remote STS-1 loopback request. Double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. Right-click the desired port and select *Allow Loopback*. Click Yes in displayed frame to allow loopbacks. See [Figure 3](#).

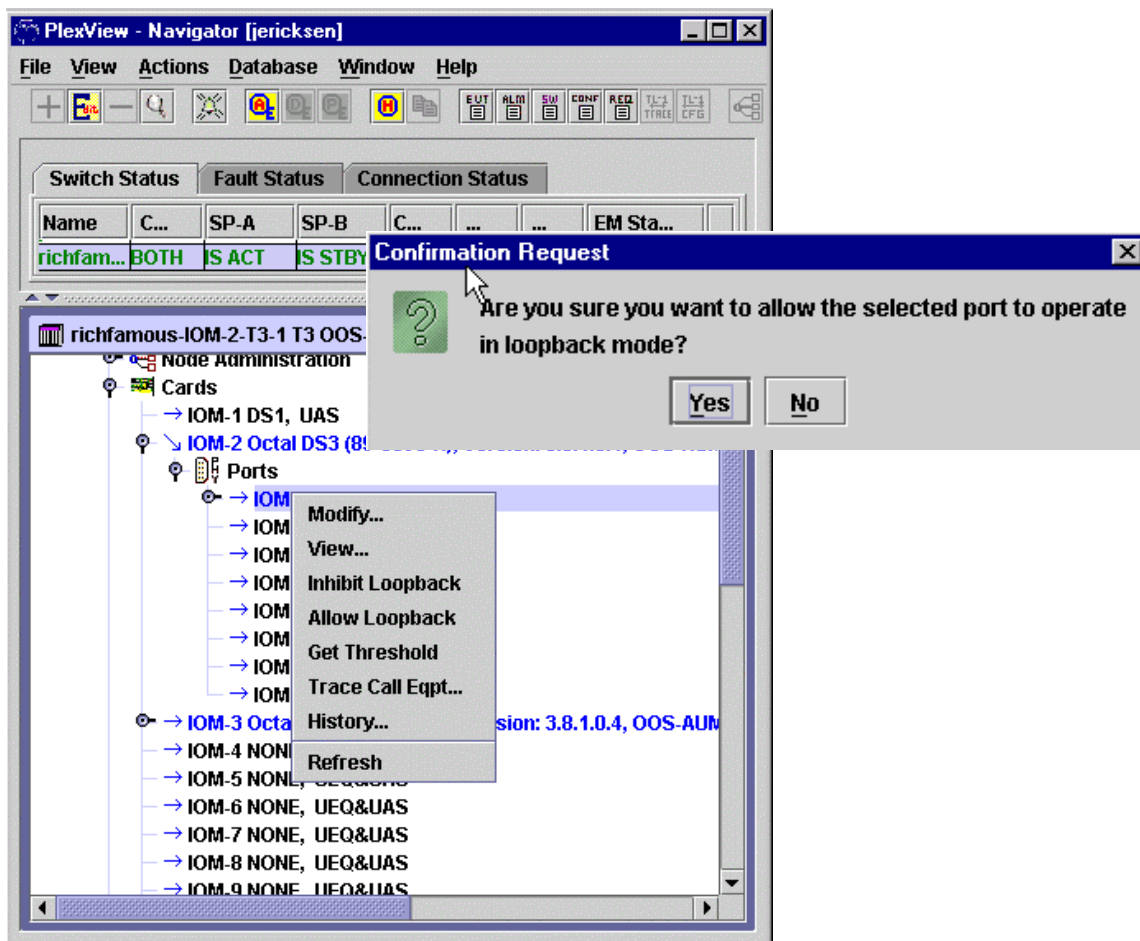


Figure 3. Allowing STS1 Loopbacks

9. Will remote STS-1 loopbacks be allowed for another IOM's port?  
If YES, then go to [Step 8](#).  
If NO, then go to [Step 2](#).
10. Allow a port of the Plexus 9000 to respond to a remote OC-3 or OC-12 loopback request. Double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. Right-click the desired port and select *Allow Loopback*. Click Yes in displayed frame to allow loopbacks. See [Figure 4](#).

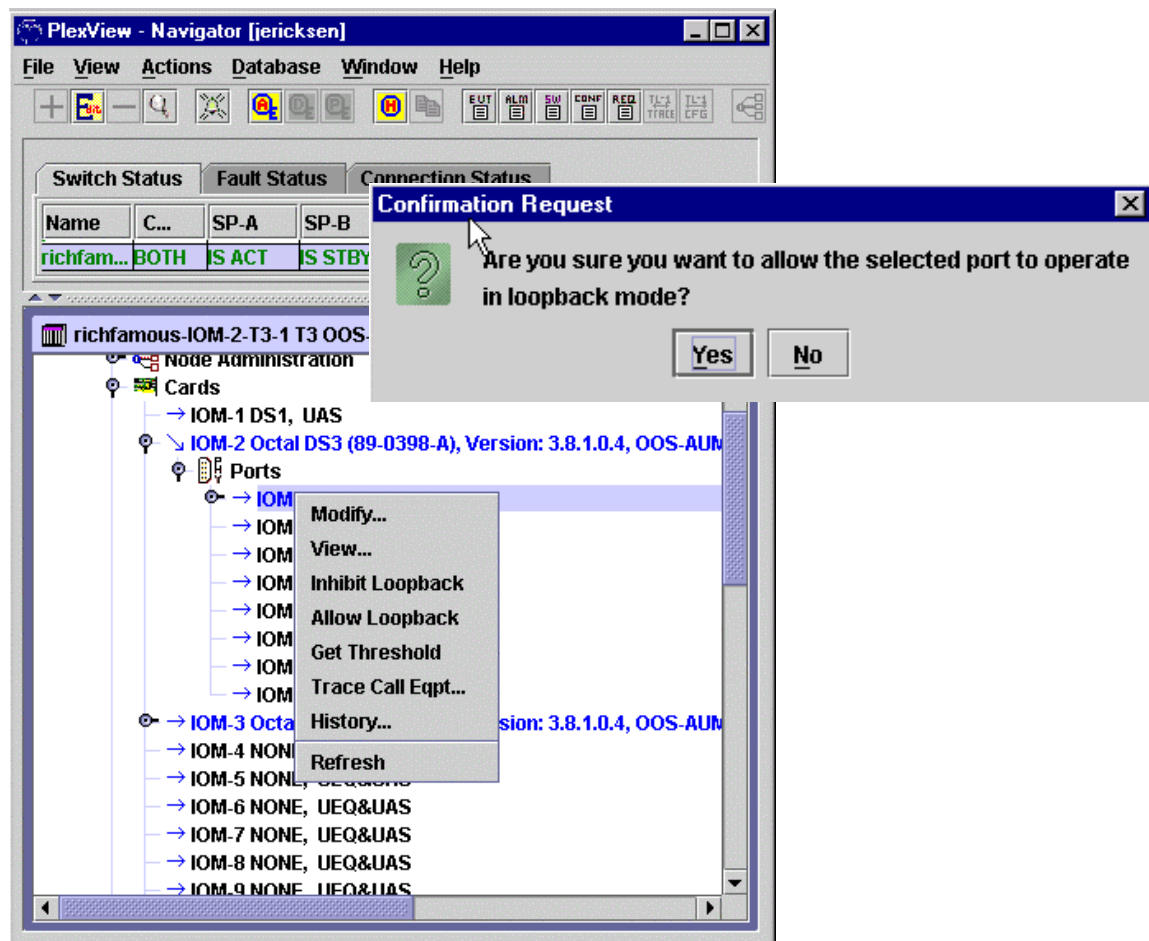


Figure 4. Allowing OC Loopbacks

11. Will remote OC-3 or OC-12 loopbacks be allowed for another IOM's port?  
If **YES**, then go to [Step 10](#).  
If **NO**, then go to [Step 2](#).
12. To prevent remote T1 loopbacks, double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. If the IOM is a DS3 IOM, then click *DS3 port* and *Ports*. Right-click the desired port and select *Inhibit Loopback*. Click *Yes* in displayed frame to inhibit loopbacks. See [Figure 5](#).

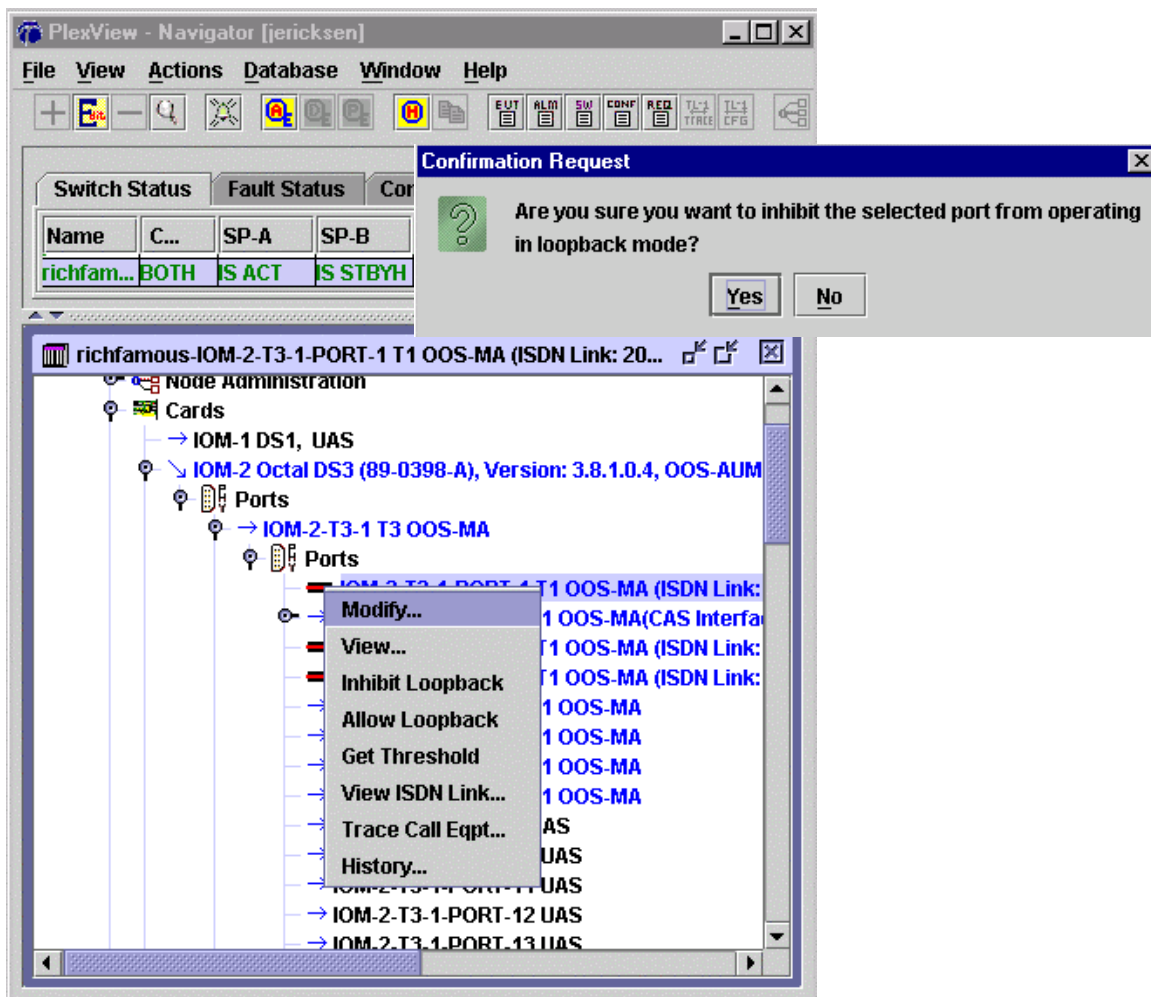


Figure 5. Inhibiting T1 Loopbacks

13. Is there another port to inhibit?  
If YES, then go to [Step 12](#).  
If NO, then go to [Step 2](#).
14. To prevent remote T3 loopbacks, double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. Right-click the desired port and select *Inhibit Loopback*. Click Yes in displayed frame to allow loopbacks. See [Figure 6](#).



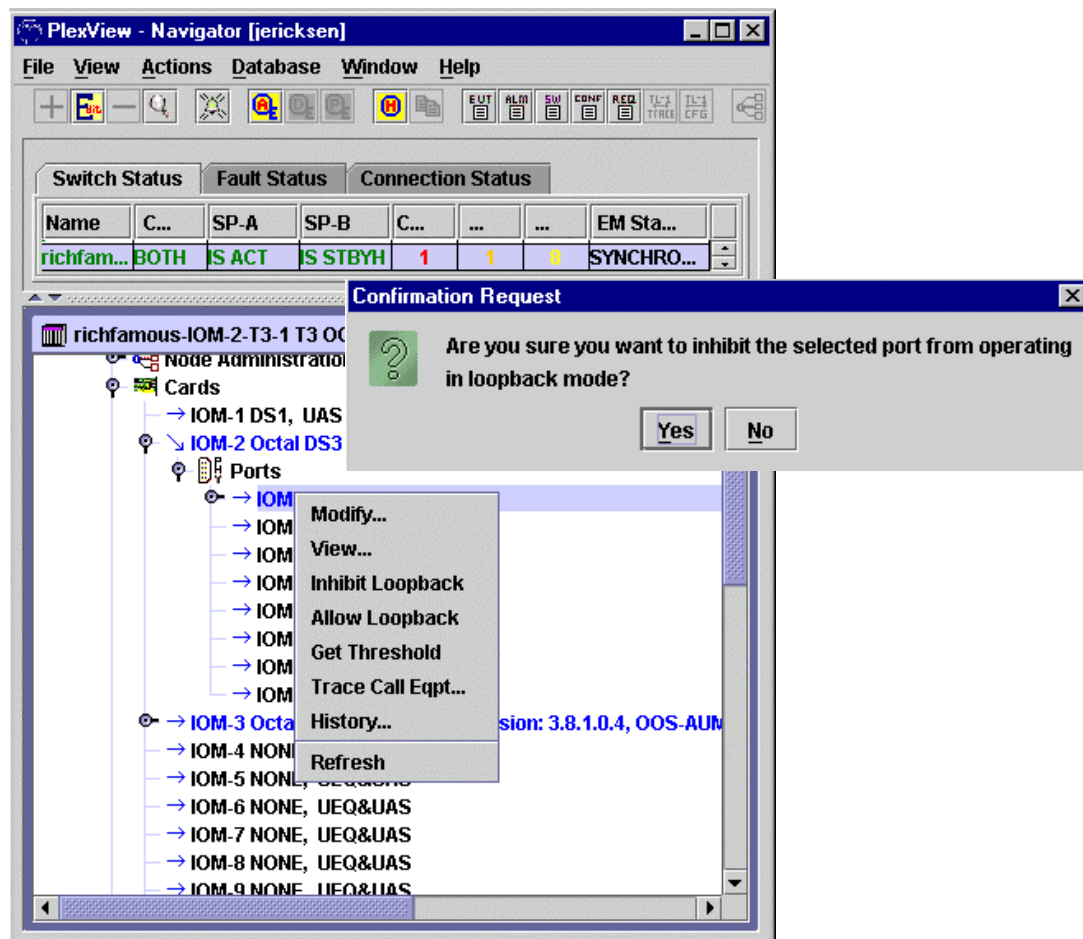


Figure 6. Inhibiting T3 Loopbacks

15. Is there another port to inhibit?  
If YES, then go to [Step 14](#).  
If NO, then go to [Step 2](#).
16. To prevent remote STS-1 loopbacks, double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. Right-click the desired port and select *Inhibit Loopback*. Click Yes in displayed frame to allow loopbacks. See [Figure 7](#).

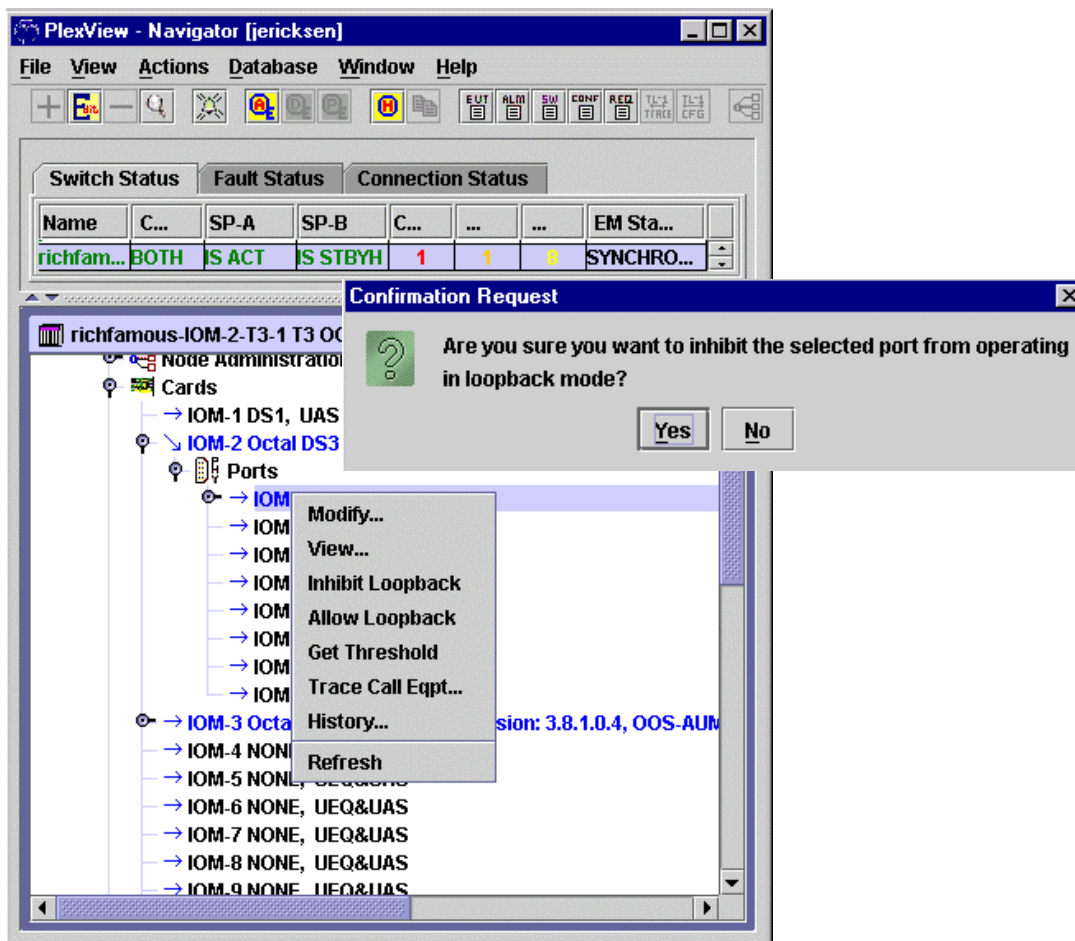


Figure 7. Inhibiting STS1 Loopbacks

17. Is there another port to inhibit?  
If **YES**, then go to [Step 16](#).  
If **NO**, then go to [Step 2](#).
18. To prevent remote OC-3 or OC-12 loopbacks, double-click the switch to select it for the main panel and then right-click the switch name. Click *Cards*, desired *IOM* and *Ports*. Right-click the desired port and select *Inhibit Loopback*. Click *Yes* in displayed frame to allow loopbacks. See [Figure 8](#).

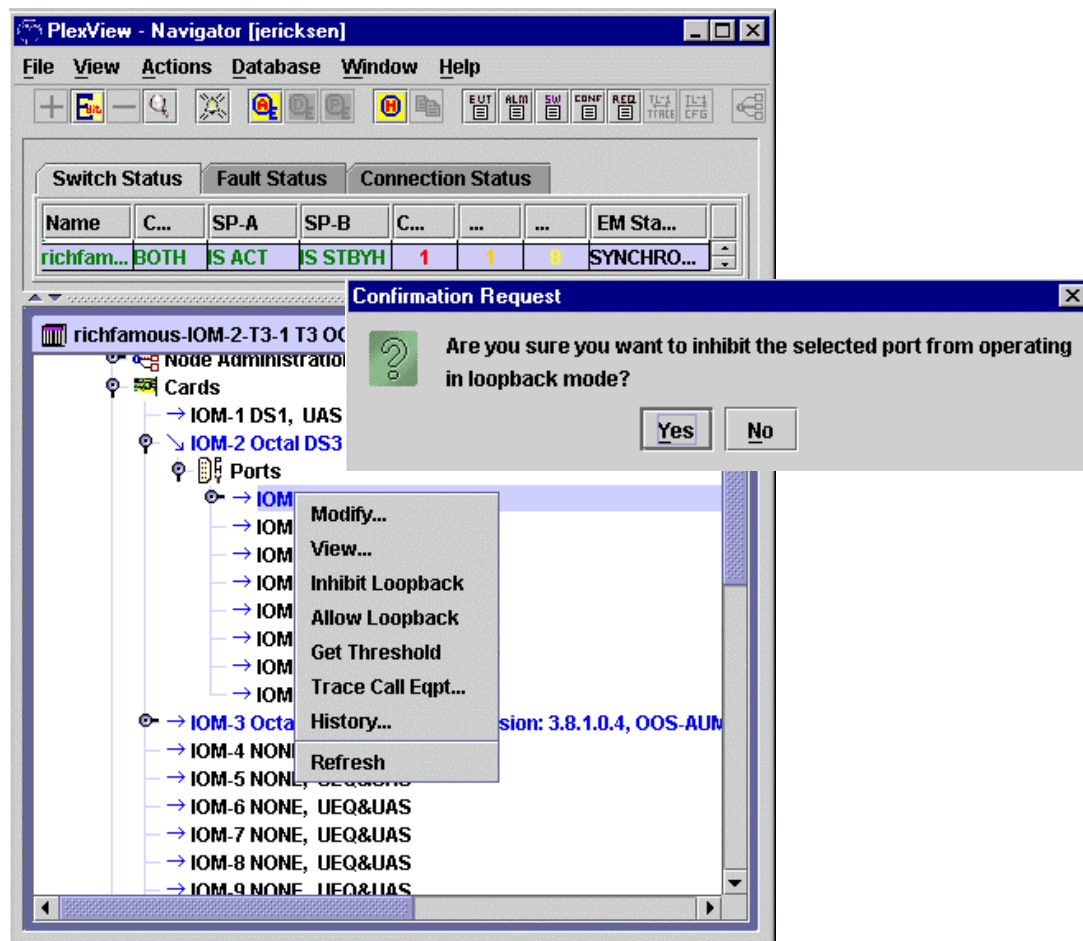


Figure 8. Inhibiting OC Loopbacks

19. Is there another port to inhibit?
  - If YES, then go to [Step 16](#).
  - If NO, then go to [Step 2](#).
  
20. Select your task from the following and go to the indicated step.
  - Allow remote T1 loopbacks ..... [Step 22](#)
  - Allow remote T3 loopbacks ..... [Step 24](#)
  - Allow remote STS-1 loopbacks ..... [Step 26](#)
  - Allow remote OC loopbacks ..... [Step 28](#)
  - Inhibit remote T1 loopbacks ..... [Step 30](#)
  - Inhibit remote T3 loopbacks ..... [Step 32](#)
  - Inhibit remote STS-1 loopbacks..... [Step 34](#)
  - Inhibit remote OCloopbacks ..... [Step 36](#)
  - Finished, no other task in the above list..... continue to the next step.

21.  **YOU HAVE COMPLETED THIS PROCEDURE.**
22. Allow a port of the Plexus 9000 to respond to a remote T1 loopback request using the ALW-LPBK-T1 command.
- Command Syntax: ALW-LPBK-T1:[TID]:<src>:[CTAG];
- parameters:**
- src = IOM-{1 . . . 17}-PORT-{1 . . . 28} –DS1 IOM port that will allow the Plexus 9000 to respond to loopback requests.  
= IOM-{1 . . . 17}-T3-{1 . . . 8}PORT-{1 . . . 28} –DS3 IOM port that will allow the Plexus 9000 to respond to loopback requests.  
= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} –STS-1 IOM port that will allow the Plexus 9000 to respond to loopback requests.
- Command Example: ALW-LPBK-T1::IOM-1-PORT-1;
23. Will remote loopbacks be allowed for another IOM's port?
- If **YES**, then go to [Step 22](#).  
If **NO**, then go to [Step 20](#).
24. Allow a port of the Plexus 9000 to respond to a remote T3 loopback request using the ALW-LPBK-T3 command.
- Command Syntax: ALW-LPBK-T3:[TID]:<src>:[CTAG];
- parameters:**
- src = IOM-{1 . . . 17}-T3-{1 . . . 8} - DS3 port of DS3/STS-1 I/O module
- Command Example: ALW-LPBK-T3::IOM-1-T3-1;
25. Will remote T3 loopbacks be allowed for another IOM's port?
- If **YES**, then go to [Step 24](#)  
If **NO**, then go to [Step 20](#).
26. Allow a port of the Plexus 9000 to respond to a remote STS-1 loopback request using the ALW-LPBK-STS1 command.
- Command Syntax: ALW-LPBK-STS1:[TID]:<src>:[CTAG];
- parameters:**
- src = IOM-{1 . . . 17}-STS1-{1 . . . 8} – STS-1 port of DS3/STS-1 IOM
- Command Example: ALW-LPBK-T3::IOM-1-PORT-1;

27. Will remote STS-1 loopbacks be allowed for another IOM's port?

If **YES**, then go to [Step 26](#).

If **NO**, then go to [Step 20](#).

28. Allow a port of the Plexus 9000 to respond to a remote OC-3 or OC-12 loopback request using the ALW-LPBK-OC3 or ALW-LPBK-OC12 command.

Command Syntax: ALW-LPBK-OC3:[TID]:<src>:[CTAG];

Command Syntax: ALW-LPBK-OC12:[TID]:<src>:[CTAG];

**parameters:**

lpbk\_id = IOM-{8|10}-OC3-{1 . . . 4} – OC-3 port of OC IOM

= IOM-{8|10}-OC12-{1 . . . 4} – OC-12 port of OC IOM

Command Example: ALW-LPBK-OC12::IOM-8-PORT-1;

29. Will remote OC-3 or OC-12 loopbacks be allowed for another IOM's port?

If **YES**, then go to [Step 28](#).

If **NO**, then go to [Step 20](#).

30. Prevent remote T1 loopbacks by entering the INH-LPBK-T1 command.

Command Syntax: INH-LPBK-T1:[TID]:<src>:[CTAG];

**parameters:**

src = IOM-{1 . . . 17}-PORT-{1 . . . 28} - DS1 IOM port that will inhibit responses to loopback requests.

= IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28} - DS3 port of DS3/STS-1 IOM

= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28} - STS-1 port of DS3/STS-1 IOM

Command Example: INH-LPBK-T1::IOM-1-PORT-1;

31. Is there another port to inhibit?

If **YES**, then go to [Step 30](#).

If **NO**, then go to [Step 20](#).

32. Prevent remote T3 loopbacks by entering the INH-LPBK-T3 command.

Command Syntax: INH-LPBK-T3:[TID]:<src>:[CTAG];

**parameters:**

src = IOM-{1 . . . 17}-T3-{1 . . . 8} – DS3 port of DS3 I/O module

Command Example: INH-LPBK-T3::IOM-1-T3-1;

33. Is there another port to inhibit?

If **YES**, then go to [Step 32](#).

If **NO**, then go to [Step 20](#).

34. Prevent remote STS-1 loopbacks by entering the INH-LPBK-STS1 command.

Command Syntax: INH-LPBK-STS1:[TID]:<src>:[CTAG];

**parameters:**

lpbk\_id = IOM-{1 . . . 17}-STS1-{1 . . . 8} – STS-1 port of DS3/STS-1 IOM

Command Example: INH-LPBK-STS1:: IOM-1-STS-1;

35. Is there another port to inhibit?

If **YES**, then go to [Step 34](#).

If **NO**, then go to [Step 20](#).

36. Prevent remote OC-3 or OC-12 loopbacks by entering the INH-LPBK-OC3 or INH-LPBK-OC12 command.

Command Syntax: INH-LPBK-OC3:[TID]:<src>:[CTAG];

Command Syntax: INH-LPBK-OC12:[TID]:<src>:[CTAG];

**parameters:**

src = IOM-{8|10}-OC3-{1 . . . 4} – OC-3 port of OC IOM  
= IOM-{8|10}-OC12-{1 . . . 4} – OC-12 port of OC IOM

Command Example: INH-LPBK-OC12:: IOM-8-OC12-1;

37. Is there another port to inhibit?

If **YES**, then go to [Step 36](#).

If **NO**, then go to [Step 20](#).

## DLP-560 - SAVE OR RESTORE SYSTEM CONFIGURATION FILE

**SUMMARY:** This procedure describes how to save a copy of the system configuration file both on the System Processor and the user's computer disk. It also provides steps to restore a configuration from the saved file and from the disk of a user's computer. This assumes the configuration is being restored because of a catastrophic failure.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Caution:** Configuration files may not be compatible between different software versions. Contact Telica Technical Services at 888-440-8354 or 508-485-5739 or email [support@telica.com](mailto:support@telica.com) to verify compatibility.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISDN messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 16](#).



**Note:** The backup file is saved on both System Processors and on an external computer.

2. Select your task from the following and go to the listed step.
  - Backup the Plexus 9000 configuration and compress a copy of the configuration ..... [Step 4](#)
  - Restore a saved configuration database ..... [Step 10](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Backup the system configuration by right-clicking the switch name and selecting *Upgrade/Backup/Restore* as shown in [Figure 1](#) or select *Actions* at the top of the screen, select *Switch* and then *Upgrade/Backup/Restore* as shown in [Figure 2](#).

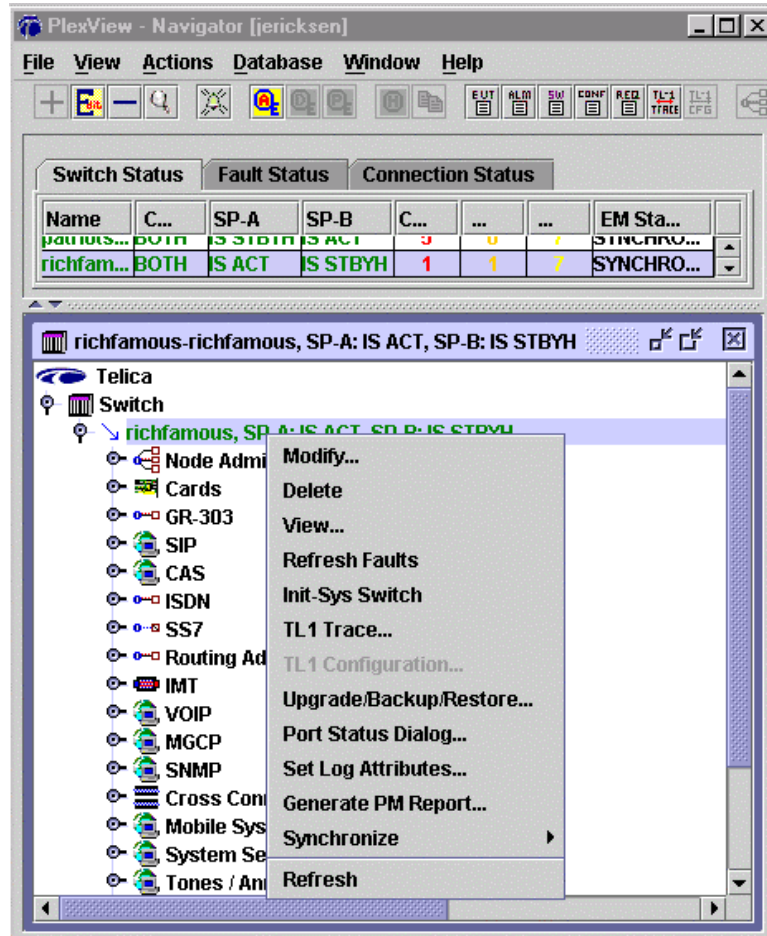


Figure 1. Right-clicking the Switch Name

5. In the resulting screen, select the *Backup/Restore* tab as shown in [Figure 3](#). Select the switch you wish to back up and ensure the *Server username* and *Server password* are correct. Then select *Backup*. When the confirmation screen appears, click *Yes*.



**Note:** The preceding step takes several minutes to complete.



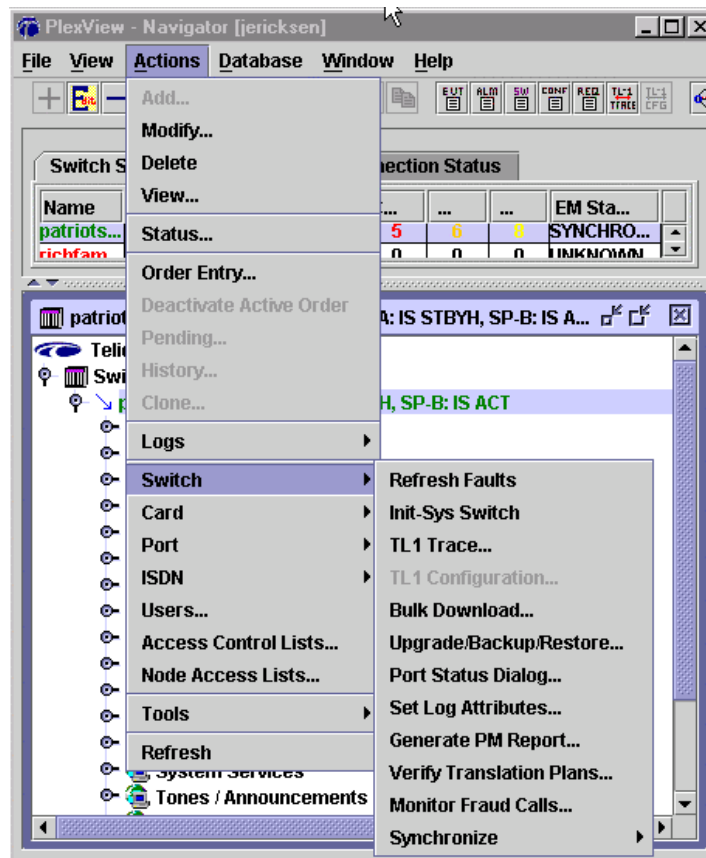


Figure 2. Action Selection

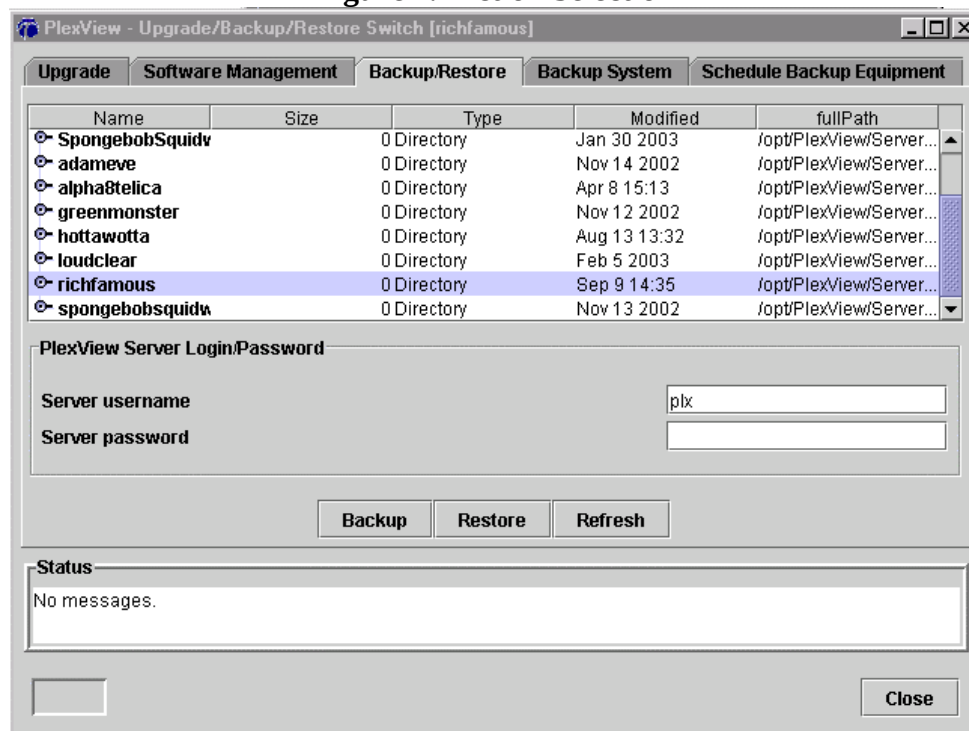


Figure 3. Backup and Restore

6. Was the backup file saved successfully?  
If **YES**, then go to [Step 9](#).  
If **NO**, then continue to the next step.
7. Right-click the switch name and select *Upgrade/Backup/Restore* as shown in [Figure 1](#) or select *Actions* at the top of the screen, select *Switch* and then *Upgrade/Backup/Restore* as shown in [Figure 2](#). In the resulting screen, select the *Backup/Restore* tab as shown in [Figure 3](#). Select the switch you wish to back up and ensure the *Server username* and *Server password* are correct. Then select *Backup*. When the confirmation screen appears, click *Yes*.
8. Was the backup file saved successfully this time?  
If **YES**, then continue to the next step.  
If **NO**, please contact Technical Services at 1-888-440-8354

9.  **YOU HAVE COMPLETED THIS PROCEDURE.**

10. Restore the saved configuration file to the Plexus 9000 by right-clicking the switch name and selecting *Upgrade/Backup/Restore* as shown in [Figure 1](#) or select *Actions* at the top of the screen, select *Switch* and then *Upgrade/Backup/Restore* as shown in [Figure 2](#).
11. In the resulting screen, select the *Backup/Restore* tab as shown in [Figure 3](#). Select the switch you wish to back up and ensure the *Server username* and *Server password* are correct. Then select *Restore*. When the confirmation screen appears, click *Yes*.



**Note:** The preceding step takes several minutes to complete.

12. Was the backup file restored successfully?  
If **YES**, then continue to the next step.  
If **NO**, please contact Technical Services at 1-888-440-8354.
13. You will now need to reboot the system. Right-click the switch name and select *Init-Sys Switch*. At the confirmation screen, select *Yes*. See [Figure 4](#).
14. Wait for the System Processor to complete the reboot and initialization. This takes several minutes.

15.  **YOU HAVE COMPLETED THIS PROCEDURE.**

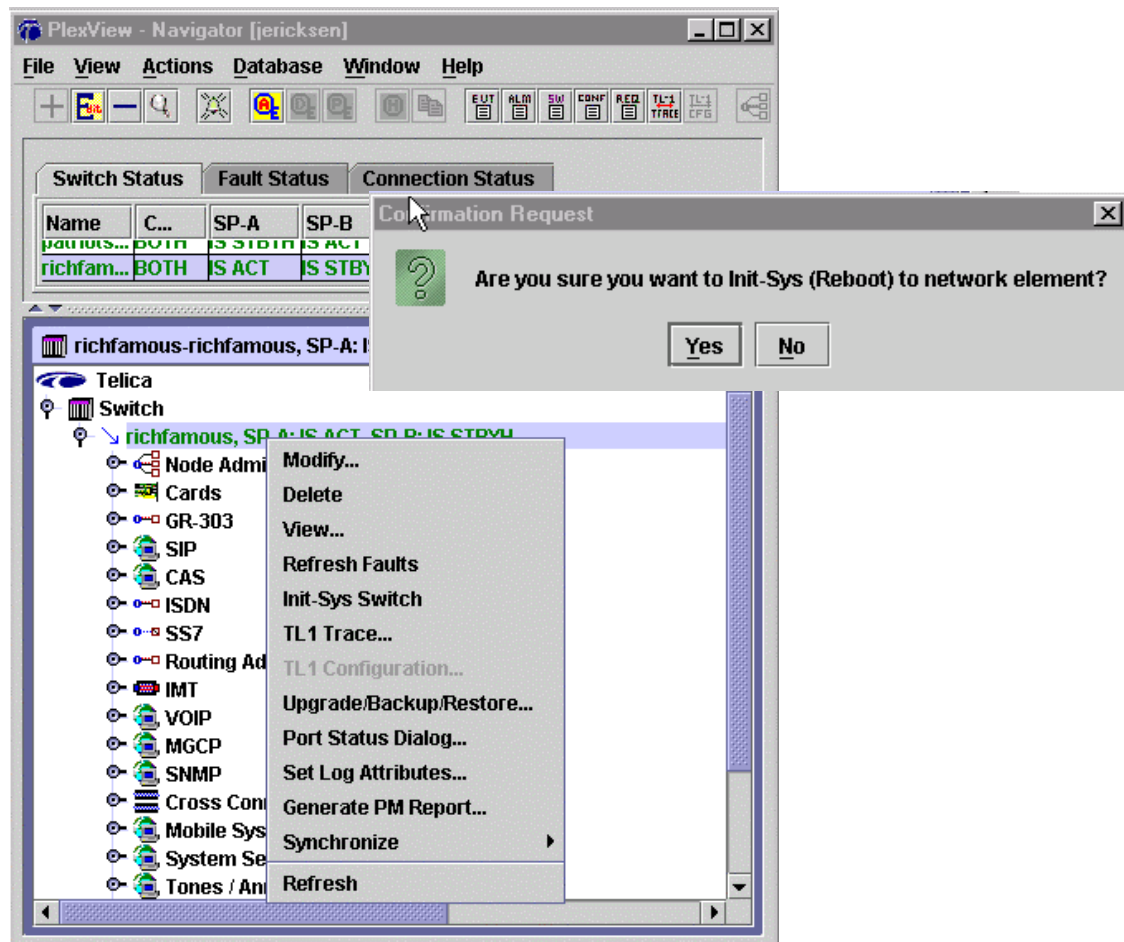


Figure 4. Initializing the System

16. To successfully backup or restore Plexus 9000 configuration data using TL1, the following statements must be true:
- Your UNIX workstation, PC or laptop has Ethernet connectivity to the Plexus 9000.
  - Your UNIX workstation, PC or laptop can act as an FTP server.
  - Your UNIX workstation, PC or laptop has an IP address.
  - The IP addresses of the Plexus 9000 are known. (The IP addresses may be found by entering RTRV-CHASSIS-EQPT::COM TL1 command prompt of the craft interface.)
  - If retrieving or setting IP addresses for the Plexus 9000, valid administrative account and password must be known.

17. Are the IP addresses of the System Processors known?

If **YES** then continue to the next step.

If **NO**, then retrieve chassis equipment information and configure IP addresses if required.

18. Are you logged onto the Plexus 9000?

If **YES** then go to [Step 21](#).

If **NO**, then continue to the next step.

19. Telnet to the IP address of the System Processor and entering **2361** for Port and **VT100** for TermType if required.

Reference: **DLP-504**

20. Log on with the ACT-USER command. The default user name and the password are **telica**.

Command Example: **ACT-USER::telica:::telica;**

Comment: When password is actually entered, it is masked by outputting asterisks (\*) to the screen.



**Note:** Backup file is save on both System Processors and on an external computer.

21. Select your task from the following and go to the listed step.

- Backup the Plexus 9000 configuration and compress a copy of the configuration ..... [Step 24](#)
- Restore a saved configuration database ..... [Step 31](#)
- Finished, no other task in the above list..... continue to the next step.

22. Do you want to continue your Telnet session?

If **YES**, then continue to the next step.

If **NO**, then cancel the session using the CANC-USER command.

Command Example: **CANC-USER;**

23.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The EXEC - BACKUP - PLEXUS will do the following:

1. Back up the Plexus configuration.
2. Tar the file using the following file name structure, host's <TID>\_<date>\_<time>.
3. FTP the tar file to the specified destination host/directory.
4. Save a copy of the tar file on both SP-A and SP-B.

24. Backup the system configuration using the EXEC - BACKUP - PLEXUS command.

Command Syntax: EXEC - BACKUP - PLEXUS : [TID] : [<src>] :  
[CTAG] : : desthost>, <username>,  
<password>, <destdir>,  
[<suppressoutput>], [<tmout>];

**Input Parameters:**

|                |                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| destHost       | = {ANSI character string} Identifies the remote host, containing the destination directory identified by <i>destDir</i> , for backing up the Plexus configuration data.                                       |
| username       | = {alphanumeric string} - Identifies a valid user name for the host identified by <i>destHost</i> .                                                                                                           |
| password       | = {alphanumeric string} - Identifies a valid password for the host identified by <i>destHost</i> .                                                                                                            |
| destDir        | = {ANSI character string} - Identifies the destination directory for the backup file. The value of <i>destdir</i> starts with a "/" unless the destination directory is within the current working directory. |
| suppressoutput | = {Y N} – Suppress do not suppress the output for the command.                                                                                                                                                |
| tmout          | = {1 . . . 30 . . . 120} - Time out interval in minutes.                                                                                                                                                      |

Command Example: **EXEC - BACKUP - PLEXUS : : COM : : 196.10.20.30, anonymous, anon, /FTPRoot;**



**Note:** The preceding step takes several minutes to complete.

25. Verify that the backup file was saved on the computer identified as "desthost." The file name is in the format of <TID>\_<date>\_<time> (i.e., telica\_20031025\_1058).
26. Was the backup file saved on the computer identified as "desthost"?

If **YES**, then go to [Step 30](#).

If **NO**, then continue to the next step.

27. Ensure the desthost address is correct as well as the username and password and repeat backing up the system configuration using the EXEC-BACKUP-PLEXUS command. Refer to [Step 24](#) for parameter descriptions.

Command Syntax: EXEC-BACKUP-PLEXUS:[TID]:[COM]:[CTAG]::  
<destHost>,<username>,<password>,<destDir>,<suppressoutput>,<tmout>;

Command Example: EXEC-BACKUP-PLEXUS::COM::196.10.20.30,  
anonymous,anon,/FTPRoot;

28. Verify that the backup file was saved on the computer identified as “desthost.” The file name is in the format of <TID>\_<date>\_<time> (i.e., telica\_20011025\_1058).
29. Was the command successful?

If **YES**, then continue to the next step.

If **NO**, please contact Technical Services at 1-888-440-8354

30.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**Note:** The EXEC-RESTORE-PLEXUS command will do the following:

1. FTP the backup tar file from the specified host/directory to Plexus 9000 if a remote computer is specified as the <srchost>. If the <srchost> is set to “localhost” or specifies the System Processor IP Address, then the local (System Processor) saved file will be used. In this case, the <srcPath> can be specified as /localbackup (soft link to latest backup saved file).
2. Extract the tar file contents.
3. Set the appropriate Flags on the System Processors. The Restore will actually be performed following the System Reboot.



31. Is the configuration backup located on your computer?

If **YES**, then continue to the next step.

If **NO**, obtain the configuration backup file and copy it to your PC before continuing.

32. Restore the saved configuration file from your computer to the Plexus 9000 using the EXEC-RESTORE-PLEXUS command.

Command Syntax: EXEC-RESTORE-PLEXUS: [TID]: [COM]:  
[CTAG]: :<srchost>, <username>,  
<password>, <srcPath>,  
[<suppressoutput>], [<tmout>];

**Input Parameters:**

srchost = {ANSI character string} Identifies the computer or the local System Processor containing the backup file, for retrieving the Plexus configuration data, identified in *srcTarpath*.

username = {alphanumeric string} - Identifies a valid user name for the host identified by *srchost*.

password = {alphanumeric string} - Identifies a valid password for the host identified by *srchost*.

srcPath = {ANSI character string} – Identifies the path to the backup file for the Plexus configuration data. The value of *srcPath* starts with a “/” unless the destination directory is within the current working directory. *./localbackup* can be specified if you choose a restore from the locally save file.

suppressoutput = {Y|N} – Suppress|do not suppress the output for the command.

tmout = {1 . . . 30 . . . 120} - Time out interval in minutes.

Command Example: **EXEC-RESTORE-PLEXUS: :COM: : :196.10.20.30  
, ericksen,ericksen,/PlexusBackup/  
telica\_20011025\_1058;**

Comment: 1. The remote backup file was saved in the format of  
<TID>\_<date>\_<time> (e.g., telica\_20030111\_1050. The date  
is in the format YYYYMMDD.

Comment: 2. The local backup file was saved on the local System Processor in  
the format of *dbBackup\_<Release.Version>\_<date>\_<time>* in  
the localbackups directory of the Telica directory (e.g.,  
/Telica/localbackups/dbBackup\_3.8\_20030701\_1712).



**Note:** The preceding step takes several minutes to complete.

33. Was the command was successful?

If **YES**, then continue to the next step.

If **NO**, please contact Technical Services at 1-888-440-8354.

34. Wait for the Completion Event message from TL1 Agent (10-20 seconds) and then reboot the system using the **INIT-SYS** command.

Command Example: **INIT-SYS:telica::::10;**

Comment: This command will reboot the system and stop the Telnet session.

35. Wait for the System Processor to complete the reboot and initialization. This takes several minutes.

36.  **YOU HAVE COMPLETED THIS PROCEDURE.**



## DLP-561 - PROVISION PM DAY

**SUMMARY:** This procedure provides steps to allow/inhibit performance monitoring, schedule/retrieve performance monitoring, and set/retrieve performance monitoring day.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** The ALW-PMREPT, INH-PMREPT, SCHED-PMREPT and RTRV-PMSCHED commands are not available in some versions of system software (i.e., 3.8)

1. The following information is required in order to complete this procedure:
  - Start time of data collection period
  - Initial values of registers and counters
  - Desired threshold levels
2. Select your task from the following and go to the indicated step.
  - Provision start time PM data collection ..... [Step 4](#)
  - Check or retrieve start time PM period ..... [Step 5](#)
  - Finished, no other task in the above list ..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Provision the current start time of the daily performance monitoring data collection period using the SET-PMDAY command.

Command Syntax: SET-PMDAY: [TID] :: [CTAG] :: <HourOfDay>;

**parameters:**

HourOfDay = {0 . . . 23} - Start time of the daily data collection period.

Command Example: SET-PMDAY: :: :: 0;

5. Verify the start time of performance monitoring collection period using the RTRV-PMDAY command. Refer to [Step 4](#) for parameter descriptions.

Command Syntax: RTRV-PMDAY:[TID]::[CTAG];

Command Example: RTRV-PMDAY;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<HourOfDay>"
;
```

**Output Example:**

```
Telica 2001-04-20 14-30-00
M 001 COMPLD
 "0"
/* RTRV-PMDAY */
;
```

6. Do you need to change the collection period start time?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



**Note:** The ALW-PMREPT, INH-PMREPT, SCHED-PMREPT and RTRV-PMSCHED commands are not available in some versions of system software (i.e., 3.8)

## DLP-568 - RETRIEVE ALARMS OR CONDITIONS

**SUMMARY:** This procedure provides steps to retrieve alarms or conditions.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize T1 registers?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 11](#).

2. Log into the EMS if you are not already logged on.
3. Select your task from the following and go to the indicated step.
  - Retrieve alarms..... [Step 5](#)
  - Retrieve conditions..... [Step 9](#)
  - Finished, no other task in the above list..... continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Select the switch for which you will be troubleshooting alarms.
6. In the toolbar, select *Actions*, then *View* and then *Alarms*. Refer to [Figure 1](#).
7. Click the Notification column to sort the alarms from CRITICAL to MINOR or click Alarm ID to sort by AID.

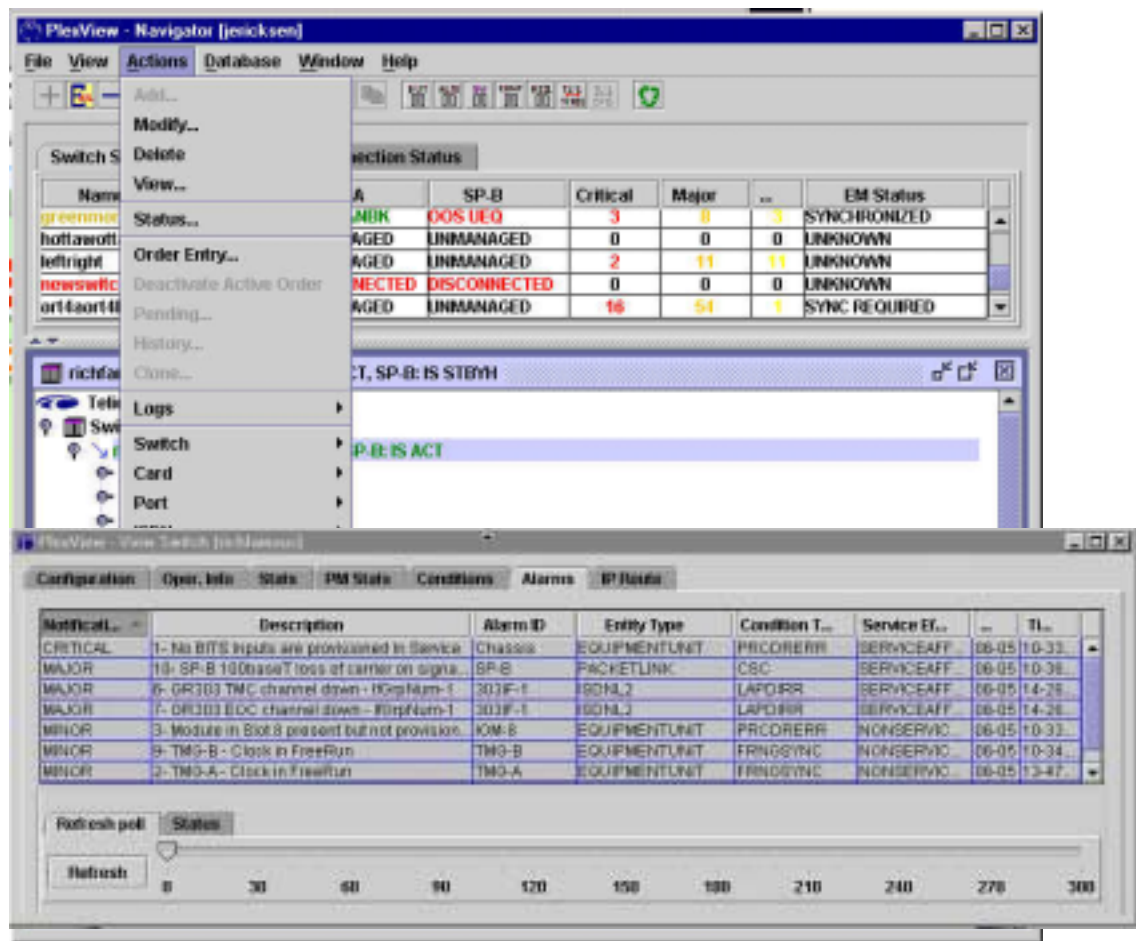


Figure 1. Retrieving Alarms

8. Do you want to retrieve alarms again?
- If YES, then go to Step 5.  
If NO, then go to Step 3.
9. Retrieve conditions. Double-click Switch, right-click Switch name in the main pane and select View. Select and click the Conditions tab at the top of the pane. See Figure 2.
10. Do you want to check conditions again?
- If YES, then go to Step 9.  
If NO, then go to Step 3.

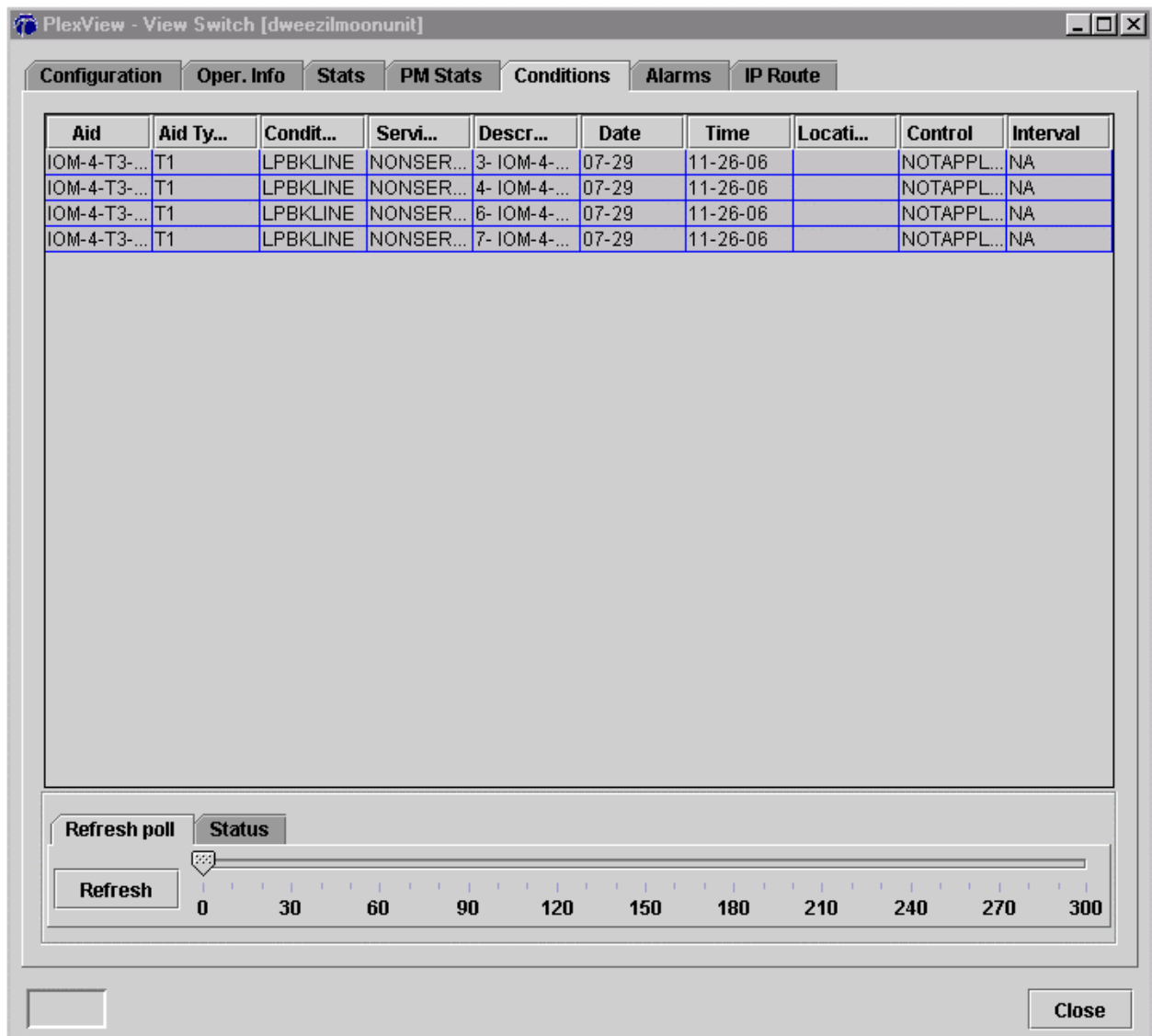


Figure 2. Switch Conditions

11. If not already logged into the Plexus, log on using the ACT-USER command.  
Reference: **DLP-504**
12. Select your task from the following and go to the indicated step.
  - Retrieve alarms..... [Step 14](#)
  - Retrieve conditions..... [Step 16](#)
  - Finished, no other task in the above list..... continue to the next step.
13.  **YOU HAVE COMPLETED THIS PROCEDURE.**

14. Retrieve alarms using the RTRV-ALM command.

Command Syntax: RTRV-ALM-<ReptAid>:[TID]:[<alm\_id>]:  
[CTAG]::[NTFCNCDE=<ntfcncde>],  
[CONDTYPE=<condtype>],[SRVEFF=<srveff>],  
[OCRDAT=<ocrdat>],[OCRTM=<ocrtm>],  
[DESC=<desc>];

**parameters:**

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ReptAid  | Identifies entity within the Plexus from which to retrieve alarms.<br>= ALL - Designates the Plexus 9000 and all entities within it<br>= COM -Common – designates the Plexus 9000 as a discreet entity<br>= E1<br>= ENET<br>= EQPT - Equipment – designates major assemblies other than IOMs<br>= ISDNL2 – ISDN Level 2<br>= ISDNL3 – ISDN Level 3<br>= LINE<br>= LINK<br>= OC – OC IOM<br>= PLK – Packet Link<br>= SLK – Signaling Link<br>= STS – STS<br>= T0 – DS0<br>= T1 - DS1<br>= T3 - DS3<br>= TRK – Trunk |
| alm_id   | = COM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ntfcncde | Notification code of the event that caused the condition to be reported.<br>= CL - Cleared.<br>= CR - Critical<br>= MJ - Major<br>= MN - Minor<br>= NA - Not Alarmed<br>= Null equivalent to ALL                                                                                                                                                                                                                                                                                                                   |
| condtype | = {alphanumeric string} - Condition type for an alarm or a reported event. A null value is equivalent to "ALL"; that is, all values configured in the system for the command will be returned.                                                                                                                                                                                                                                                                                                                     |
| srveff   | = SA - Service-affecting condition.<br>= NSA - Non-service-affecting condition<br>= A null value is equivalent to "ALL"; that is, all values configured in the system for the command will be returned.                                                                                                                                                                                                                                                                                                            |

ocrdat = {1-12}-{1-31} = {month}-{day of month} - Date when the specific event or violation occurred.  
= A null value is equivalent to "ALL"; that is, all dates on which events or violations occurred will be returned.

ocrtm = {0-23}-{0-59}-{0-59} = {hour}-{minute}-{second} - Time  
= {0-23}-{0-59} = {hour}-{minute} - Time  
= A null value is equivalent to "ALL"; that is, all times on which events or violations occurred will be returned.

desc = {alphanumeric string} - Alarm condition description.  
= A null value is equivalent to "ALL"; that is, all descriptions for the command will be returned.

almid = Used in output in some software versions (i.e., 3.8). Is the alarm identification number of the alarm.

Command Example: RTRV-ALM-COM::::NTFCNCDE=MJ;

#### Output Formats:

```
SID DATE TIME
M CTAG COMPLD
 "<alm_id>,<entitytype>:<ntfcncde>,<condtype>,<srveff>,<ocrdat>,<ocrtm>,<desc>,<almid>"
;
```

#### Output Examples:

```
telica 2003-05-03 14:37:49
M 0 COMPLD
 "IOM-3-PORT-1,T1:MJ,LOS,SA,05-03,18-17-10,
\"4- IOM-3-PORT-1 Loss of Signal\",171"
 "ISDNIF-501-LNK-501,ISDNL2:MN,LAPDIRR,NSA,
05-03,18-17-43,\"6- LAPD - Link down - IntfcId 501
linkId 501 on IOM-3-PORT-1\",567"
 "SP-A,PLK:MN,AMATLINK,NSA,05-04,07-49-03,\
"1- BILLING - SP-A connection failed -
noInitialConnection\",684"
 /* RTRV-ALM-ALL */
;
```

15. Do you want to retrieve other alarms?

If **YES**, then go to [Step 14](#).

If **NO**, then go to [Step 12](#).

16. Retrieve conditions using the RTRV-COND command.

Command Syntax: RTRV-COND-<ReptAid>:[TID]:[<src>]:  
[CTAG]:[<typereq>],[<locn>],[<dirn>],  
[<tmper>];

**Input Parameters:**

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ReptAid | Identifies the type of entity within the Plexus 9000 from which to retrieve conditions.<br>= ALL - Designates the Plexus 9000 and all entities within it<br>= COM - Common – designates the Plexus 9000 as a discreet entity<br>= EQPT - Equipment – designates major assemblies other than IOMs<br>= ISDNL2 – ISDN Level 2<br>= ISDNL3 – ISDN Level 3<br>= LINE<br>= LINK<br>= OC – OC IOM<br>= PLK – Packet Link<br>= SLK – Signaling Link<br>= STS1 – STS1<br>= T0 – DS0<br>= T1 - DS1<br>= T3 - DS3<br>= TRK – Trunk |
| src     | = COM - AID for a Plexus 9000.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| typereq | = {alphanumeric string} - Type of condition to be retrieved. A null value defaults to all applicable condition types.                                                                                                                                                                                                                                                                                                                                                                                                    |
| locn    | = FEND - Far end location.<br>= NEND - Near end location.<br>A null value defaults to all applicable locations.                                                                                                                                                                                                                                                                                                                                                                                                          |
| dirn    | The direction relative to the entity in the Plexus 9000. Refer to <a href="#">Table A</a> for values.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tmper   | = 1-DAY - Time interval is exactly one day<br>= {1 . . . 24}-HR - Interval of one to 24 hours (one day)<br>= {1 . . . 1440}-MIN - Interval of one to 1440 minutes (one day)                                                                                                                                                                                                                                                                                                                                              |

Command Example: RTRV-COND-ALL;



### Output Formats:

```
SID DATE TIME
M CTAG COMPLD
 "<aid>,<aidtype>:CONDTYPE=<condtype>,
SRVEFF=<srveff>,MONDAT=<mondat>,OCRTM=<ocrtm>,
LOCN=<locn>,CONTSTATE=<contstate>,INVL=<invl>,
DESC=<desc>"
;
```

### Output Parameters:

|           |                                                                                                                                                                                                                                                                                                                           |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| aid       | = {alphanumeric characters} -AID of specific entity within the Plexus 9000.                                                                                                                                                                                                                                               |
| aidtype   | Entity within the Plexus 9000 from which conditions retrieved.<br>= ALL - Designates the Plexus 9000 and all entities within it<br>= COM - Common – designates the Plexus 9000 as a discreet entity<br>= EQPT - Equipment – designates major assemblies other than IOMs<br>= T1 - DS1 I/O Module<br>= T3 - DS3 I/O Module |
| condtype  | = {alphanumeric characters} – Condition type per GR-833                                                                                                                                                                                                                                                                   |
| srveff    | = SA - Service-affecting condition.<br>= NSA - Non-service-affecting condition                                                                                                                                                                                                                                            |
| mondat    | = {1 . . .12}-{1 . . . 31} - Indicates the monitored date. The format is MM-DD                                                                                                                                                                                                                                            |
| ocrtm     | = {0 . . . 23}-{0 . . . 59}-{0 . . . 59} = {hour}-{minute}-{second}<br>= {0 . . . 23}-{0 . . . 59} = {hour}-{minute}                                                                                                                                                                                                      |
| locn      | = FEND - Far end is location of the storage registers or event counters to be initialized<br>= NEND = Near end is location of the storage registers or event counters to be initialized                                                                                                                                   |
| contstate | = NA = Not applicable (duration is momentary)<br>= OPER - Operated<br>= RLS – Released                                                                                                                                                                                                                                    |
| invl      | = {1 . . . 31}-DAY = Interval in days (up to one month)<br>= {1 . . . 24}-HR = Interval in hours (up to one day)<br>= {1 . . . 1440}-MIN = Interval in minutes (up to one day)                                                                                                                                            |
| desc      | = Alphanumeric characters which describe the alarm condition.                                                                                                                                                                                                                                                             |

**Output Example:**

```
telica 2003-06-04 10:13:52
M 0 COMPLD
"IOM-4-T3-2-PORT-25,T1:CONDTYPE=LPBKLINE,
SRVEFF=NSA,MONDAT=07-29,OCRTM=11-26-06,LOCN=FEND,
CONTSTATE=NA,INVL=NA,DESC=\"3- IOM-4-T3-2-PORT-25 Line
Loopback Up by NEND cmd\"
"IOM-4-T3-2-PORT-26,T1:CONDTYPE=LPBKLINE,
SRVEFF=NSA,MONDAT=07-29,OCRTM=11-26-06,,CONTSTATE=NA,
INVL=NA,DESC=\"4- IOM-4-T3-2-PORT-26 Line Loopback Up
by NEND cmd\"
"IOM-4-T3-2-PORT-27,T1:CONDTYPE=LPBKLINE,
SRVEFF=NSA,MONDAT=07-29,OCRTM=11-26-06,,CONTSTATE=NA,
INVL=NA,DESC=\"6- IOM-4-T3-2-PORT-27 Line Loopback Up
by NEND cmd\"
"IOM-4-T3-2-PORT-28,T1:CONDTYPE=LPBKLINE,
SRVEFF=NSA,MONDAT=07-29,OCRTM=11-26-06,,CONTSTATE=NA,
INVL=NA,DESC=\"7- IOM-4-T3-2-PORT-28 Line Loopback Up
by NEND cmd\"
/* RTRV-COND-ALL */
```

17. Is there another condition to check or retrieve?

If **YES**, then go to [Step 16](#).

If **NO**, then go to [Step 12](#).

**Table A. DIRECTION**

| Direction                                           | Description                           |
|-----------------------------------------------------|---------------------------------------|
| AZ                                                  | Transmit                              |
| BTH                                                 | Both directions                       |
| NA                                                  | Not applicable                        |
| RCV                                                 | Receive direction only                |
| TDTC                                                | Transmit direction toward customer    |
| TDTN                                                | Transmit direction toward network     |
| TRMT                                                | Transmit direction only               |
| ZA                                                  | Receive                               |
| null                                                | Defaults to all applicable directions |
| <b>Note:</b> Currently, RCV is the only valid value |                                       |

T78-A

## DLP-569 - TEST USING THE MONITOR TEST JACKS

**SUMMARY:** This procedure provides the steps necessary to set up and use the monitor jacks on the rear of the System Processor (SP) card. These jacks provide a non-invasive method of connecting test equipment to diagnose system and network problems. Digital monitoring is at the DS0 level only and these DS0s must be on the same IOM. Both SS7 and ISDN cannot be monitored at the same time.

Task jacks are labeled above or below with the designation “DS1 TEST.” On the rear 89-0367 SP module the bantam jacks are labeled J7, J8, J9 and J10 on the left and I, O, I and O on the right. J9 or the second input is not used. On the SP-3 rear module, 89-0407 or 89-0417, only the “I” and “O” labeling is used. “I” is for input and “O” is for output. Both inputs can be used.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - DS0s to be tested (Must be in service.)
  - Placement of DS0 in test signal
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISDN messages?
  - If using **EMS**, then continue to the next step.
  - If using **TL1**, then go to [Step 9](#).
3. To select and configure the test ports, double-click the switch to select it for the main panel and then right-click the switch name. Double-click System Services and then right-click *Test Port*. Select *Add*. See [Figure 1](#).
4. Select the *IOM, Monitor* for Test Port Mode and then click *Ok*.

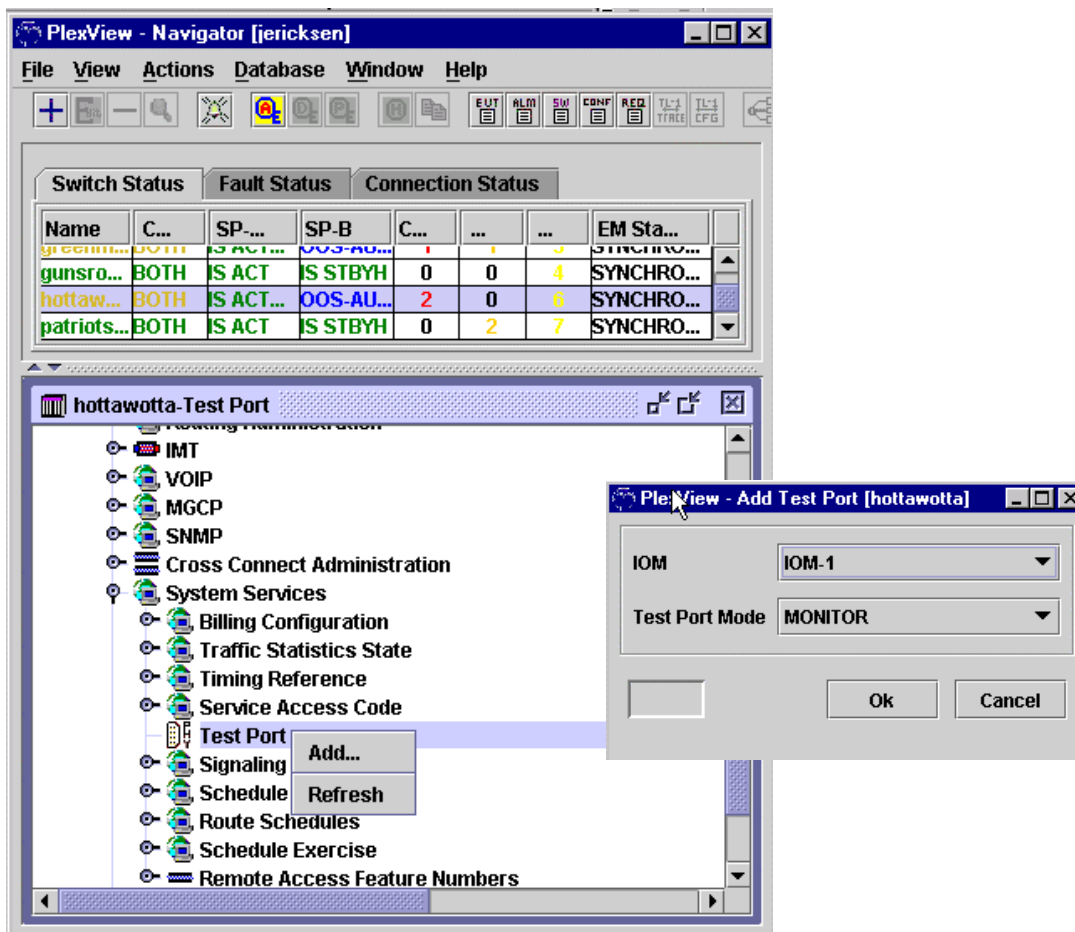


Figure 1. Adding a Test Port

5. Click on *Test Port*. See [Figure 2](#). Is the “Linked to” information correct?  
If **YES**, then go to [Step 7](#).  
If **NO**, then continue to the next step.
6. Right-click on the “Linked to” information and select *Delete*. Then go to [Step 3](#) and repeat the process.

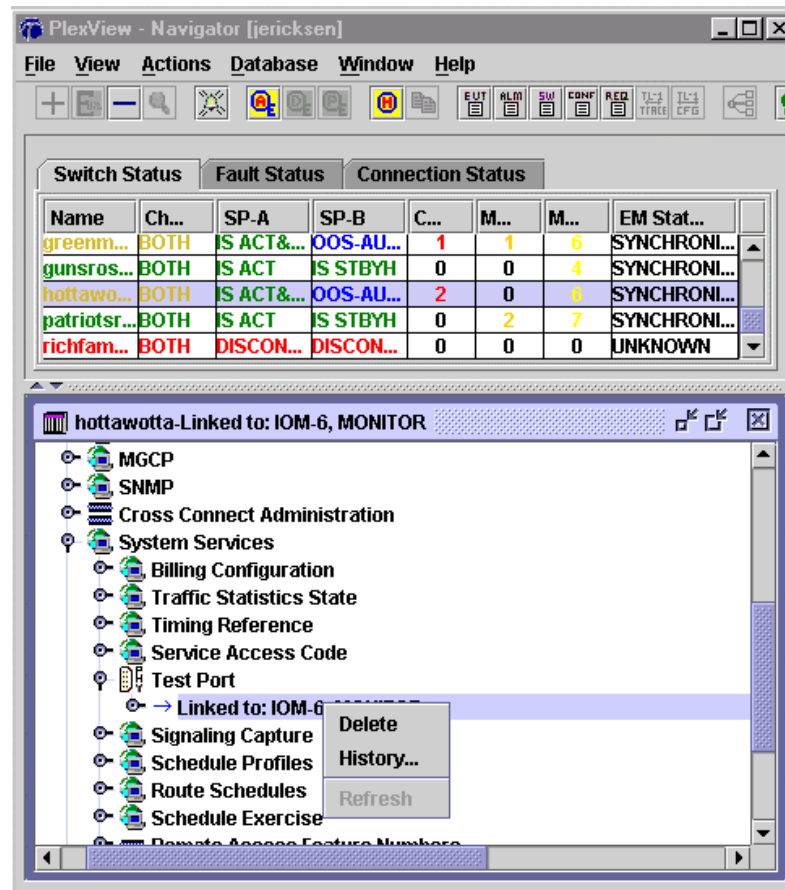


Figure 2. Test Port Link

7. Configure a DS0 (T0) to be monitored. Click the “*Linked to*” line and then right-click *Channel* and select *Add*. On the “Add Test Port Cross Connection” screen, click the *IOM*, then the *Port* to the T0. Click the T0. The selected T0 should now be displayed after “Cross Connect From.” Use the pull-down menu of “Cross Connect To” to select where the T0 will appear on the test port connector on the rear of the chassis. Then click *Apply*.
8. Do you want to add another DS0 to be monitored?
  - If **YES**, then repeat [Step 7](#).
  - If **NO**, then go to [Step 16](#).

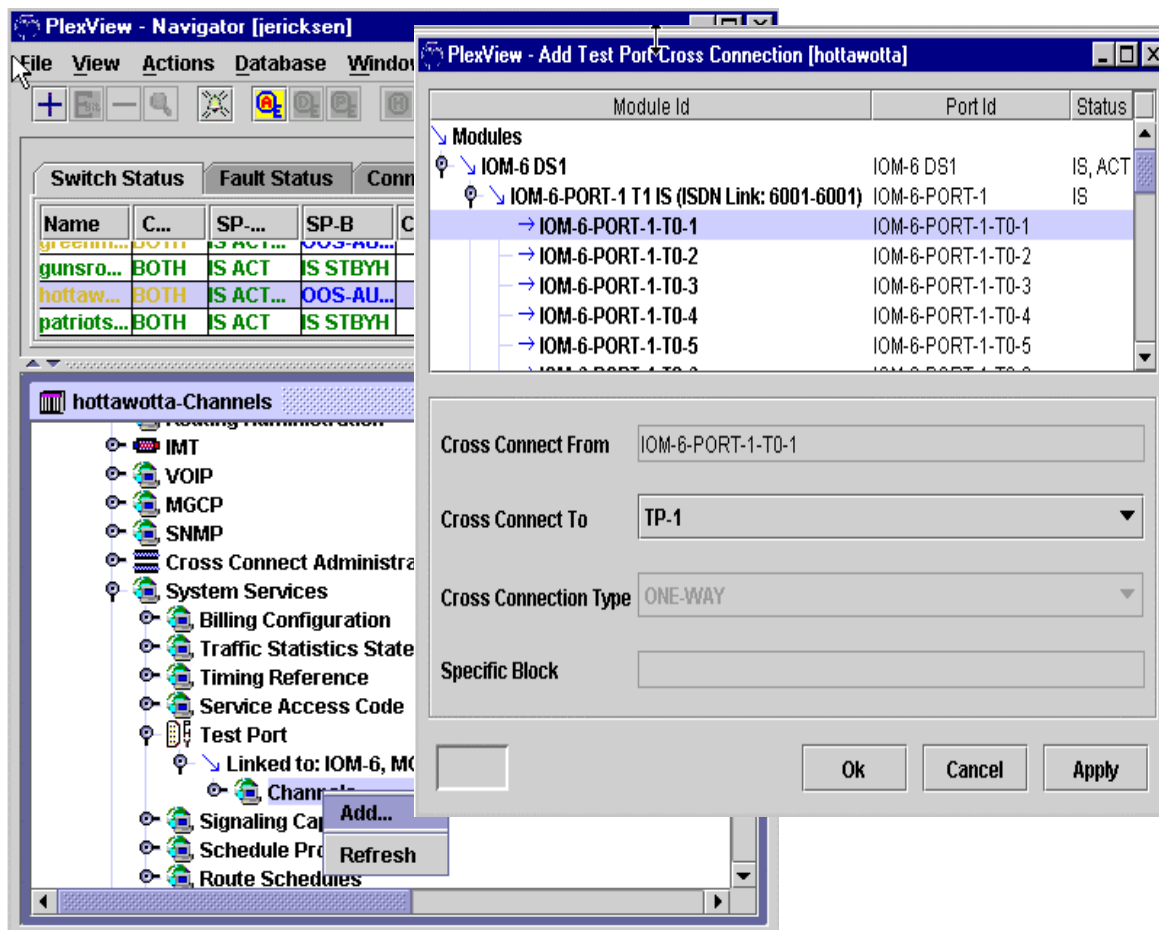


Figure 3. Test Port Channels

9. Select and configure the test ports for operation using the ED-TESTPORT command.

Command Syntax: `ED-TESTPORT:[TID]:[<src>]:[CTAG]::  
<iom>,<tpmonitor>:[<pst>];`

**Input Parameters:**

src = COM - AID of a Plexus 9000.  
iom = IOM-{1 . . . 17} - I/O module to be tested  
tpmonitor = INSERT - Test equipment will use J8 or 10 ("O") to monitor and J7 or J9 ("I") to insert signals. J9 is not used on the 89-0367 rear SP module.  
= MONITOR - Test equipment can use J8 or J10 ("O") to monitor signals.  
pst = IS -Primary state of the test port is In Service  
= OOS -Primary state is Out-of-service. OOS disables alarming for the test port.

Command Example: **ED-TESTPORT::COM::IOM-1, MONITOR:IS;**

Comment: This command designates J10 as the test jack because of the selection *monitor*.

10. Retrieve configuration of test port using the RTRV-TESTPORT command. Refer to [Step 9](#) for output parameters.

Command Syntax: RTRV-TESTPORT:[TID]:[<src>]:[CTAG];

**Input parameter:**

src = COM - AID for a Plexus 9000.  
A null value is equivalent to "ALL".

Command Example: RTRV-TESTPORT;

**Output Format:**

SID DATE TIME  
M CTAG COMPLD  
" <src>:<iom>,<tpMonitor>:<pst>"

**Output Example:**

TID-000 2001-06-20 14-30-00  
M 001 COMPLD  
"COM:IOM-1,MONITOR:IS"  
/\* RTRV-TESTPORT \*/  
;

11. Is configuration of test port correct?

If **YES**, then continue to the next step.  
If **NO**, then go to [Step 9](#) and correct.

12. Configure a DS0 (T0) to be monitored using the ED-CRS-T0 command.

Command Syntax: ED-CRS-T0:[TID]:<t0From>,<t0To>:  
[CTAG]:[<crsBlk>]:[<specBlk>]:[<pst>];

**Input Parameters:**

t0From Identifies the DS0 channel on the I/O module to which the test equipment connects through the test port.  
= IOM-{1 . . . 17}-PORT-{1 . . . 28}-T0-{1 . . . 24}  
= IOM-{1 . . . 17}-STS1-{1-8}-PORT-{1 . . . 28}-T0-{1 . . . 24}  
= IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28}-T0-{1 . . . 24}  
t0To = TP-{1 . . . 24} - Channel number on the test port.  
crsBlk Currently not used, leave blank.  
specBlk Currently not used, leave blank.  
pst = IS -Primary state of the test port is In Service  
= OOS Primary state is Out-of-service. OOS disables connection for the channel.

Command Example: ED-CRS-T0::IOM-1-port-1-t0-24,tp-1:::::  
IS;

Comment: This command places DS0 timeslot 24 of IOM-1's port 1 on timeslot or channel 1 of the signal to be monitored.

13. Do you want to add another DS0 to be monitored?

If **YES**, then repeat [Step 12](#).

If **NO**, then continue to the next step.

14. Retrieve DS0 (T0) cross-connect provisioning using the RTRV-CRS-T0 command.

Command Syntax: RTRV-CRS-T0:[TID]:[<t0From>],[<t0To>]:  
[CTAG];

**Input parameter:**

toFrom = IOM-{1 ... 17}-PORT-{1 ... 28}-T0-{1 ... 24}  
= IOM-{1 ... 17}-STS1-{1-8}-PORT-{1 ... 28}-T0-{1 ... 24}  
= IOM-{1 ... 17}-T3-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24}  
tt0To = TP-{1 ... 24} - Channel number on the test port.

Command Example: RTRV-CRS-T0;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<t0From>,<t0To>:<pst>"
;
```

**Output Example:**

```
TID-000 2001-06-20 14-30-00
M 001 COMPLD
 "COM:IOM-1-PORT-1-T0-24,TP-1:IS"
 /* RTRV-CRS-T0 */
;
```

15. Do you want to make any changes or additions?

If **YES**, then go to [Step 12](#).

If **NO**, then continue to the next step.

16. Connect the DS1 test patch cables to the appropriate monitor jack(s) on the rear System Processor and at the test equipment. Refer to [Figure 4](#) for an illustration of how the jacks are used and to [Figure 5](#) for location of jacks on rear SP cards.

Comment: When monitoring either SP-A or SP-B ports can be used, unless the SP is out-of service. If out-of service the monitor jacks of that SP cannot be used. If injecting a signal, the working SP's jack must be used.



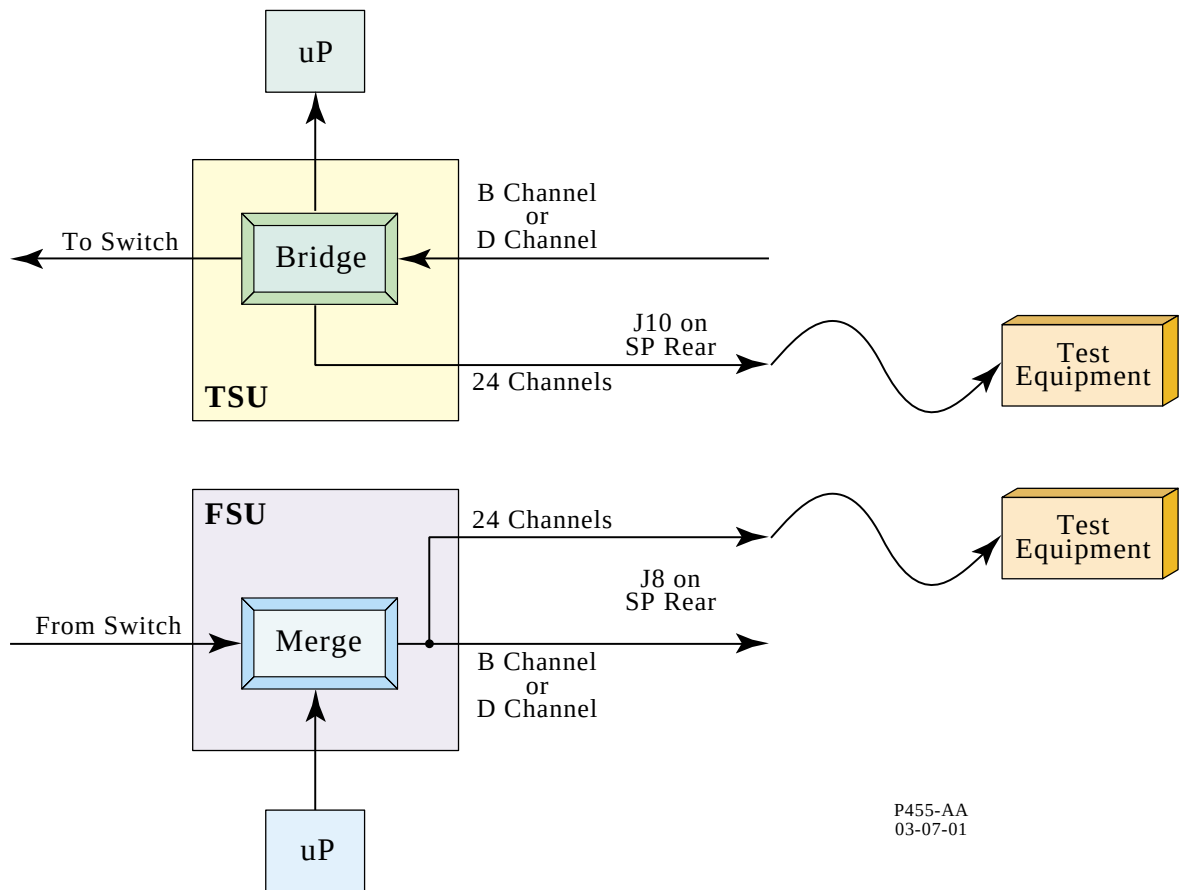


**Figure 4. Monitoring Using the SP Monitor Jacks**

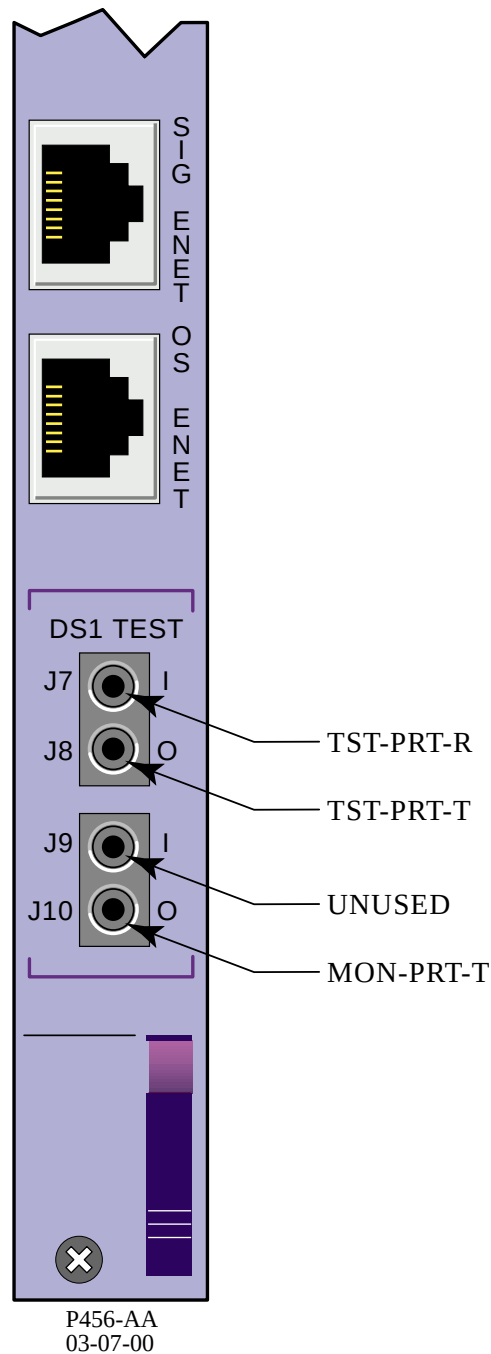


**Figure 5. Test Jacks on SP**

17. Configure the test equipment according to your company's policy for testing. Reference the test equipment's manual.
18. Monitor the desired DS0s.
19.  **YOU HAVE COMPLETED THIS PROCEDURE.**

## DLP-571 - RETRIEVE STATS, PM DATA AND INITIALIZE REGISTERS FOR CALL CONTROL

**SUMMARY:** This procedure provides steps to retrieve statistics and performance monitored data as well as initialize the registers for call control.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - ISDN Interface Number
  - SS7 Point Codes
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.  
If using **TL1**, then go to [Step 11](#).
3. Select your task from the following and go to the indicated step.
  - Retrieve statistics for call control ..... [Step 5](#)
  - Retrieve PM data for call control ..... [Step 7](#)
  - Clear the counters for call control statistics ..... [Step 9](#)
  - Finished, no other task in the above list ..... continue to the next step.
4.  **YOU HAVE COMPLETED THIS PROCEDURE.**
5. Retrieve statistics for call control by right-clicking the switch name in the switch status panel or double-clicking the switch to select it for the main panel and then right-clicking the switch name. Then select *View, Stats* and click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).

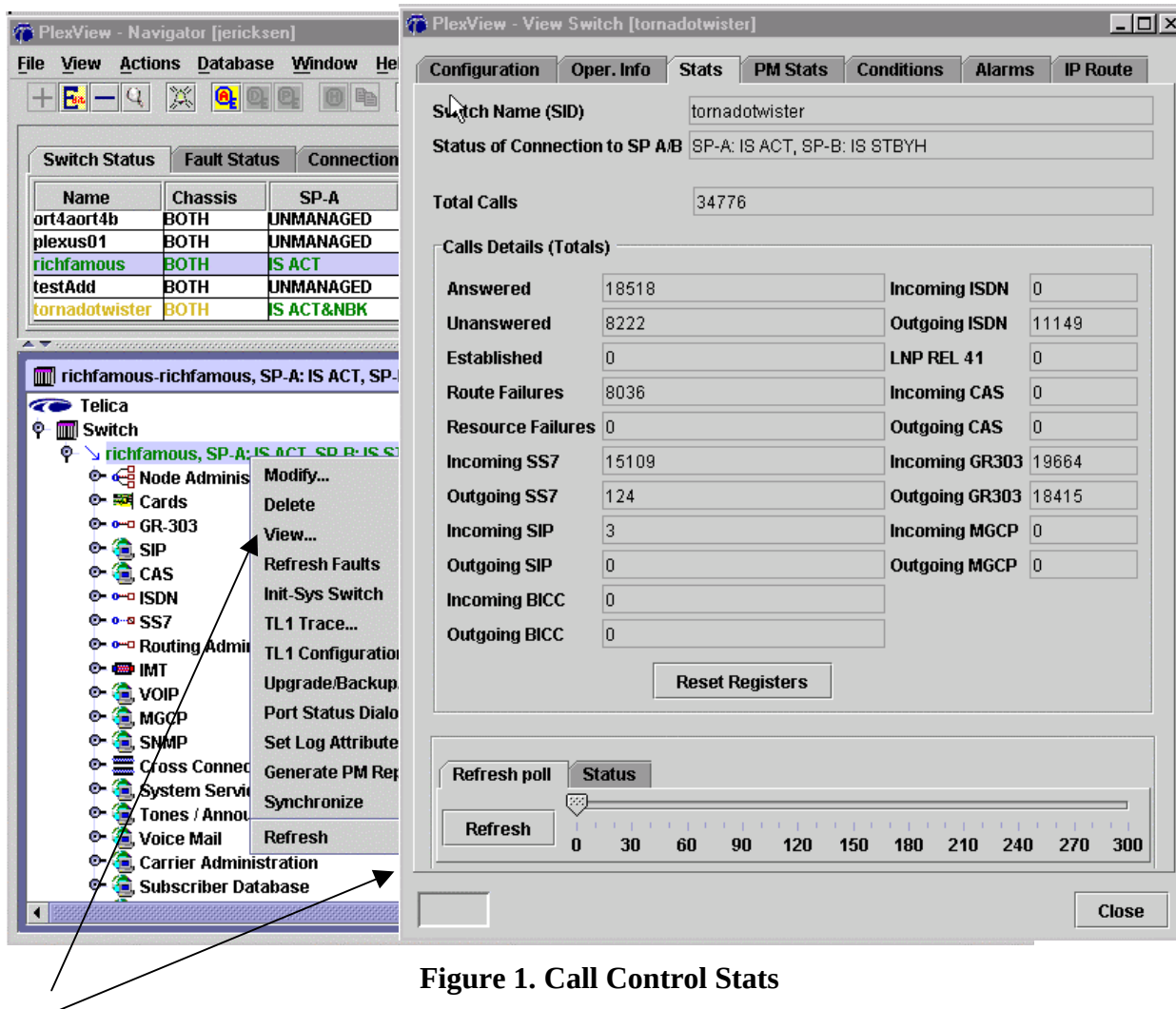


Figure 1. Call Control Stats

**Parameters and Descriptions:**

- Total Calls = {0 . . . 4,294,967,295}- Total of calls processed by a Plexus 9000 since initialization.
- Answered = Total of answered calls processed by a Plexus 9000 since initialization.
- Unanswered = Total of unanswered calls processed by a Plexus 9000 since initialization.
- Established = Total of established calls currently being processed by a Plexus 9000.
- Route Failures = Number of calls processed since initiation that failed due to route unavailability.
- Resource Failures = {0 . . . 4,294,967,295} - Number of calls processed since initiation that failed due to resource unavailability.
- Incoming SS7 = Number of incoming SS7 calls processed by a Plexus 9000 since initialization.

|               |                                                                                         |
|---------------|-----------------------------------------------------------------------------------------|
| Outgoing SS7  | = Number of outgoing SS7 calls processed by a Plexus 9000 since initialization.         |
| Incoming SIP  | = Number of incoming SIP calls processed by a Plexus 9000 since initialization.         |
| Outgoing SIP  | = Number of outgoing SIP calls processed by a Plexus 9000 since initialization.         |
| Incoming BICC | = Number of incoming BICC calls processed by a Plexus 9000 since initialization.        |
| Outgoing BICC | = Number of outgoing BICC calls processed by a Plexus 9000 since initialization.        |
| Incoming ISDN | = Number of incoming ISDN calls processed by a Plexus 9000 since initialization.        |
| Outgoing ISDN | = Number of outgoing ISDN calls processed by a Plexus 9000 since initialization.        |
| LNP REL 41    | = Number of LNP calls that are released with cause code 41 (temporary failure).         |
| Incoming CAS  | = Number of incoming CAS calls processed by a Plexus 9000 since initialization.         |
| Outgoing CAS  | = Number of outgoing CAS calls processed by a Plexus 9000 since initialization.         |
| Incoming GR3  | = Total number of incoming GR303 calls processed by a Plexus 9000 since initialization. |
| Outgoing GR3  | = Number of outgoing GR303 calls processed by a Plexus 9000 since initialization.       |
| Incoming MGCP | = Number of incoming MGCP calls processed by a Plexus 9000 since                        |
| Outgoing MGCP | = Number of outgoing MGCP calls processed by a Plexus 9000 since initialization.        |

6. Do you want retrieve PM data for call control?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

7. Retrieve current and historical performance data for call control by right-clicking the switch name in the switch status panel or double-clicking the switch to select it for the main panel and then right-clicking the switch name. Then select *View* or *Modify*, *PM Stats* and click *CC* and *Refresh* near the bottom of the panel for latest information. See [Figure 2](#).

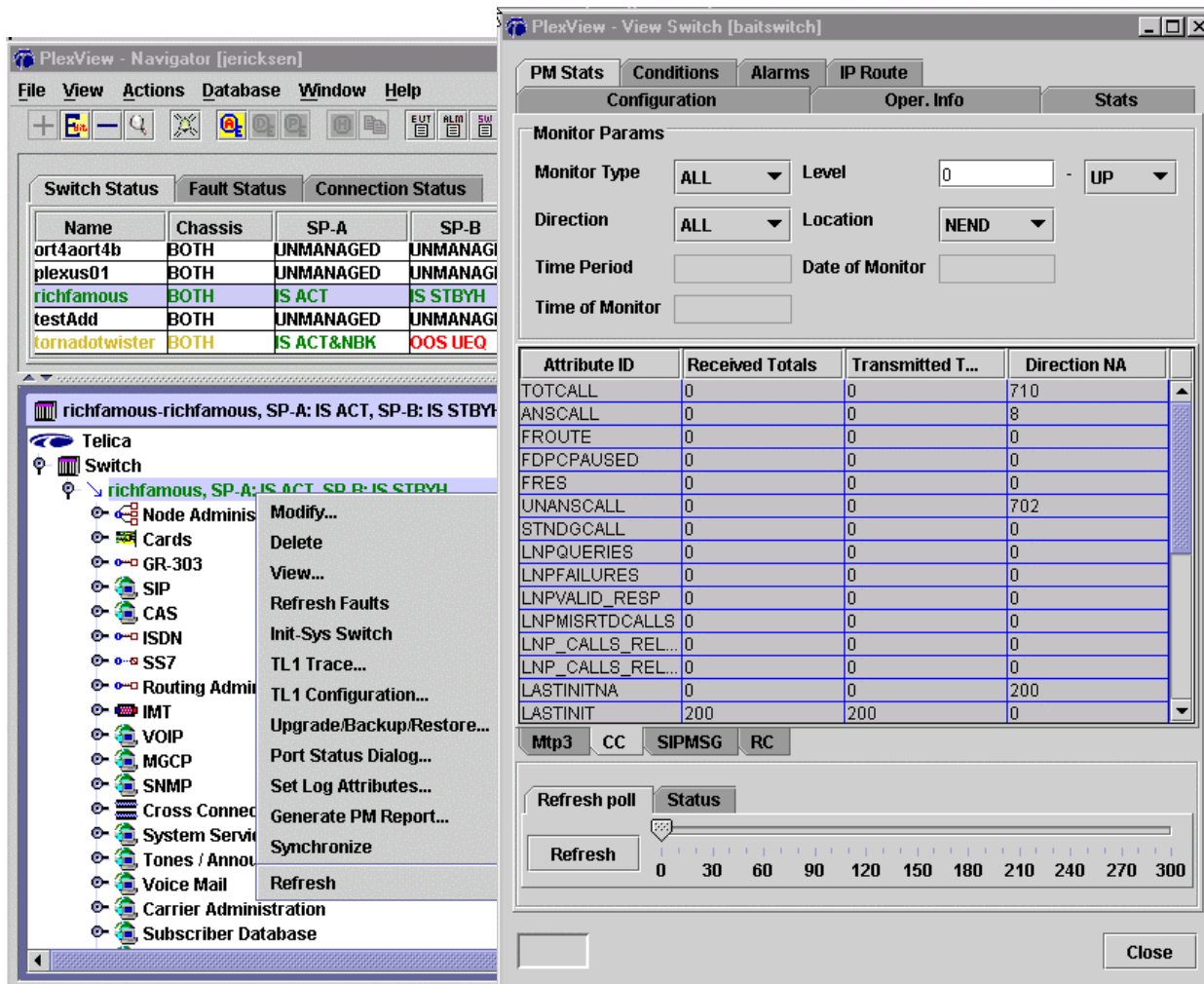


Figure 2. Call Control PM Statistics

**Parameter and Descriptions:**

ANSCALL - Number of answered calls.

FOPCPAUSED - Number of call failures due to paused DPC.

FRES - Number of calls processed since initiation that failed due to resource unavailability.

FROUTE - Number of calls processed since initiation that failed due to route unavailability.

INBICC - Number of incoming BICC calls processed by a Plexus 9000 since initialization.

INCAS - Number of incoming CAS calls.

INGR3 - Number of incoming GR303 calls.

INISDN - Number of incoming ISDN calls.

INMGCP - Number of incoming MGCP calls processed by a Plexus 9000 since initialization.

INSIP - Number of incoming SIP calls.

INSS7 - Number of incoming SS7 calls.

LASTINIT - Number of minutes since initialization of all receive or transmit counters.

LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT).  
LNPFILURES - Number of LNP failures.  
LNPMISRTDCALLS - Number of misrouted calls.  
LNPQUERIES - Number of LNP queries.  
LNPVALID\_RESP - Number of valid LNP responses.  
LNP\_CALLS\_REL\_BY\_DONSWTCH - Number of calls released by other switch.  
LNP\_CALLS\_REL\_BY\_THISSWTCH - Number of calls released by the Plexus 9000.  
OUTBICC - Total number of outgoing BICC calls processed by a Plexus 9000 since initialization.  
OUTCAS - Number of outgoing CAS calls.  
OUTGR3 - Number of outgoing GR303 calls.  
OUTISDN - Number of outgoing ISDN calls.  
OUTGR3 - Total number of outgoing GR303 calls processed by a Plexus 9000 since initialization.  
OUTSIP - Number of outgoing SIP calls.  
OUTSS7 - Number of outgoing SS7 calls.  
STNDGCALL - Number of established (standing) calls.  
TOTCALL - Number of processed calls.  
UNANSCALL - Number of unanswered calls.

8. Do you want to initialize the registers?

If **YES**, then continue to the next step.  
If **NO**, then go to [Step 3](#).

9. Clear the counters for call control statistics. Right-click the switch name in the switch status panel or double-click the switch to select it for the main panel and then right-click the switch name. Then select *Modify, PM Stats* and click *CC*. Make the desired changes. See [Figure 2](#).

**Parameters:**

|                 |                                                                                                                                                                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monitor Type    | = ALL - All statistics counters of the group determined by the <i>dirn</i> parameter.                                                                                                                                                                             |
| Direction       | = ALL - All directions of the data stored in statistics counters.<br>= RCV - Receive direction only of the data stored in statistics counters.<br>= TRMT - Transmit direction only of the data stored in statistics counters.<br>= NA - Direction not applicable. |
| Time Period     | = Not currently used.                                                                                                                                                                                                                                             |
| Time of Monitor | = Not currently used.                                                                                                                                                                                                                                             |
| Level           | = {0 . . . 9999}-{UP DOWN - Monitored value to which the register identified by montype is to be initialized.                                                                                                                                                     |
| Location        | = NEND - Near end counters to be initialized.                                                                                                                                                                                                                     |
| Date of Monitor | = Not currently used.                                                                                                                                                                                                                                             |

10. Do you want to check call control stats?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 3](#).

11. Select your task from the following and go to the indicated step.

- Retrieve statistics for call control ..... [Step 13](#)
- Retrieve PM data for call control ..... [Step 15](#)
- Clear the counters for call control statistics ..... [Step 17](#)
- Finished, no other task in the above list ..... continue to the next step.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Retrieve statistics for call control using the RTRV-STATS-CC command.

Command Syntax: RTRV-STATS-CC:[TID]:[<ccId>]:[CTAG];

Command Example: RTRV-STATS-CC::COM;

**Input Parameters:**

ccId = COM – Aid for Plexus.

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"TOTCLS=<totCalls>,ANSCLS=<ansrCalls>,
UNANSCLS=<unansrCalls>,STNDGCLS=<stndgCalls>,
CFRTEUN=<callsFailedRteUnavail>,
CFRSRUN=<callsFailedRsrUnavail>,INSS7CLS=<inSS7Calls>,
OUTSS7CLS=<outSS7Calls>,INISDNCLS=<inISDNCalls>,
OUTISDNCLS=<outISDNCalls>,LNPCALLSREL41=<lnpCallsRel41>,
INCASCLS=<inCASCalls>,OUTCASCLS=<outCASCalls>,
INGR3CLS=<inGR3Calls>,OUTGR3CLS=<outGR3Calls>,
INSIPCLS=<inSIPCalls>,OUTSIPCLS=<outSIPCalls>,
INBICCCLS=<inBICCCalls>,OUTBICCCLS=<outBICCCalls>,
INMGCPCLS=<inMGCPCalls>,OUTMGCPCLS=<outMGCPCalls>"
;
```

**Output Parameters:**

|             |                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------|
| totCalls    | = {0 . . . 4,294,967,295}- Total of calls processed by a Plexus 9000 since initialization.             |
| AnsrCalls   | = {0 . . . 4,294,967,295} - Total of answered calls processed by a Plexus 9000 since initialization.   |
| UnansrCalls | = {0 . . . 4,294,967,295} - Total of unanswered calls processed by a Plexus 9000 since initialization. |
| StndgCalls  | = {0 . . . 4,294,967,295} - Total of established calls currently being processed by a Plexus 9000.     |



|                       |                                                                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| CallsFailedRteUnavail | = {0 . . . 4,294,967,295} - Total of calls processed by a Plexus 9000 since initialization that failed due to route unavailability.    |
| callsFailedRsrUnavail | = {0 . . . 4,294,967,295} - Total of calls processed by a Plexus 9000 since initialization that failed due to resource unavailability. |
| inSS7Calls            | = {0 . . . 4,294,967,295} - Total of incoming SS7 calls processed by a Plexus 9000 since initialization.                               |
| outSS7Calls           | = {0 . . . 4,294,967,295} - Total of outgoing SS7 calls processed by a Plexus 9000 since initialization.                               |
| InISDNCalls           | = {0 . . . 4,294,967,295} - Total of incoming ISDN calls processed by a Plexus 9000 since initialization.                              |
| OutISDNCalls          | = {0 . . . 4,294,967,295} - Total of outgoing ISDN calls processed by a Plexus 9000 since initialization.                              |
| lnpCallsRel41         | = {0 . . . 4,294,967,295} - Number of LNP calls that are released with cause code 41 (temporary failure).                              |
| inCASCalls            | = {0 . . . 4,294,967,295} - Total number of incoming CAS calls processed by a Plexus 9000 since initialization.                        |
| outCASCalls           | = {0 . . . 4,294,967,295} - Total number of outgoing CAS calls processed by a Plexus 9000 since initialization.                        |
| inGR3Calls            | = {0 . . . 4,294,967,295} - Total number of incoming GR303 calls processed by a Plexus 9000 since initialization.                      |
| outGR3Calls           | = {0 . . . 4,294,967,295} - Total number of outgoing GR303 calls processed by a Plexus 9000 since initialization.                      |
| inSIPCalls            | = {0 . . . 4,294,967,295} - Total number of incoming SIP calls processed by a Plexus 9000 since initialization.                        |
| outSIPCalls           | = {0 . . . 4,294,967,295} - Total number of outgoing SIP calls processed by a Plexus 9000 since initialization.                        |
| inBICCCalls           | = {0 . . . 4,294,967,295} - Total number of incoming BICC calls processed by a Plexus 9000 since initialization.                       |
| outBICCCalls          | = {0 . . . 4,294,967,295} - Total number of outgoing BICC calls processed by a Plexus 9000 since initialization.                       |
| inMGCPCalls           | = {0 . . . 4,294,967,295} - Total number of incoming MGCP calls processed by a Plexus 9000 since initialization.                       |
| outMGCPCalls          | = {0 . . . 4,294,967,295} - Total number of outgoing MGCP calls processed by a Plexus 9000 since initialization.                       |

**Output Example:**

```
telica 2001-02-16 14:37:49
M 0 COMPLD
 "TOTCLS=41836,ANSCLS=41836,UNANSCLS=0,STNDGCLS=151,
 CFRTEUN=0,CFRSRUN=0,INSS7CLS=41836,OUTSS7CLS=0,INISDNCLS=0,
 OUTISDNCLS=41836,LNPCALLSREL41=0,INCASCLS=0,OUTCASCLS=0,
 INGR3CLS=0,OUTGR3CLS=0,INSIPCLS=0,OUTSIPCLS=0,INBICCCCLS=0,
 OUTBICCCCLS=0,INMGCPCLS=0,OUTMGCPCLS=0"
/* RTRV-STATS-CC */
```

14. Do you want retrieve PM data for call control?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

15. Retrieve current and historical performance data for call control in the Plexus 9000 using the RTRV-PM-CC command

Command Syntax: RTRV-PM-CC:[TID]:[<src>]:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>;

**Input Parameters:**

src = COM - AID for the Plexus 9000.  
montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
monlev = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.  
locn = NEND - Near end counters to be initialized.  
dirn = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-CC:::::UPDSTSTHRSHLD;

**Output Format:**

```
 SID DATE TIME
M CTAG COMPLD
 "<src>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

ssrc = COM - AID for the Plexus 9000.  
montype = ALL - All types.  
= ANSCALL - Number of answered calls.  
= FDPCPAUSED - Number of call failures due to paused DPC.

- = FRES - Number of calls processed since initiation that failed due to resource unavailability.
- = FROUTE - Number of calls processed since initiation that failed due to route unavailability.
- = INBICC - Number of incoming BICC calls.
- = INCAS - Number of incoming CAS calls.
- = INGR3 - Number of incoming GR303 calls.
- = INISDN - Number of incoming ISDN calls.
- = INMGCP - Number of incoming MGCP calls.
- = INSIP - Number of incoming SIP calls.
- = INSS7 - Number of incoming SS7 calls.
- = LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT).
- = LASTINITRCV - Number of minutes since initialization of all RCV (receive) counters.
- = LASTINITTRMT - Number of minutes since initialization of all TRMT (transmit) counters.
- = LNP\_CALLS\_REL\_BY\_DONSWTCH - Number of calls released by other switch.
- = LNP\_CALLS\_REL\_BY\_THISSWTCH - Number of calls released by the Plexus 9000.
- = LNPFAILURES - Number of LNP failures.
- = LNPMISRTDCALLS - Number of misrouted calls.
- = LNPQUERIES - Number of LNP queries.
- = LNPVALID\_RESP - Number of valid LNP responses.
- = OUTBICC - Number of outgoing BICC calls.
- = OUTCAS - Number of outgoing CAS calls.
- = OUTGR3 - Number of outgoing GR303 calls.
- = OUTISDN - Number of outgoing ISDN calls.
- = OUTMGCP - Number of outgoing MGCP calls.
- = OUTSIP - Number of outgoing SIP calls.
- = OUTSS7 - Number of outgoing SS7 calls.
- = STNDGCALL - Number of established (standing) calls.
- = TOTCALL - Number of processed calls.
- = UNANSCALL - Number of unanswered calls.
- monval = {0 – 4,294,967,295} - Monitored value.
- monlev = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.
- locn = NEND - Near end counters to be initialized.
- dirn = ALL - All directions of the data stored in statistics counters.
- = NA - Direction not applicable.
- = RCV - Receive direction only of the data stored in statistics counters.
- = TRMT - Transmit direction only of the data stored in statistics counters.

**Output Example:**

```
telica 2002-09-25 14:37:49
M 0 COMPLD
"COM:TOTCALL,42725"
"COM:ANSCALL,42724"
"COM:FROUTE,0"
"COM:FDPCPAUSED,0"
"COM:FRES,0"
"COM:UNANSCALL,1"
"COM:STNDGCALL,150"
"COM:LNPQUERIES,0"
"COM:LNPFAILURES,0"
"COM:LNPVALID_RESP,0"
"COM:LNPMISRTDCALLS,0"
"COM:LNP_CALLS_REL_BY_DONSWTCH,0"
"COM:LNP_CALLS_REL_BY_THISSWTCH,0"
"COM:LASTINITNA,150"
"COM:LASTINITRCV,150"
"COM:LASTINITTRMT,150"
"COM:OUTSS7,0"
"COM:INSS7,42725"
"COM:OUTGR3,0"
"COM:INGR3,0"
"COM:OUTSIP,0"
"COM:INSIP,0"
"COM:OUTBICC,0"
/* RTRV-PM-CC */
;
```

16. Do you want to initialize the registers?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

17. Clear the counters for call control statistics using the **INIT-REG-CC** command.

Command Syntax: **INIT-REG-CC:[TID]:[<src>]:[CTAG]::**  
**<montype>,[<monval>],[<locn>],[<dirn>];**

**Input Parameters:**

|         |                                                                                                                                                                       |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| src     | = COM - AID for the Plexus 9000.                                                                                                                                      |
| montype | = ALL - All statistics counters of the group determined by the <i>dirn</i> parameter.                                                                                 |
| monval  | = {0 . . . 4,294,967,295} - Value to which the counters identified by <i>montype</i> are to be initialized. The value is "0" if the value of <i>montype</i> is "ALL". |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                                                                                  |
| dirn    | = <b>ALL</b> - All directions of the data stored in statistics counters.                                                                                              |
|         | = <b>NA</b> - Direction not applicable.                                                                                                                               |
|         | = <b>RCV</b> - Receive direction only of the data stored in statistics counters.                                                                                      |
|         | = <b>TRMT</b> - Transmit direction only of the data stored in statistics counters.                                                                                    |

Command Example: INIT-REG-CC:::::ALL;

**18.** Do you want to check call control stats?

If **YES**, then go to [Step13](#).

If **NO**, then go to [Step 11](#).

**NOTES:**

## DLP-595 - EDIT STATES OF ISDN B CHANNEL, INTERFACE, SS7 LINK SET OR SIGNALING LINK

**SUMMARY:** This procedure provides steps to edit the states of the ISDN B channel, ISDN interface, link set or signaling link.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** The ED-STATE-ISDNIF command may not be available with some versions of system software.

1. The following information is required in order to complete this procedure:
  - ISDN interfaces, links and B channels
  - SS7 link set ID
  - SS7 signal link ID
2. Select your task from the following and go to the indicated step.
  - Edit state of ISDN B channel ..... [Step 4](#)
  - Edit state of ISDN interface ..... [Step 6](#)
  - Edit state of link set..... [Step 8](#)
  - Edit state of signaling link..... [Step 10](#)
  - Finished, no other task in the above list..... continue to the next Step

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Provision state of ISDN B channel using the ED-STATE-ISDNBCHAN command.

Command Syntax: ED-STATE-ISDNBCHAN:[TID]:<isdnChanId>:  
[CTAG]::<endChanNum>,<chanAction>;

**Input Parameters:**

isdnChanId = {1 ... 32767}-{1 ... 32767}-{1 ... 24} - ISDN B channel in format of {interface}-{link}-{channel}.

endChanNum = {1 ... 24} - End of the B channel number range.

chanAction = CHAN-ENB - Enable the ISDN B channel.  
= CHAN-RESET - Reset the ISDN B channel.  
= CHANFORCE-DIS - Forcefully disconnect from the ISDN B channel.

Command Example: ED-STATE-ISDNBCHAN::7001-7001-1:::1,  
CHAN-ENB;

5. Do you need to provision the state of another ISDN B channel?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



**Note:** The ED-STATE-ISDNIF command may not be available with some versions of system software.

6. Place an ISDN interface in or out of service using the ED-STATE-ISDNIF command.

Command Syntax: ED-STATE-ISDNIF:[TID]:<isdnIfId>:  
[CTAG]::<primaryStateIn>;

**Input Parameters:**

isdnIfId = {1 ... 32767} - Identifies the ISDN interface.

PrimaryStateIn = IS – Primary State is In-Service  
= OOS – Primary State is Out-Of-Service, implied OOS-MA  
(Out-Of-Service for Management)

Command Example: ED-STATE-ISDNIF::14:::IS;

7. Is there another interface to place in or out of service?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

8. Place a link set in or out of service using the ED-STATE-LSET command.

Command Syntax: ED-STATE-LSET:[TID]:<lsetId>:[CTAG]::  
<pst>;

**parameters:**

lsetId = {1 ... 20} - ID of the link set.

pst = IS - Primary state of a signaling link is In-Service.  
= OOS - Primary state of a signaling link is Out-Of-Service.

Command Example: ED-STATE-LSET::1:::IS;



9. Is there another link set to place in or out of service?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).

10. Place a signaling link in or out of service using the ED-STATE-SLK command.

Command Syntax: ED-STATE-SLK: [TID]:<ss7LnkId>:[CTAG]::  
<pst>;

**parameters:**

ss7LnkId = {1 . . . 40} - ID of the signaling link.  
pst = IS - Primary state of a signaling link is In-Service.  
= OOS - Primary state of a signaling link is Out-Of-Service.  
= INH - Primary state of a signaling link Inhibited.  
= UNINH - Primary state of a signaling link Uninhibited.

Command Example: ED-STATE-SLK::1:::IS;

11. Is there another signaling link to place in or out of service?

If **YES**, then go to [Step 10](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-596 - RETRIEVE STATUS OF SS7 LINK SET, RETRIEVE PM DATA OF LINKSET OR INITIALIZE LINKSET REGISTERS

**SUMMARY:** This procedure provides steps to retrieve the status of a point code or linkset, performance monitoring data of a linkset and initialize registers of a linkset.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

The following information is required in order to complete this procedure:

- Point codes
- Link sets

2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 11](#).

3. Select your task from the following and go to the indicated step.

- Retrieve status of link set ..... [Step 5](#)
- Retrieve PM data of a link set ..... [Step 7](#)
- Clear the counters for statistics gathered from a link set ..... [Step 9](#)
- Finished, no other task in the above list ..... continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve status of link set. Double-click the switch name in the switch status panel to select it for the main panel. Double-click *SS7* and then *Link Sets*. Right-click a link set and select *View, Oper. Info* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).

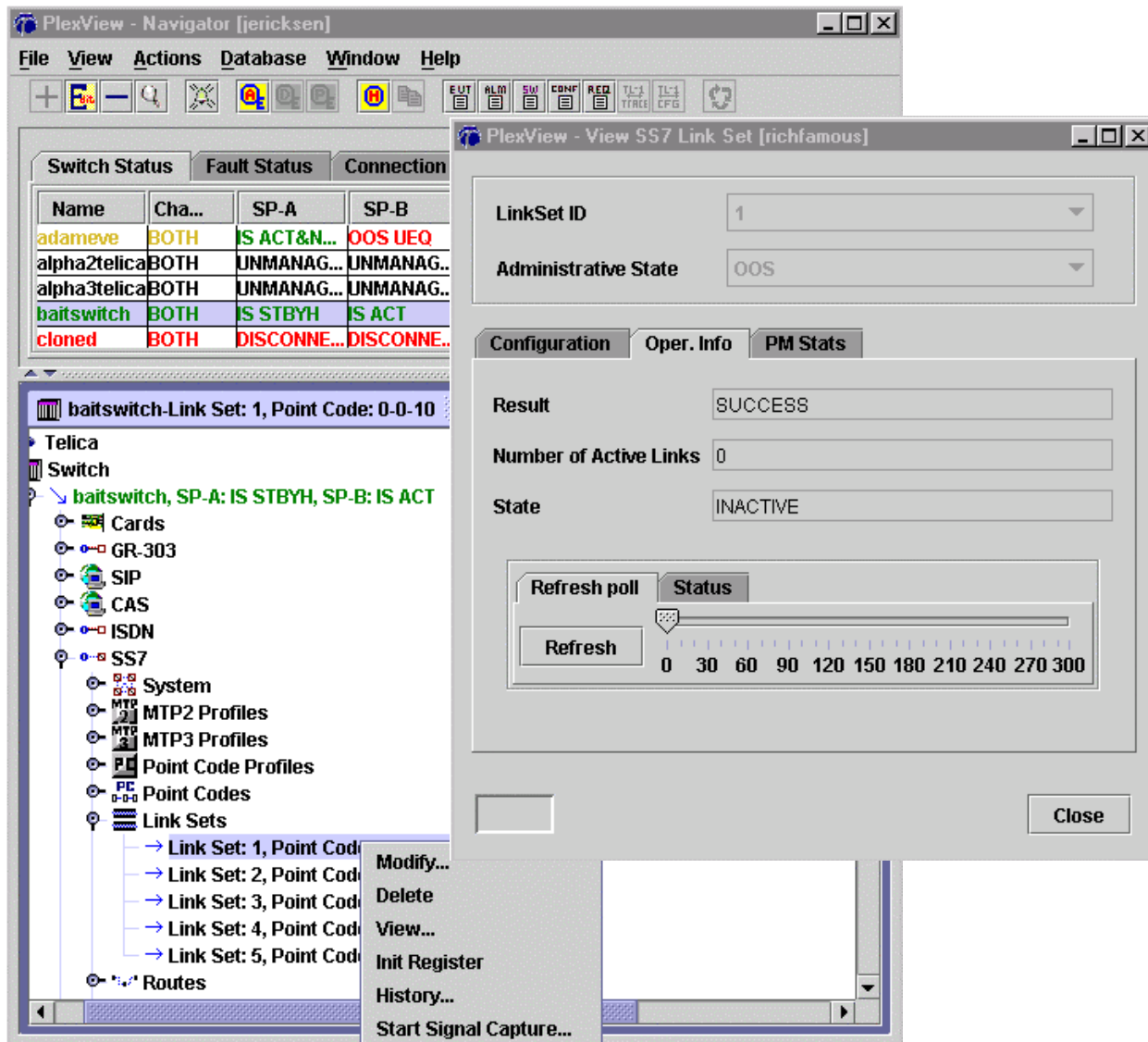


Figure 1. Status of Link Set

**Parameters and Descriptions:**

- LinkSet ID = {1 . . . 20} - Indicates the link set.
- Administrative State = {IS|OOS} – State as In-service or Out-of-service.
- Result = FAILINGLYR3 - MTP layer 3 test on the link set Failed
- = SUCCESS - MTP layer 3 test on the link set Passed
- Number of Active Links = {1 . . . 40} - Total number of active links in the link set.
- State = ACTIVE - Link set is active.
- = INACTIVE - Link set is inactive.

6. Do you want to retrieve status of another link set?  
If **YES**, then go to [Step 5](#).  
If **NO**, then go to [Step 3](#).
7. Retrieve current and historical performance data gathered from a link set. Double-click *SS7* and then *Link Sets*. Right-click a link set and select *View, PM Stats* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 2](#).

| Attribute ID  | Received Totals | Transmitted T... | Other Totals |
|---------------|-----------------|------------------|--------------|
| STARTLSETFAIL | 0               | 0                | 1            |
| STOPLSETFAIL  | 0               | 0                | 5            |
| LASTINITNA    | 0               | 0                | 1653         |
| DURLSETUNAV   | 0               | 0                | 0            |

Figure 2. PM Status of Link Set

**Parameters and Descriptions:**

- LinkSet ID = {1 . . . 20} - Indicates the link set.
- Administrative State = {IS|OOS} - State as In-service or Out-of-service.
- Monitor Type = ALL - All statistics counters of the group determined by the *dirn* parameter.
- Monitor Level = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.

|                            |                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Direction                  | = ALL - All directions of the data stored in statistics counters.<br>= NA - Direction not applicable.<br>= RCV - Receive direction only of the data stored in statistics counters.<br>= TRMT - Transmit direction only of the data stored in statistics counters. |
| Location                   | = NEND - Near end counters to be initialized.                                                                                                                                                                                                                     |
| <b><u>Attribute ID</u></b> |                                                                                                                                                                                                                                                                   |
| DURLSETUNAV                | = Duration in minutes of link set unavailability.                                                                                                                                                                                                                 |
| LASTINITNA -               | = Number of minutes since initialization of all counters for which there is no direction.                                                                                                                                                                         |
| STARTLSETFAIL              | = Number of times the link set has failed since initialization of all counters.                                                                                                                                                                                   |
| STOPLSETFAIL               | = Number of times the link set has become active (after failure) since initialization of all counters.                                                                                                                                                            |

8. Do you want to retrieve PM data of another signaling link?

If **YES**, then go to [Step 7](#).

If **NO**, then go to [Step 3](#).

9. To clear the counters for statistics gathered from a link set, double-click *SS7* and then *Link Sets*. Right-click a link set and select *Modify, PM Stats* and then click *Refresh* near the bottom of the panel for latest information. Make changes and then click *Ok* or *Apply*. See [Figure 3](#).

**Parameters and Descriptions:**

|                      |                                                                                                                                                                                                                                                                          |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LinkSet ID           | = {1 . . . 20} - Indicates the link set.                                                                                                                                                                                                                                 |
| Administrative State | = {IS OOS} – State as In-service or Out-of-service.                                                                                                                                                                                                                      |
| Monitor Type         | = <b>ALL</b> - All statistics counters of the group determined by the <i>dirn</i> parameter.                                                                                                                                                                             |
| Monitor Level        | = {0 . . . 255}-{ <b>UP</b>  DOWN} - Level of the requested monitored parameter.                                                                                                                                                                                         |
| Direction            | = <b>ALL</b> - All directions of the data stored in statistics counters.<br>= NA - Direction not applicable.<br>= RCV - Receive direction only of the data stored in statistics counters.<br>= TRMT - Transmit direction only of the data stored in statistics counters. |
| Location             | = NEND - Near end counters to be initialized.                                                                                                                                                                                                                            |

10. Do you want to initialize registers of another link set?

If **YES**, then go to [Step 9](#).

If **NO**, then go to [Step 3](#).

PlexView - Modify SS7 Link Set [richfamous]

LinkSet ID: 2

Administrative State: OOS

Configuration | Oper. Info | PM Stats

Monitor Params

Monitor Type: ALL Level: 0 - UP

Direction: ALL Location: NEND

| Attribute ID  | Received T... | Transmitte... | Other Totals |
|---------------|---------------|---------------|--------------|
| STARTLSETFAIL | 0             | 0             | 0            |
| STOPLSETFAIL  | 0             | 0             | 0            |
| LASTINITNA    | 0             | 0             | 4243         |
| DURLSETUNAV   | 0             | 0             | 0            |

Refresh poll Status

Refresh

0 30 60 90 120 150 180 210 240 270 300

Ok Cancel Apply

Figure 3. Modify PM Status of Link Set

11. Select your task from the following and go to the indicated step.
  - Retrieve status of link set ..... [Step 13](#)
  - Retrieve PM data of a link set ..... [Step 15](#)
  - Clear the counters for statistics gathered from a link set ..... [Step 17](#)
  - Finished, no other task in the above list ..... continue to the next step.
12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Retrieve status of link set using the RTRV-STATUS-LSET command.

Command Syntax: RTRV-STATUS-LSET:[TID]:< LsetId>:  
[CTAG];

**Input Parameters:**

LsetId = {1 . . . 20} Link set AID . Indicates the link set.

Command Example: RTRV-STATUS-LSET::12::;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<LsetId>:LSETSTARSLT=<lsetStaRslt>,
SS7LSETSTANMBACTLNKS=<ss7LsetStaNmbActLnks>,
SS7LSETSTASTATE=<ss7LsetStaState>"
;
```

**Output Parameters:**

ss7LsetStaId = {1 . . . 20} Indicates the link set.  
lsetStaRslt = FAILINGLYR3 - MTP layer 3 test on the link set  
Failed  
= SUCCESS - MTP layer 3 test on the link set Passed  
ss7LsetStaNmbActLnks = {1 . . . 40} - Total number of active links in the link  
set.  
ss7LsetStaState = ACTIVE - Link set is active.  
= INACTIVE - Link set is inactive.

**Output Example:**

```
telica 2001-08-25 14:37:49
M 0 COMPLD
 "12:LSETSTARSLT=SUCCESS,SS7LSETSTANMBACTLNKS=2,
SS7LSETSTASTATE=ACTIVE"
/* RTRV-STATUS-LSET */
;
```

14. Do you want to retrieve status of another link set?

If **YES**, then go to [Step 13](#).

If **NO**, then go to [Step 11](#).

15. Retrieve current and historical performance data gathered from a link set using the RTRV-PM-LSET command.

Command Syntax: RTRV-PM-LSET:[TID]:<lsetId>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>;



**Input Parameters:**

lsetId = {1 . . . 20} - Link set.  
montype = **ALL** - All statistics counters of the group determined by the *dirn* parameter.  
monlev = {0 . . . 255}-{**UP**|**DOWN**} - Level of the requested monitored parameter.  
locn = **NEND** - Near end counters to be initialized.  
dirn = **ALL** - All directions of the data stored in statistics counters.  
= **NA** - Direction not applicable.  
= **RCV** - Receive direction only of the data stored in statistics counters.  
= **TRMT** - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-LSET::::UPDSTSTHRSHLD;

**Output Format:**

```
 SID DATE TIME
M CTAG COMPLD
 "<ss7Pc>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

lsetId = {1 . . . 20} - Link set.  
montype = **ALL** - All types  
= **DURLSETUNAV** - Duration in minutes of link set unavailability  
= **LASTINITNA** - Number of minutes since initialization of all counters for which there is no direction (neither **RCV** nor **TRMT**)  
= **STARTLSETFAIL** - Number of times the link set has failed since initialization of all counters  
= **STOPLSETFAIL** - Number of times the link set has become active (after failure) since initialization of all counters  
monval = 0 . . . 4,294,967,295} - Monitored value.  
monlev = {0-255}-{**UP**,**DOWN**} - Level of the requested monitored parameter.  
locn = **NEND** - Location of the storage counters.  
dirn = **ALL** - All directions  
= **NA** - Direction not applicable  
= **RCV** - Receive direction only  
= **TRMT** - Transmit direction only

**Output Example:**

```
telica 2002-11-07 16:00:34
M 0 COMPLD
"1:STARTLSETFAIL,0,0-UP,NEND,ALL"
"1:STOPLSETFAIL,7,0-UP,NEND,ALL"
"1:LASTINITNA,141,0-UP,NEND,ALL"
"1:DURLSETUNAV,0,0-UP,NEND,ALL"
/* RTRV-PM-LSET */
;
```

16. Do you want to retrieve PM data of another signaling link?

If **YES**, then go to [Step 15](#).

If **NO**, then go to [Step 11](#).

17. Clear the counters for statistics gathered from a link set using the INIT-RET-LSET command.

Command Syntax: INIT-REG-LSET:[TID]:<lsetId>:[CTAG]::  
<montype>,[<monval>],[<locn>],[<dirn>];

**Input Parameters:**

lsetId = {1 . . . 20} - Link set.  
montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
monnval = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".  
locn = **NEND** - Near end counters to be initialized.  
dirn = **ALL** - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Command Example: INIT-REG-LSET::1:::ALL;

18. Do you want to initialize registers of another link set?

If **YES**, then go to [Step 17](#)

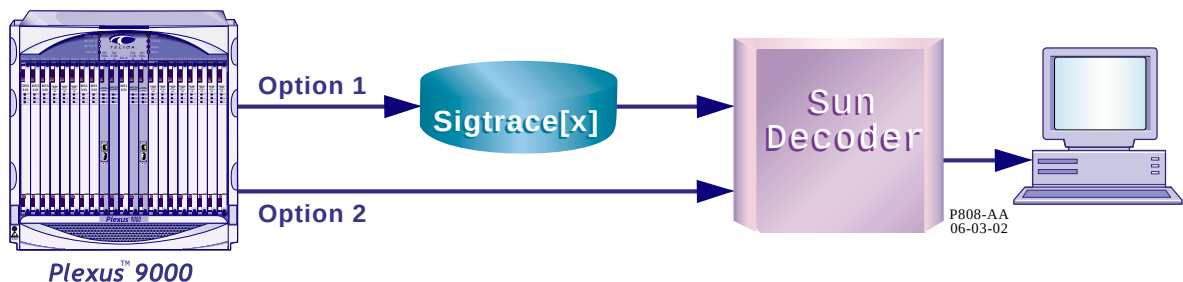
If **NO**, then go to [Step 11](#).

## DLP-606 - CAPTURING SIGNALING

**SUMMARY:** This procedure provides steps for capturing signaling messages. It also provides steps for decoding the messages.

When the capturing of signaling messages is started, signaling messages are duplicated and forwarded to the SigTrace Manager of the Plexus. The SigTrace Manager dumps the PDUs (Protocol Data Units) and corresponding time stamps in hexadecimal format to a file called *sigtrace.out*, or if configured to send them to a remote system, the binary records are sent to a remote server to be decoded simultaneously.

This feature supports capturing SS7 MTP3, ISDN Q931 and CAS signaling messages. These messages will appear in the same log in chronological order according to the timestamps and order of occurrence.



The *sigtrace.out* file is located in the */Telica/swCPU/CurrRel/log* directory and has a maximum size of 1,000,000 bytes. If the size of the *sigtrace.out* is greater than 1,000,000, the current log file *sigtrace.out* is closed and renamed *sigtrace.out\_Old* and a new *sigtrace.out* file is created. The active file is always *sigtrace.out*. If it is deleted, *sigtrace.out* will be recreated when the next captured message is received by the SigTrace Manager.

A separate process runs on a Sun system to read, decode and provide a readable display of the hex dump of the signaling messages is required. This program can take a file name as input, or can have a socket interface for direct data transfer.

Capturing of signaling data is very CPU intensive, so this should not be done continuously. It may impact message response times and timeouts of call messages may occur.

The Sun decoder program is distributed in the */Telica/swCraft/* directory and the user should FTP this executable to the desired Sun system in binary mode.

1. The following information may be required in order to complete this procedure:
  - IDs of link sets or ISDN interfaces that will be traced.
  - IP address and port of the Sun where captures may be sent
2. Select your task from the following and go to the indicated step.
  - Start local capture of signaling messages..... [Step 4](#)
  - Decode local capture of signaling messages .....[Step 16](#)
  - Start remote capture and decode of signaling messages ..... [Step 21](#)
  - Stop capture of signaling messages..... [Step 30](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The following steps will log captured signaling messages locally on the Plexus.

4. Are you logged into the Plexus for which you want to capture signaling messages?

If **YES**, then continue to the next step.

If **NO**, then Telnet to the IP address of the active or working System Processor and log on.

Reference: DLP-504

5. Determine IP address used by the capture program using the RTRV-CAPT-SYS command. To log captured messages to a local Plexus file (sigtrace.out), this should have a NULL value.

Command Syntax: RTRV-CAPT-SYS: [TID]: [<CaptSysId>]:  
[CTAG];

**Input parameters:**

CaptSysId = {1} – AID

= A null value is equivalent to "ALL" and will log captured messages to a local Plexus file.

Command Example: RTRV-CAPT-SYS;

Output format, parameters and an example are on the following page.

**Output format:**

```
SID DATE TIME
M CTAG COMPLD
 "<CaptSysId>:<IPAddr>,<Port>"
;
```

**Output parameters:**

CaptSysId = {1} – AID  
IPAddr = ({0 ... 255}-{0 ... 255}-{0 ... 255}-{0 ... 255}) – IP address  
where log should be sent. Should be 0.0.0.0 for Plexus.  
Port = (0 ... 9004 ... 9999) – Port of Sun Server (IP address)

**Output example:**

```
Telica 2002-01-20 14-30-00
M 001 COMPLD
/* RTRV-CAPT-SYS */
;
```

6. Is an IP address displayed?

If **NO**, then go to [Step 8](#).

If **YES**, then continue to the next step.

7. Clear the IP address by using the DLT-CAPT-SYS command.

Command Syntax: DLT-CAPT-SYS:[TID]:<CaptSysId>:[CTAG];

**Input parameters:**

CaptSysId = {1} – AID must be 1.

Command Example: DLT-CAPT-SYS::1;;

8. Start the signaling capture using the STA-CAPT command.

Command Syntax: STA-CAPT:[TID]:<CaptAid>:[CTAG]::  
[<Chn>],<Lyr>,[<Md>],[<Bc>],[<Sapi>],  
[<Tei>],[<Lcn>],[<Dn>]:[<Prccaptm>],  
[<Trig>],[<Mot>],[<Stp>;

Parameters and an example are on the following page.

**Parameters:**

|         |                                                                                                                                                                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CaptAid | = ISDNIF-{1 . . . 32767} – ISDN interface. If number is omitted, it means all ISDN interfaces.<br>= LSET-{1 . . . 20} – Link set. If number is omitted, it means all link sets.<br>= CAS-IOM-{1-17}[-T3-{1-8}]-PORT-{1-28}[-T0-{1-24}&&-{1-24}] |
| Chn     | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Lyr     | = {L3} -                                                                                                                                                                                                                                        |
| Md      | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Bc      | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Sapi    | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Tei     | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Lcn     | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Dn      | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Prcaptm | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Trig    | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Mot     | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |
| Stp     | = A null value is equivalent to "ALL".                                                                                                                                                                                                          |

Command Example: STA-CAPT::ISDNIF-1:::, L3;

Command Example: STA-CAPT::ISDNIF:::, L3;

Command Example: STA-CAPT::LSET-1:::, L3;

Command Example: STA-CAPT::LSET:::, L3;

Command Example: STA-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2:::, L3;

Command Example: STA-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2&&-8:::, L3;

Command Example: STA-CAPT::CAS-IOM-1-T3-1-PORT-3:::, L3;

Comment: The log of signaling captures is located in  
*/Telica/swCPU/currRel/log/sigtrace.out.*

9. Get the status of signaling capture using the RTRV-STATUS-CAPT command.

Command Syntax: RTRV-STATUS-CAPT:[TID]:[<captAid>]:  
[CTAG]::[<pcsn>];

Parameters, o\Output format and example are on the following page.

**Parameters:**

CaptAid = ISDNIF-{1 . . . 32767} – ISDN interface. If number is omitted, it means all ISDN interfaces.  
= LSET-{1 . . . 20} – Link set. If number is omitted, it means all link sets.  
= CAS-IOM-{1-17}[-T3-{1-8}][[-PORT-{1-28}][[-T0-{1-24}&&-{1-24}]] Retrieve can be achieved at IOM, T3 or port level.  
pcsn = {1} - Protocol capture session number

Command Example: RTRV-STATUS-CAPT::ISDNIF-1;

Command Example: RTRV-STATUS-CAPT::LSET;

Command Example: RTRV-STATUS-CAPT:: CAS-IOM-1-T3-1-PORT-3;

Command Example: RTRV-STATUS-CAPT:: CAS-IOM-3;

**Output format:**

```
SID DATE TIME
M CTAG COMPLD
 "<captAid>:<pcsn>:<sigCaptStatus>"
;
```

**Output parameters:**

CaptAid = ISDNIF-{1 . . . 32767}  
= LSET-{1 . . . 20}  
= CAS-IOM-{1-17}[-T3-{1-8}]-PORT-{1-28}[-T0-{1-24}]  
pcsn = {1} - Protocol capture session number.  
sigCaptStatus = SIGCAPTOFF – Capture is Off.  
= SIGCAPTON – Capture is On.

**Output example:**

```
Telica 2002-01-20 14-30-00
M 001 COMPLD
 "ISDNIF-1:1:SIGCAPTON"
/* RTRV-STATUS-CAPT */;
```

10. Do you want to start signaling capture for another CaptAid?

If **YES**, then go to [Step 8](#).

If **NO**, then continue to the next step.

11. Run test messages into Plexus system or wait for desired event to occur.

12. At end of sampling period, stop the signaling capture using the STP-CAPT command.

Command Syntax: STP-CAPT:[TID]:<CaptAid>:[CTAG]::  
<Pcsn>;

**Parameters:**

CaptAid = ISDNIF-{1 . . . 32767} – ISDN interface. If number is omitted, it means all ISDN interfaces.  
= LSET-{1 . . . 20} – Link set. If number is omitted, it means all link sets.  
= CAS-IOM-{1-17}[-T3-{1-8}]-PORT-{1-28}[-T0-{1-24}]&&-{1-24}]  
Pcsn = {1} - Protocol capture session number.

Command Example: STP-CAPT::ISDNIF-1:::1;

Command Example: STP-CAPT::ISDNIF:::1;

Command Example: STP-CAPT::LSET-1:::1;

Command Example: STP-CAPT::LSET:::1;

Command Example: STP-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2:::1;

Command Example: STP-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2&&-8:::1;

Command Example: STP-CAPT::CAS-IOM-1-T3-1-PORT-3:::1;



**Note:** The following steps are performed at a Sun workstation.

13. Obtain the username and password and log into the Sun server that will be used to decode captures of signaling.
14. Log into the active side of the Plexus where the capture of signaling messages exists.
15. FTP the *sigtrace.out* log file from the Plexus to a directory on the Sun server.

Comment: The *sigtrace.out* file is located in the */Telica/swCPU/CurrRel/log* directory.

16. Log into the Sun system.



17. Display the decode messages or redirect them by completing Step 17a or 17b.
- a. Use the decoder to decode the messages and display them by typing the following:

```
decoder -f <Plexus_sigtrace>↵
```

- b. The output of the decoder can also be redirected to a file so that the output can be scanned using the “view” or “more” editor commands.

```
decoder -f <Plexus_sigtrace> >
decoded_message.out↵
```

Comment: “Plexus\_sigtrace” is the file containing the hex information to be decoded.

18. You can now evaluate the information that was decoded. Go to [Step 2](#).



**Note:** The following steps are performed at a Sun workstation.

19. Login to the Sun server that will be used to decode captures of signaling.
20. Start the decoder in the Sun Server so that it is ready to accept input by completing Step 20a or 20b.
- a. Start the decoder to decode the messages and display them by typing the following:

```
./decoder -s [-p <port number>]↵
```

- b. The decoder output can also be redirected to a file to be viewed later using UNIX editor commands by typing the following:

```
./decoder -s [-p <port number>] >
decoded_message.out↵
```



**Note:** The following steps are performed at the Plexus and will send captured signaling messages to a remote server where they can be dynamically decoded.

21. Are you logged into the Plexus for which you want to trace of signaling messages?

If **YES**, then continue to the next step.

If **NO**, then Telnet to the IP address of the active or working System Processor and log on.

Reference: DLP-504

22. Get the IP address and port number of the Sun system using the RTRV-CAPT-SYS command. Refer to [Step 5](#) for parameter definitions, output format and example.

Command Syntax: RTRV-CAPT-SYS:[TID]:[<CaptSysId>]:  
[CTAG];

Command Example: RTRV-CAPT-SYS;

23. Is the IP address equal to NULL?

If it is equal to **NULL**, then go to [Step 25](#).

If the IP address is **not NULL**, then continue to the next step.

24. Clear the IP address by using the DLT-CAPT-SYS command.

Command Syntax: DLT-CAPT-SYS:[TID]:<CaptSysId>:[CTAG];

Command Example: DLT-CAPT-SYS::1;;

25. Set the IP address and the port of the Sun server where the captured signaling messages will be sent using the ENT-CAPT-SYS command. The default port used is 9004.

Comment: After this step is completed successfully, the connection with the decoder will be established.

Command Syntax: ENT-CAPT-SYS:[TID]:<CaptSysId>:[CTAG]::  
<IPAddr>,[<Port>;

**Input parameters:**

CaptSysId = {1} – AID must be 1.

IPAddr = ({0 ... 255}-{0 ... 255}-{0 ... 255}-{0 ... 255}) – IP address where log should be sent.

Port = (0 ... **9004** ... 9999) – Port of Sun Server (IP address)

Command Example: ENT-CAPT-SYS::1:::192.2.24.234,9004;

26. Start the signaling capture using the STA-CAPT command. Refer to [Step 8](#) for parameter definitions.

Command Syntax: STA-CAPT:[TID]:<CaptAid>:[CTAG]::  
[<Chn>],[<Lyr>],[<Md>],[<Bc>],[<Sapi>],  
[<Tei>],[<Lcn>],[<Dn>]:[<Prcaptm>],  
[<Trig>],[<Mot>],[<Stp>;

Examples are on the following page.

Command Example: STA-CAPT::ISDNIF-1:::, L3;

Command Example: STA-CAPT::ISDNIF:::, L3;

Command Example: STA-CAPT::LSET:::, L3;

Command Example: STA-CAPT::LSET:::, L3;

Command Example: STA-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2:::, L3;

Command Example: STA-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2&&-8:::, L3;

Command Example: STA-CAPT::CAS-IOM-1-T3-1-PORT-3:::, L3;

27. Get the status of signal capturing using the RTRV-STATUS-CAPT command. Refer to [Step 9](#) for parameter definitions, output format and example.

Command Syntax: RTRV-STATUS-CAPT:[TID]:[<captAid>]:[CTAG]::[<pcsn>;

Command Example: RTRV-STATUS-CAPT::ISDNIF-1;

Command Example: RTRV-STATUS-CAPT::LSET;

Command Example: RTRV-STATUS-CAPT:: CAS-IOM-1-T3-1-PORT-3;

Command Example: RTRV-STATUS-CAPT:: CAS-IOM-3;

28. Do you want to start signal capturing for another CaptAid?

If **YES**, then go to [Step 26](#).

If **NO**, then continue to the next step.

29. Wait for a period of time to collect the required signaling messages.



**Note:** The following steps will stop capturing signaling messages.

30. Stop the signaling capture using the STP-CAPT command.

Command Syntax: STP-CAPT:[TID]:<CaptAid>:[CTAG]::<Pcsn>;

Parameters and examples are on the following page.

**Parameters:**

CaptAid = ISDNIF-{1 . . . 32767} – ISDN interface. If number is omitted, it means all ISDN interfaces.  
= LSET-{1 . . . 20} – Link set. If number is omitted, it means all link sets.  
= CAS-IOM-{1-17}[-T3-{1-8}]-PORT-{1-28}[-T0-{1-24}&&-{1-24}]

Pcsn = {1} - Protocol capture session number.

Command Example: STP-CAPT::ISDNIF-1:::1;

Command Example: STP-CAPT::ISDNIF:::1;

Command Example: STP-CAPT::LSET-1:::1;

Command Example: STP-CAPT::LSET:::1;

Command Example: STP-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2:::1;

Command Example: STP-CAPT::CAS-IOM-1-T3-1-PORT-3-T0-2&&-8:::1;

Command Example: STP-CAPT::CAS-IOM-1-T3-1-PORT-3:::1;

31. At the Plexus, delete capture system by using DLT-CAPT-SYS command. This will disconnect the socket connect with the decoder.

Command Syntax: DLT-CAPT-SYS:<tid>:<CaptSysId>;

Command Example: DLT-CAPT-SYS::1;



**Note:** The following steps are performed at a Sun workstation.

32. View the displayed signaling ISDN messages on the Sun terminal or view them from the saved STDOUT file.
33. Terminate the decoder by holding the Ctrl key and C key simultaneously.
34. Logoff the Sun system.
35. Do you want to do another capture function?

If **YES**, then go to [Step 2](#).

If **NO**, then continue to the next step.

- 36.

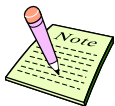


**YOU HAVE COMPLETED THIS PROCEDURE.**

## DLP-609 - RETRIEVE OR DELETE ALARM QUEUE

**SUMMARY:** This procedure explains how to enable an alarm queue session, retrieve parameters associated with alarm queuing sessions, which are established for TCP ports defined with ED-SYS-SECU command, or to delete the alarm queue. It also provides steps to retrieve automatic messages of alarm queues.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** To change or edit equipment parameters, the equipment must be out-of-service (OOS). IOMs must be added with the ENT-EQPT command before the line facility parameters can be provisioned

1. The following information is required in order to complete this procedure:
  - I/O Modules, their type and the ports to be provisioned.
  - IOM line parameters such a distance to cross connect, line coding, formatting etc.
2. Select your task from the following and go to the indicated step.
  - Enable alarm queuing..... [Step 4](#)
  - Retrieve port and whether alarm queuing is enabled ..... [Step 5](#)
  - Retrieve parameters of an alarm queuing session ..... [Step 7](#)
  - Delete an alarm queuing session ..... [Step 9](#)
  - Retrieve alarm queue automatic messages..... [Step 12](#)
  - Finished, no other task in the above list, ..... continue to the next step.
3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Provision alarm queuing using the ED-SYS-SECU command. Refer to DLP-558 for complete syntax and parameters of command.

Command Syntax: ED-SYS-SECU:[TID]:[<src>]:[CTAG]::  
[MAXINV=<maxInv>],[DURAL=<dural>],  
[TMOUT=<tmout>],[PRELOGINTIMEOUT=  
<preLoginTimeOut>],[PASSWDEXPALERT=  
<passwdExpAlert>],[PASSWDCHGFREQ=  
<passwdChgFreq>],[HEARTBEAT=<heartbeat>],  
[TCPCONNENABLED=<tcpConnEnabled>],  
[TRUSTEDHOSTENABLED=<trustedHostEnabled>],  
[ALMQPORT=<almqPort>],[ALMQTMO=<almqTmo>],  
[EMPORT=<emPort>],[EM1IP=<em1Ip>],  
[EM2IP=<em2Ip>],[SSHENABLED=<sshEnabled>],  
[EVENTINTERVAL=<eventInterval>];

**parameters:**

src = COM - AID for a Plexus 9000.  
almqPort = {1024 . . . 1234 . . . 65535}but excluding 1110, 1199,  
1983, 1984,1985, 2049, 2360, 2361, 6000-6009, 6667  
and 7000 –Port used for alarm queue sessions.  
almTmo = 0 - Disables alarm queuing and flushes queued events.  
= {1 . . . 4320} - Maximum elapsed time in minutes during  
which alarm queuing can occur.

Command Example: ED-SYS-SECU::COM::alm1Port=1234,  
almTmo=720;

Comment: In the previous command, alarm queuing will occur for 12 hours  
(720 minutes). During this time, users can connect to an Alarm  
Queue session via Telnet using the telnet xxx.xxx.xxx.xxx 1234  
command and substituting the correct IP address for  
xxx.xxx.xxx.xxx. This telnet session is an output only sessions and  
not commands can be entered.

5. Check or retrieve system security configuration using the RTRV-SYS-SECU command. Refer to [Step 4](#) for parameter descriptions.

Command Syntax: RTRV-SYS-SECU:[TID]:COM:[CTAG];

Command Example: RTRV-SYS-SECU::COM;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"[<src>]:MAXINV=<maxInv>,DURAL=<dural>,
TMOUT=<tmout>, PRELOGINTIMEOUT=<preLoginTimeOut>,
PASSWDEXPALERT=<passwdExpAlert>,
PASSWDCHGFREQ=<passwdChgFreq>,HEARTBEAT=<heartbeat>,
TCPCONNENABLED=<tcpConnEnabled>,
```

```
TRUSTEDHOSTENABLED=<trustedHostEnabled>,
ALMQPORT=<almqPort>,ALMQTMO=<almqTmo>,
EMPORT=<emPort>,EM1IP=<em1Ip>,EM2IP=<em2Ip>,
SSHENABLED=<sshEnabled>,EVENTINTERVAL=<eventInterval>"
;
```

**Output Example:**

```
leftright 2003-06-04 16:00:40
M 0 COMPLD
"COM:MAXINV=3,DURAL=0-0-30,TMOUT=30,
PRELOGINTIMEOUT=2,PASSWDEXPALERT=7,PASSWDCHGFREQ=20,
HEARTBEAT=0,TCPCONNENABLED=Y,TRUSTEDHOSTENABLED=N,
ALMQPORT=2363,ALMQTMO=0,EMPORT=2362,EM1IP=0.0.0.0,
EM2IP=0.0.0.0,SSHENABLED=N,EVENTINTERVAL=150"
/* RTRV-SYS-SECU */
```

6. Do you want to change system security configuration?  
If **YES**, then go to [Step 4](#).  
If **NO**, then go to [Step 2](#)
7. Retrieve parameters associated with alarm queuing sessions established for alarm queuing TCP ports defined with ED-SYS-SECU using the RTRV-STATUS-ALMQ command.

Command Syntax: RTRV-STATUS-ALMQ:[TID]:  
[<almqSessionId>]:[CTAG];

**Input parameters:**

almqSessionId = {1...65535} - Alarm queuing session.  
= A null value is equivalent to "ALL".

Command Example: RTRV-STATUS-ALMQ::1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<almqSessionId>:SRCIPADDR=<srcIpAddr>,
CONNECTTIMESTAMP=<connectTimestamp>,
QUEUEINGTIMESTAMP=<queueingTimestamp>,
REPLAYTIMESTAMP=<replayTimestamp>,
ALMQSTATE=<almqState>"
;
```

**Output parameters:**

almqSessionId = {1...65535} - Alarm queuing session  
srcIpAddr = {0-255}.{0-255}.{0-255}.{0-255} - IP address for the  
client (i.e., the user's computer) used to access the alarm

|                   |                                                                                                                                                                                                                                                                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | queue session port on the Plexus (defined by the parameter <i>almqPort</i> in the command ED-SYS-SECU).                                                                                                                                                                                                                           |
| connectTimestamp  | = {MM-DD-YYYY-HH-MM-SS} - Date and time that the alarm queuing session was established.                                                                                                                                                                                                                                           |
| queueingTimestamp | = {MM-DD-YYYY-HH-MM-SS} - Date and time alarm queuing began due to an anomalous or error condition.                                                                                                                                                                                                                               |
| replayTimestamp   | = {MM-DD-YYYY-HH-MM-SS} - Date and time the user reconnects to the TL1 agent after a session disconnect or anomalous condition is detected, and replay of queued alarms begins.                                                                                                                                                   |
| almqState         | = CONNECTED - The client session is not disconnected from the Plexus; alarms do not queue.<br>= QUEUEING - The client session is disconnected from the Plexus; alarms queue for subsequent replay.<br>= REPLAYING - The client session has reconnected to the Plexus, which outputs the queued autonomous messages to the client. |

**Output Example:**

```
telica 2002-01-25 14:37:49
M 0 COMPLD
"1:SRCIPADDR=199.190.180.1,
CONNECTTIMESTAMP=01-23-2002-08-35-00,
QUEUEINGTIMESTAMP=01-24-2002-16-42-55,
REPLAYTIMESTAMP=01-24-2002-16-55-
27,ALMQSTATE=CONNECTED"
/* RTRV-STATUS-ALMQ */
;
```

8. Is there another session for which to retrieve alarm queuing parameters?

If **YES**, then go to [Step 7](#).

If **NO**, then go to [Step 2](#).

9. Delete an alarm queuing session using the DLT-ALMQ command.

Command Syntax: DLT-ALMQ:[TID]:<almqSessionId>:[CTAG];

Command Example: DLT-ALMQ::1;

10. Is there another alarm queuing session to delete?

If **YES**, then go to [Step 9](#).

If **NO**, then go to [Step 2](#).

11. Has an alarm queue session been enabled?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 4](#).



12. Retrieve alarm queue automatic messages by establishing a Telnet session to the Plexus using the port number provisioned in the ED-SYS-SECU command.

Command Example: TELNET 10.5.1.1 1234

13. Was your response similar to the following?

**Response:** 2002-4-12:-08-21-53:Connection refused -  
session from 10.0.100.64 Alarm Queueing is disabled.  
AlmqTmo = 0 : 10.0.100.64

If **YES**, then go to [Step 4](#) to enable alarm queuing.

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-610 - PROVISION AND SCHEDULE SYSTEM BACKUP

**SUMMARY:** This procedure explains how to provision address of host that will receive backup data, the directory where it will be stored and the username and password for the host. It will also provision a schedule for backups of the Plexus.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - IP address or host name and directory name where backup is to be sent.
  - Username and password.
2. Select your task from the following and go to the indicated step.
  - Provision parameters for backup of Plexus..... [Step 4](#)
  - Retrieve parameters for backing up Plexus..... [Step 5](#)
  - Delete data for backup ..... [Step 7](#)
  - Set up a schedule for a backup of Plexus..... [Step 8](#)
  - Retrieve schedule parameters..... [Step 9](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Provision parameters for backing up the system using the ENT - BACKUP - SYS command.

Command Syntax:    ENT - BACKUP - SYS: [TID]: [<src>]: [CTAG]: :  
                          <desthost>, <username>, <password>,  
                          <destdir>;

**Input parameters:**

|          |                                                                                                                                                                                                |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| src      | = COM – Aid for command.                                                                                                                                                                       |
| desthost | = {0 . . . 255}.{0 . . . 255}.{0 . . . 255}.{0 . . . 255} - Remote host, containing the destination directory identified by <i>destDir</i> , for backing up the Plexus configuration data.     |
| username | = {alphanumeric string} - Identifies a valid user name for the host identified by <i>destHost</i> .                                                                                            |
| password | = {alphanumeric string} - Valid password for the host identified by <i>destHost</i> .                                                                                                          |
| destdir  | = {ANSI character string} - Destination directory for the backup file. The value of <i>destdir</i> starts with a "/" unless the destination directory is within the current working directory. |

Command Example: ENT-BACKUP-SYS::COM:::192.100.200.300,ericksen,ericksen,DESTDIR

5. Retrieve parameters associated backing up system using the RTRV-BACKUP-SYS command. Refer to [Step 4](#) for parameter definitions.

Command Syntax: RTRV-BACKUP-SYS:[TID]:[<src>]:[CTAG];

Command Example: RTRV-BACKUP-SYS;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<desthost>,<username>,<password>,<destdir>"
;
```

**Output Example:**

```
telica 2002-01-25 14:37:49
M 0 COMPLD
 "192.100.200.300,ericksen,*****,DESTDIR"
/* RTRV-BACKUP-SYS */
;
```

6. Are the parameters for the BACKUP-SYS correct?

If **YES**, then go to [Step 2](#).

If **NO**, then go to [Step 4](#).

7. Delete data from database using the DLT - BACKUP - SYS command and then go to [Step 2](#). Refer to [Step 4](#) for parameter definitions.

Command Syntax: DLT - BACKUP - SYS : [TID] : [<src>] : [CTAG] ;

Command Example: DLT - BACKUP - SYS ;



**Note:** The ENT - BACKUP - SYS command must be completed before entering the SCHED - BKUP - EQPT command.

8. Set up a schedule for a backup of the system using the SCHED - BKUP - EQPT command.

Command Syntax: SCHED - BKUP - EQPT : [TID] : [<src>] :  
[CTAG] : : : : <invl> , <stadat> , <statm> ,  
[<tmout>] ;

**Input parameters:**

|        |                                                                                            |
|--------|--------------------------------------------------------------------------------------------|
| src    | = COM – Aid for command                                                                    |
| invl   | = {1 ... 31}-DAY – Interval is every X day.<br>= {1 ... 24}-HR – Interval is every X hour. |
| stadat | = {0-12}-{1-31} – Start date.                                                              |
| statm  | = {0-23}-{0-59} – Start time.                                                              |
| tmout  | = {1 ... 30 ... 120} - Time out interval in minutes.                                       |

Command Example: SCHED - BKUP - EQPT : : : : : 24 - HR , 1 - 12 , 15 - 30 ;

9. Retrieve parameters for backup schedule using the RTRV - BKUP SCHED - EQPT command. Refer to [Step 8](#) for parameter descriptions.

Command Syntax: RTRV - BKUP SCHED - EQPT : [TID] : [<src>] :  
[CTAG] ;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<invl>,<stadat>,<statm>,<tmout> "
;
```

**Output Example:**

```
telica 2002-01-25 14:37:49
M 0 COMPLD
 "COM:24-HR,1-12,15-30,30"
/* RTRV-BKUP SCHED-EQPT */
;
```

**10.** Are the parameters for the backup schedule correct?

If **YES**, then go to [Step 2](#).

If **NO**, then go to [Step 8](#).

## DLP-611 - ALLOW, INHIBIT OR SCHEDULE FAILOVERS

**SUMMARY:** This procedure explains how to allow, inhibit or schedule failovers of IOMs or System Processors. The ALW-EX-EQPT command must be completed before entering the SCHED-EX-EQPT command.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Frequency of failovers
2. Select your task from the following and go to the indicated step.
  - Allow an IOM or SP to failover..... [Step 4](#)
  - Inhibit an IOM or SP to failover ..... [Step 5](#)
  - Set up a schedule for failovers ..... [Step 6](#)
  - Retrieve schedule of failover parameters ..... [Step 7](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Allow an IOM or SP to failover using the ALW-EX-EQPT command and then go to [Step 2](#).

Command Syntax: ALW-EX-EQPT : [TID] : <iomOrSp> : [CTAG] ;

**Input parameters:**

mod\_id = IOM-{1 . . . 17} – Aid for IOM  
= SP-{A|B} – Aid for System Processor  
= A null defaults to “ALL”.

Command Example: ALW-EX-EQPT : : SP-A ;

5. Inhibit an IOM or SP to failover using the INH-EX-EQPT command and then go to [Step 2](#).

Command Syntax: INH-EX-EQPT:[TID]:<iomOrSp>:[CTAG];

**Input parameters:**

mod\_id = IOM-{1 . . . 17} – Aid for IOM  
= SP-{A|B} – Aid for System Processor  
= A null defaults to “ALL”.

Command Example: INH-EX-EQPT::IOM-1;



**Note:** The ALW-EX-EQPT command must be completed before entering the SCHED-EX-EQPT command.

6. Set up a schedule for a failover of the system using the SCHED-EX-EQPT command.

Command Syntax: SCHED-EX-EQPT:[TID]:<iomOrSp>:[CTAG]::  
[<invl>],[<statm>],[<numinvl>],  
<reptmode>;

**Input parameters:**

iomOrSp = IOM-{1 . . . 17} – Aid for IOM  
= SP-{A|B} – Aid for System Processor  
= A null defaults to “ALL”.

invl = {1 . . . 31}-DAY – Interval is every X day.  
= {1 . . . 24}-HR – Interval is every X hour. The Plexus 9000 returns a value of “0-HR” for invl when you RTRV-EXSCHED-EQPT the first time (that is, before you’ve ever run SCHED-EX-EQPT).

statm = {0-23}-{0-59} – Start time.

numinvl = {0 . . . 1000} – Number of times to failover.  
= 0 means to stop more failovers.  
= 1000 means unlimited until value is change.

reptmode = ALL - Report all.  
= FAIL - Report failed only.  
= Null defaults to FAIL.

inhmode = {ALW|INH} – Allow or inhibit periodic exercises. Used in RTRV output.

Command Example: SCHED-EX-EQPT::IOM-1:::,2-0,1000;

Comment: The above example schedules an IOM protection switch once a day at 2 AM until the schedule is changed.



Command Example: `SCHED-EX-EQPT::SP-A:::7-DAY,4-30,8;`

Comment: The above example schedules an SP protection switch once a week for eight weeks. An SP switch includes a SF protection switch.

Command Example: `SCHED-EX-EQPT::IOM-1:::,0;`

Comment: The above example turns off a protection exercise, as *numinvl* is zero.

7. Retrieve parameters for failover schedule using the `RTRV-EXSCHED-EQPT` command. Refer to [Step 6](#) for parameter descriptions.

Command Syntax: `RTRV-EXSCHED-EQPT:[TID]:[<iomOrSp>]:CTAG];`

Command Example: `RTRV-EXSCHED-EQPT::IOM-1;`

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<iomOrSp>:<invl>,<statm>,<numinvl>,<reptmode>,<inhmode>"
;
```

**Output Example:**

```
telica 2002-01-25 14:37:49
M 0 COMPLD
 "IOM-1:24-HR,2-0,6,ALL,ALW"
/* RTRV-EXSCHED-EQPT */
;
```

8. Are the parameters for the failover schedule correct?

If **YES**, then go to [Step 2](#).

If **NO**, then go to [Step 6](#).

**NOTES:**

## DLP-612 - OPERATE A CIRCUIT QUERY OR VALIDATION TEST

**SUMMARY:** This procedure explains how to conduct a circuit query on a trunk group to show the state of the specified trunk(s) at the far end switch. It also explains how to conduct an ISUP circuit validation test on a specified trunk (cic) in a trunk group to return the information contained in the response message (CVR) and validate the consistency of the returned information.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Trunk group number
  - Trunk numbers
2. Select your task from the following and go to the indicated step.
  - Operate a circuit query on a trunk group..... [Step 4](#)
  - Operate an ISUP circuit validation test..... [Step 6](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Operate a circuit query on a trunk group to show the state of the specified trunk(s) at the far end switch using the **OPR-CQM** command.

Command Syntax:    **OPR-CQM: [TID] :<ss7TrkAid>: [CTAG] ;**

**parameters:**

ss7TrkAid                    = {1 ... 9999}-{1 ... 32767} (Trunk group number-trunk) - Trunk (or range of trunks) associated with a trunk group number. A range (up to 24) of trunks is shown by the beginning and ending numbers separated by two ampersands and a hyphen (“&&-”).

Command Example: **OPR-CQM: :1-2&&-4 ;**

Command Example: **OPR-CQM: :5-8**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7TrkAid>:<statusInfo>"
;
```

**Output Parameters:**

ss7TrkAid = {1 . . . 9999}-{1 . . . 32767} - Trunk group number and trunk.

statusInfo = ACT - State of the trunk is active; no maintenance procedure on the trunk.  
= LBLK - State of the trunk is locally blocked.  
= LBLK&RBLK - State of the trunk is locally blocked and remotely blocked.  
= RBLK - State of the trunk is remotely blocked.  
= TRANS - State of the trunk is transient.  
= UEQ - State of the trunk is unequipped.

**Output Example:**

```
telica 2002-01-25 14:37:49
M 0 COMPLD
 "1-2:ACT"
 "1-3:ACT"
 "1-4:RBLK"
/* OPR-CQM */;
```

5. Do you want to operate another circuit query?  
If **YES**, then go to [Step 4](#).  
If **NO**, then go to [Step 2](#).
6. Operate an ISUP circuit validation test on a specified trunk (cic) in a trunk group using the OPR-CVT command.

Command Syntax: OPR-CVT:[TID]:<ss7TrkAid>:[CTAG];

**Input Parameters:**

ss7TrkAid = {1 . . . 9999}-{1 . . . 32767} (Trunk group number-trunk) - Trunk associated with a trunk group number.

Command Example: OPR-CQM::1-4;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7TrkAid>:<Status>,<cgCarrier>,<dblSeizeCtl>,<almCarrier>,<cotChkReq>,<trunkNum>,<CLLIoffA>,<CLLIoffZ>,<CLLI>,<cause>"
;
```

**Output Parameters:**

|             |                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ss7TrkAid   | = {1 . . . 9999}-{1 . . . 32767} (Trunk group number-trunk) - Trunk associated with a trunk group number.                                                                                                                                          |
| Status      | = FAILURE - The validity test failed for the reason defined by the parameter <i>cause</i> .<br>= SUCCESS - The test was successful both locally and remotely.                                                                                      |
| cgCarrier   | = ANALOG - Analog carrier.<br>= ANA_DIG - Analog and digital carrier.<br>= DIGITAL - Digital carrier.<br>= UNKNOWN - Unknown carrier.                                                                                                              |
| dblSeizeCtl | = ALL<br>= EVEN<br>= ODD<br>= NONE                                                                                                                                                                                                                 |
| almCarrier  | = HARDWARE<br>= SOFTWARE<br>= UNKNOWN                                                                                                                                                                                                              |
| cotChkReq   | = NONE<br>= PERCALL<br>= STATISTICAL<br>= UNKNOWN                                                                                                                                                                                                  |
| trunkNum    | = {exactly four digits} - Value returned in the trunk number field of the Circuit Identification Name parameter in the CVR message, but only when the CVR indicates a successful test on the remote switch.                                        |
| CLLIoffA    | = {exactly eleven ASCII characters} - Value returned in the "CLLI code - office A" field of the Circuit Identification Name parameter in the CVR message, but only when the CVR indicates a successful test on the remote switch.                  |
| CLLIoffZ    | = {exactly eleven ASCII characters} - Value returned in the "CLLI code - office Z" field of the Circuit Identification Name parameter in the CVR message, but only when the CVR indicates a successful test on the remote switch.                  |
| CLLI        | = {exactly eleven ASCII characters} - Value returned in the CLLI Code parameter in the CVR message, but only when the CVR indicates a failed test on the remote switch.                                                                            |
| cause       | Reason that the CVT test failed when the value of <i>Status</i> is "FAILURE".<br>= "No response from remote switch."<br>= "Failure status received from remote switch"<br>= "Inconsistent dual seizure indicator"<br>= "Inconsistent trunk number" |

**Output Example:**

```
telica 2002-01-25 14:37:49
M 0 COMPLD
 "1-4:SUCCESS,ALLOC=ASCENDING,ALL,UNKNOWN,UNKNOWN,
0001,0005MARLBOROUGH,0006MARLBOROUGH,, "
/* OPR-CVT */
;
```

7. Do you want to operate another ISUP circuit validation test?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

## DLP-613 - SWITCH ISDN D CHANNEL TO PROTECTION

**SUMMARY:** This procedure explains how to perform a protection switch of the D-channel on an NFAS ISDN link to the backup signaling link used for an NFAS interface. The SW-TOPROTN-ISDN command is only valid for NFAS, and will fail if the specified link is not an active part of NFAS or if it's a non-NFAS ISDN interface.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:

- Number of ISDN interface



**Note:** The SW-TOPROTN-ISDN command is only valid for NFAS, and will fail if the specified link is not an active part of NFAS or if it's a non-NFAS ISDN interface.

2. Perform a protection switch of the D-channel on an NFAS ISDN link to the backup signaling link using the SW-TOPROTN-ISDN command.

Command Syntax: SW-TOPROTN-ISDN:[TID]:<ifNum>:[CTAG];

**Input Parameters:**

ifNum = {1 . . . 32767} - Number of the interface.

Command Example: SW-TOPROTN-ISDN::1;

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**NOTES:**



## DLP-614 - TRACE CALL

**SUMMARY:** This procedure explains how to identify the resources used by an in-progress call on a channel, ISDN link or SS7 trunk on a Plexus 9000 module. Retrieved properties can include the dialing and dialed numbers; protocol used; incoming and outgoing trunk interfaces (channel), SS7 trunk group numbers, and SS7 trunk numbers (CIC); SS7 destination point code; ISDN link on the interface; and the ISDN B channel for the interface.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - IOM port
  - Directory number
2. Select your task from the following and go to the indicated step.
  - Trace an in-progress call ..... [Step 4](#)
  - Trace an in-progress ISDN call ..... [Step 6](#)
  - Trace an in-progress call on SS7 trunk ..... [Step 8](#)
  - Finished, no other task in the above list ..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Identify the resources used by an in-progress call using the TRC-CALL-EQPT command.

Command Syntax: TRC-CALL-EQPT:[TID]:<iomports0>:  
CTAG];

**Input Parameters:**

iomports0 = IOM-{1 . . . 17}-PORT-{1 . . . 28}-T0-{1 . . . 24} - Channel  
on a T1 port on a DS1 IOM.  
= IOM-{1 . . . 17}-STS1-{1 . . . 8}-PORT-{1 . . . 28}-T0-  
1 . . . 24} - Channel on a T1 port of an STS1 IOM.  
= IOM-{1 . . . 17}-T3-{1 . . . 8}-PORT-{1 . . . 28}-T0-  
{1 . . . 24} - Channel on a T1 port of a DS3 IOM.

Command Example: TRC-CALL-EQPT::IOM-1-PORT-1-T0-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "[DN=<dn>], PROTHDLR=<prothdlr>, [TRKIF=<trkif>],
TGN=<tgn>, TRKNMBR=<trknmbr>, [DPC=<dpc>],
OEDCHL=<oedchl>], NUMBCHL=<numbchl>"
;
```

**Output Parameters:**

|          |                                                                                                                                                                                                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dn       | = {up to 20 digits} - Dialed or dialing number on the channel.                                                                                                                                                                                                                                  |
| prothdlr | = NFAS - Protocol handler is Non-Facility-Associated Signaling.<br>= PRI - Protocol handler is Primary Rate Interface.<br>= SS7 - Protocol handler is Signaling System 7.                                                                                                                       |
| trkif    | = IOM-{1 ... 17}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port on a DS1 IOM.<br>= IOM-{1 ... 17}-STS1-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port of an STS1 IOM.<br>= IOM-{1 ... 17}-T3-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port of a DS3 IOM. |
| tgn      | = {0 ... 9999} - Unique SS7 trunk group number. "0" indicates that the parameter is not applicable.                                                                                                                                                                                             |
| trknmbr  | = {0 ... 32767} - Unique SS7 trunk (cic) associated with the trunk group number. "0" indicates that the parameter is not applicable.                                                                                                                                                            |
| dpc      | = {0 ... 255}-{0 ... 255}-{0 ... 255} - Destination point code for the SS7 trunk.                                                                                                                                                                                                               |
| oedchl   | = {1 ... 32767}-{1 ... 32767} - ISDN link (link-interface) on an interface.                                                                                                                                                                                                                     |
| numbchl  | = {0-24} - B channel on the interface for ISDN calls. "0" indicates that the parameter is not applicable.                                                                                                                                                                                       |

**Output Example:**

```
telica 2002-02-25 14:37:49
M 0 COMPLD
 "DN=5088048202, PROTHDLR=SS7,
TRKIF=IOM-1-T3-1-PORT-1-T0-1, TGN=4, TRKNMBR=504,
DPC=1-2-3, NUMBCHL=0"
 "DN=5084800909, PROTHDLR=NFAS,
TRKIF=IOM-1-T3-1-PORT-1-T0-1, TGN=0, TRKNMBR=0,
OEDCHL=1-2, NUMBCHL=23"
 /* TRC-CALL-EQPT */
;
```

5. Do you want to trace another call?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).

6. Identify the resources used by an in-progress call on an ISDN link using the TRC-CALL-LNK command.

Command Syntax: TRC-CALL-LNK:[TID]:<linkid>:[CTAG]::  
<channum>;

**Input Parameters:**

linkid = {1 ... 32767}-{1 ... 32767} - ISDN link (link-interface) on an interface.  
channum = {1 ... 24} - B channel for the ISDN link.

Command Example: TRC-CALL-LNK::1-2:::23;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 [DN=<dn>],PROTHDLR=<prothdlr>,[TRKIF=<trkif>],
 GN=<tn>,[TRKNMBR=<trknmbr>],[DPC=<dpc>],
 OEDCHL=<oedchl>], NUMBCHL=<numbchl>"
;
```

**Output Parameters:**

dn = {up to 20 digits} - Dialed or dialing number on the channel.  
prothdlr = NFAS - Protocol handler is Non-Facility-Associated Signaling.  
= PRI - Protocol handler is Primary Rate Interface.  
= SS7 - Protocol handler is Signaling System 7.  
trkif = IOM-{1 ... 17}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port on a DS1 IOM.  
= IOM-{1 ... 17}-STS1-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port of an STS1 IOM.  
= IOM-{1 ... 17}-T3-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port of a DS3 IOM.  
tn = {0 ... 9999} - Unique SS7 trunk group number. "0" indicates that the parameter is not applicable.  
trknmbr = {0 ... 32767} - Unique SS7 trunk (cic) associated with the trunk group number. "0" indicates that the parameter is not applicable.  
dpc = {0 ... 255}-{0 ... 255}-{0 ... 255} - Destination point code for the SS7 trunk.  
oedchl = {1 ... 32767}-{1 ... 32767} - ISDN link (link-interface) on an interface.  
numbchl = {0-24} - B channel on the interface for ISDN calls. "0" indicates that the parameter is not applicable.

**Output Example:**

```
telica 2002-02-25 14:37:49
M 0 COMPLD
 "DN=5088048202, PROTHDLR=SS7,
 TRKIF=IOM-1-T3-1-PORT-1-T0-1, TGN=4, TRKNMBR=504,
 DPC=1-2-3, NUMBCHL=0"
 "DN=5084800909, PROTHDLR=NFAS,
 TRKIF=IOM-1-T3-1-PORT-1-T0-1, TGN=0, TRKNMBR=0,
 OEDCHL=1-2, NUMBCHL=23"
 /* TRC-CALL-LNK */
;
```

7. Do you want to trace another ISDN call?  
If **YES**, then go to [Step 6](#).  
If **NO**, then go to [Step 2](#).
8. Identify the resources used by an in-progress call on an SS7 trunk using the TRC-CALL-TRK command.

Command Syntax: TRC-CALL-TRK:[TID]:<trkAid>:[CTAG];

**Input Parameters:**

trkAid = {1 . . . 9999}-{1 . . . 32767} – (tgn-trunk) Unique trunk associated with a trunk group number.

Command Example: TRC-CALL-TRK::1-2;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 [DN=<dn>], PROTHDLR=<prothdlr>, [TRKIF=<trkif>],
 GN=<tgn>, TRKNMBR=<trknmbr>, [DPC=<dpc>],
 OEDCHL=<oedchl>], NUMBCHL=<numbchl>"
;
```

**Output Parameters:**

dn = {up to 20 digits} - Dialed or dialing number on the channel.  
prothdlr = NFAS - Protocol handler is Non-Facility-Associated Signaling.  
= PRI - Protocol handler is Primary Rate Interface.  
= SS7 - Protocol handler is Signaling System 7.

|         |                                                                                                                                                                                                                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| trkif   | = IOM-{1 ... 17}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port on a DS1 IOM.<br>= IOM-{1 ... 17}-STS1-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port of an STS1 IOM.<br>= IOM-{1 ... 17}-T3-{1 ... 8}-PORT-{1 ... 28}-T0-{1 ... 24} - Channel on a T1 port of a DS3 IOM. |
| tgn     | = {0 ... 9999} - Unique SS7 trunk group number. "0" indicates that the parameter is not applicable.                                                                                                                                                                                             |
| trknmbr | = {0 ... 32767} - Unique SS7 trunk (cic) associated with the trunk group number. "0" indicates that the parameter is not applicable.                                                                                                                                                            |
| dpc     | = {0 ... 255}-{0 ... 255}-{0 ... 255} - Destination point code for the SS7 trunk.                                                                                                                                                                                                               |
| oedchl  | = {1 ... 32767}-{1 ... 32767} - ISDN link (link-interface) on an interface.                                                                                                                                                                                                                     |
| numbchl | = {0-24} - B channel on the interface for ISDN calls. "0" indicates that the parameter is not applicable.                                                                                                                                                                                       |

#### Output Example:

```
telica 2002-02-25 14:37:49
M 0 COMPLD
 "DN=5088048202, PROTHDLR=SS7,
TRKIF=IOM-1-T3-1-PORT-1-T0-1, TGN=4, TRKNMBR=504,
DPC=1-2-3, NUMBCHL=0"
 "DN=5084800909, PROTHDLR=NFAS,
TRKIF=IOM-1-T3-1-PORT-1-T0-1, TGN=0, TRKNMBR=0,
OEDCHL=1-2, NUMBCHL=23"
 /* TRC-CALL-EQPT */
;
```

#### 9. Do you want to trace another SS7 call?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-615 - CAPTURING CALLS

**SUMMARY:** This procedure explains how to establish, retrieve or turn off a call trace observation (capture) session for a specific calling party and/or called party number. At least one number must be entered, even though both the calling party and called party numbers are optional parameters. The ENT-CALL-CAPT or ENT-CALL-CAPTVERBOSE command is used to specify the criteria and to turn on capturing. The log of the captured calls is obtained using the RTRV-LOG command. The log can store 12,000 records.

ENT-CALL-CAPT is used to trace nuisance calls. Its output contains only the time stamp, calling and called part numbers. ENT-CALL-CAPTVERBOSE is for debug purposes. Its output contains some resource information used by the call.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:

- Calling party number
- Called party number



**Note:** The ENT/DLT/RTRV-CALL-CAPT commands are disabled in release 3.9.0.X.

2. Select your task from the following and go to the indicated step.

- Establish a call capture session ..... [Step 4](#)
- Turn off a call capture session ..... [Step 6](#)
- Retrieve parameters of a call capture session..... [Step 8](#)
- Retrieve log of captured calls..... [Step 10](#)
- Establish a verbose call capture session..... [Step 12](#)
- Turn off a verbose call capture session ..... [Step 14](#)
- Retrieve parameters of a verbose call capture session ..... [Step 16](#)
- Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Establish a call trace (capture) session for a calling party and/or called party number using the ENT-CALL-CAPT command.

Command Syntax: ENT-CALL-CAPT:[TID]:<trcId>:[CTAG]::  
[CGPN=<cgpn>],[CDPN=<cdpn>];

**Input Parameters:**

trcId = {1 . . . 128} - AID of the call trace session to establish.  
cgpn = {up to 21 digits} - Calling party number for the call trace.  
cdpn = {up to 21 digits} - Called party number for the call trace.

Command Example: ENT-CALL-CAPT::1:::CDPN=6177273600;

5. Do you want to capture another call?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).

6. Turn off a call trace session for a specific calling party and/or called party number using the DLT-CALL-CAPT command.

Command Syntax: DLT-CALL-CAPT:[TID]:<trcId>:[CTAG];

Command Example: DLT-CALL-CAPT::1;

7. Do you want to turn off another call trace session?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

8. Retrieve the calling party and/or called party number(s) for call capture session(s) using the RTRV-CALL-CAPT command. Refer to [Step 4](#) for parameter descriptions.

Command Syntax: RTRV-CALL-CAPT:[TID]:[<trcId>]:[CTAG];

**Input Parameters:**

trcId = {1 . . . 128} - AID of the call trace session to establish.

Command Example: RTRV-CALL-CAPT::1;

**Output Format:**

SID DATE TIME  
M CTAG COMPLD  
" <trcId>:[CGPN=<cgpn>],[CDPN=<cdpn>]"  
;

**Output Example:**

telica 2002-02-25 14:37:49  
M 0 COMPLD  
"1:CDPN=6177273600"  
"2:CDPN=5084800002"  
/\* RTRV-CALL-CAPT \*/  
;



9. Do you want to retrieve parameters of another call capture session?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).

10. Retrieve log of captured calls using the RTRV-LOG command.

Command Syntax: RTRV-LOG:[TID]:[<log\_id>]:[CTAG]::  
<lognm>;

**parameters:**

log\_id = **COM** Identifies the Plexus 9000 from which to retrieve a log.

lognm = AO - Autonomous message log  
= BKUP – Backup log  
= BULK – Bulk download log  
= CALLCAPT – Call capture/trace log  
= FRAUD – Log of fraud calls  
= MSG - Message log  
= SEC - Security log  
= SECBKUP – Security backup log  
= SYS - System log

Command Example: RTRV-LOG::::CALLCAPT;

**Output example:**

```
alpha1telica 2002-03-27 11:56:19
M 0 COMPLD
/*
"TRCINDEX=2, DATE=2002-3-27 11:56:1,
CGPN=1234567890, CDPN=5084800002"
"TRCINDEX=2, DATE=2002-3-27 11:56:8,
CGPN=1234567890, CDPN=5084800002"
"TRCINDEX=2, DATE=2002-3-27 11:56:15,
CGPN=1234567890, CDPN=5084800002"
*/
```

11. Do you want to turn off a call trace session?

If **YES**, then go to [Step 6](#)

If **NO**, then go to [Step 2](#).

12. Establish a verbose call trace (capture) session for a calling party and/or called party number using the ENT-CALL-CAPTVERBOSE command.

Command Syntax: ENT-CALL-CAPTVERBOSE:[TID]:<trcId>:  
[CTAG]::[CGPN=<cgpn>],[CDPN=<cdpn>],  
[SENDDL1=<sendTl1>],[CAPTDUR=<captDur>]  
;

**Input Parameters:**

trcId = {1 . . . 20} - AID of the call trace session to establish.  
cgpn = {up to 21 digits} - Calling party number for the call trace.  
cdpn = {up to 21 digits} - Called party number for the call trace.  
sendTl1 = {Y|N} - Log and display or do not log autonomous messages.  
captDur = {0 . . . 24} - Duration, in hours, for the call trace observation session. The default value "0" indicates that the session lasts indefinitely. This field is currently not used. Its value has no affect on call capture and session always lasts indefinitely.

Command Example: ENT-CALL-CAPT::1::CDPN=6177273600;

13. Do you want to capture another call?

If YES, then go to [Step 12](#).

If NO, then go to [Step 2](#).

14. Turn off a verbose call trace session for a specific calling party and/or called party number using the DLT-CALL-CAPTVERBOSE command.

Command Syntax: DLT-CALL-CAPTVERBOSE:[TID]:<trcId>:  
[CTAG];

Command Example: DLT-CALL-CAPTVERBOSE::1;

15. Do you want to turn off another call trace session?

If YES, then go to [Step 14](#).

If NO, then go to [Step 2](#).

16. Retrieve the verbose calling party and/or called party number(s) for call capture session(s) using the RTRV-CALL-CAPTVERBOS command. Refer to [Step 12](#) for parameter descriptions.

Command Syntax: RTRV-CALL-CAPTVERBOSE:[TID]:[<trcId>]:  
[CTAG];

Command Example: RTRV-CALL-CAPTVERBOSE::1;

**Output Format:**

SID DATE TIME  
M CTAG COMPLD  
"<trcId>:[CGPN=<cgpn>],[CDPN=<cdpn>],SENDTL1=N,  
CAPTDUR=0"  
;

**Output Example:**

telica 2002-02-25 14:37:49  
M 0 COMPLD  
"1: CGPN=5088048202,CDPN=6177273600,SENDTL1=N,  
CAPTDUR=0"  
/\* RTRV-CALL-CAPTVERBOSE \*/  
;

**17.** Do you want to retrieve parameters of another call capture session?

If **YES**, then go to [Step 16](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-616 - GENERATE OR RETRIEVE SECULOG

**SUMMARY:** This procedure explains how to generate and retrieve the security banner for the Plexus 9000. The security banner is the free-format text warning that is displayed before access is granted regarding unauthorized entry/use and possible consequences.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Text for banner
2. Select your task from the following and go to the indicated step.
  - Generate security banner..... [Step 4](#)
  - Retrieve security banner..... [Step 5](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Generate the security banner for the Plexus 9000 using the SET-ATTR-SECULOG command.

Command Syntax: SET-ATTR-SECULOG: [TID]: [<src>]: [CTAG]: :  
WRNLN=<wrnLn>, [WRNTX=<wrnTx>];

**Input Parameters:**

|       |                                                                                                          |
|-------|----------------------------------------------------------------------------------------------------------|
| src   | = COM - AID of the Plexus 9000.                                                                          |
| wrnLn | = {1 . . . 20} - Line number, within the warning message, that receives the new text specified by wrnTx. |
| wrnTx | = {up to 63 ASCII characters} – Text for warning line identified in wrnLn.                               |

Command Example: SET-ATTR-SECULOG:::::WRNLN=1,WRNTX=\"This is a private computer system. Unauthorized access or use \";

Command Example: SET-ATTR-SECULOG:::::WRNLN=2,WRNTX=\"may lead to prosecution.\";

5. Retrieve the security banner for the Plexus 9000 using the RTRV-ATTR-SECULOG command.

Command Syntax: RTRV-ATTR-  
SECULOG:[TID]:[<src>]:[CTAG]::  
{WRNLN=<wrnLn>};

**Input Parameters:**

src = COM - AID of the Plexus 9000.  
wrnLn = {1 . . . 20} - Line number, within the warning message,  
that receives the new text specified by *wrnTx*.

Command Example: RTRV-ATTR-SECULOG;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:WRNLN=<wrnLn>,WRNTX=<wrnTx>"
;
```

**Output Parameters:**

src = COM - AID of the Plexus 9000.  
wrnLn = {1 . . . 20} - Line number, within the warning message,  
that receives the new text specified by *wrnTx*.  
wrnTx = {up to 63 ASCII characters} – Text for warning line  
identified in *wrnLn*.

**Output Example:**

```
TELICA 2002-02-25 14:37:49
M 0 COMPLD
 "COM:WRNLN=1,WRNTX=\"This is a private computer
system. Unauthorized access or use \""
 "COM:WRNLN=2,WRNTX=\" may lead to prosecution.\""
 "COM:WRNLN=3, "
 "COM:WRNLN=4, "
 "COM:WRNLN=5, "
 "COM:WRNLN=6, "
 "COM:WRNLN=7, "
 "COM:WRNLN=8, "
 "COM:WRNLN=9, "
 "COM:WRNLN=10, "
 "COM:WRNLN=11, "
 "COM:WRNLN=12, "
 "COM:WRNLN=13, "
 "COM:WRNLN=14, "
 "COM:WRNLN=15, "
 "COM:WRNLN=16, "
 "COM:WRNLN=17, "
```

```
"COM:WRNLN=18, "
"COM:WRNLN=19, "
"COM:WRNLN=20, "
/* RTRV-ATTR-SECULOG */
;
```

6. Do you want to change the security banner?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).

**NOTES:**



## DLP-621 - CHANGE I/O MODULE SOFTWARE VERSION

**SUMMARY:** This procedure provides steps to change software version of an IOM or to resolve differences of software versions resident on a module and that which has been provisioned for a module. You may be directed to call Telica Technical Services at 888-440-8354 or 888-440-TELI if Technical Services must assist you.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Software version installed on IOM (result of RTRV-INFO-EQPT)
  - Software version of the System Processor
2. If you are not logged into the Plexus, connect a craft terminal or telnet to the Plexus 9000 and log in.
3. Is the software version (numbers) of the IOM different from the software version of the SP? (If you do not know, enter the RTRV-INFO-EQPT command and note software versions.)
  - If **YES**, then continue to the next step.
  - If **NO**, then go to [Step 7](#).
4. Call Telica Technical Services at 888-440-8354 or 888-440-TELI. Have the software version numbers of the IOM and SP at hand. Ask whether IOM software can be changed using the CPY-MEM command to match the version number of the SP.
  - If **YES**, then go to [Step 7](#).
  - If **NO**, continue to the next step.
5. Determine with Technical Services what steps must be taken to resolve this.
6.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The following steps will determine if the IOM software exists on the system processor.

7. Change to the Telica directory of the System Processor using the EXEC-CD command.

Command Syntax: EXEC-CD:[TID]:[<src>]:[CTAG]:: [<dir>];

Command Example: EXEC-CD:::::/Telica;

Comment: Telica is case-sensitive.

8. List the files and directories using the EXEC-LS command and make a note of the directories beginning with “sw” (i.e., swDS1, swOCTDS3, etc.)

Command Syntax: EXEC-LS:[TID]:[<src>]:[CTAG]::  
[<switches>], [<files>];

Command Example: exec-ls;

9. Change to the directory for the IOM type of the IOM that is being replace and has a mismatch of software. Make the appropriate selection from the following list.

For DS1 (89-0360) IOMs, enter **EXEC-CD:::::swDS1;** and continue.

For triple DS3 (89-0395) IOMs, enter **EXEC-CD:::::swDS3;** and continue.

For triple DS3 (89-0397/0410) IOMs, enter **EXEC-CD:::::swTRIDS3;** and continue.

For triple DS3 (89-0424) IOMs, enter **EXEC-CD:::::swTRIDS3\_3;** and continue.

For Octal DS3 (89-0382) IOMs, enter **EXEC-CD:::::swOCTDS3;** and continue.

For Octal DS3\_2 (89-0398/0411) IOMs, enter **EXEC-CD:::::swOCTDS3\_2;** and continue.

For Octal DS3\_3 (89-0425) IOMs, enter **EXEC-CD:::::swOCTDS3\_3;** and continue.

For ANA IOMs, enter **EXEC-CD:::::swANA;** and continue.

For PNA IOMs, enter **EXEC-CD:::::swPNA;** and continue.

For Voice Server (89-0395) IOMs, enter **EXEC-CD:::::swVOP;** and continue.

For Voice Server (89-0384) IOMs, enter **EXEC-CD:::::swVOP6;** and continue.

For Ethernet (ENA) (89-0390) IOMs, enter **EXEC-CD:::::swENA;** and continue.

Directory does not exist, then go to [Step 12](#).

10. List the directories and files in that directory by entering **EXEC-LS;**

11. Is there a directory that matches the software version of the SP?

If **YES**, the go to [Step 19](#)

If **NO**, then continue to the next step.



**Note:** The following steps will determine if a compressed or tarred file for the software version exists on the System Processor.

12. Change to the root directory of the System Processor using the EXEC-CD command.

Command Syntax: EXEC-CD:[TID]:[<src>]:[CTAG]:[<dir>;

Command Example: EXEC-CD:::::/;

13. List the files with the “tar.gz” extension using the EXEC-LS command.

Command Example: exec-ls::::, \*.tar.gz;

14. Are there any file extensions that are preceded with the software version installed on the IOM and the name of the IOM? (i.e., 1.2.0.1.1\_octds3.tar.gz for an Octal DS3 IOM with software version 1.2.0.1.1)

If **YES**, then continue to the next step.

If **NO**, then you will have to obtain a copy of the file. Go to [Step 23](#).

15. Enter the EXEC-TAR-EXTRACT command to decompress and untar (restores original directory structure) the system software file.

Command Syntax: EXEC-TAR-EXTRACT:[TID]:[<src>]:[CTAG]:[<tarfile>;

**Input Parameters:**

src = COM - AID as a Plexus 9000.

tarfile = {string of ANSI characters} - Tarfile from which to extract files.

Command Example: EXEC-TAR-EXTRACT::COM:::  
x.x.x.x.x\_octds3\_2.tar.gz;

Comment: Substitute new revision of software for x.x.x.x.x.

Response: IP 0  
<  
Telica>

Comment: ***This Telica is not a prompt. Wait for more text and finally, the following response.***

<text>  
/\* EXEC-TAR-EXTRACT \*/

16. Copy this file to the standby (protection) System Processor using the EXEC-CP-TOSTBY command. This is the tar.gz file.

Command Syntax: EXEC-CP-TOSTBY:[TID]:[<src>]:[CTAG]:[<switches>,<source>,<dest>;

**Input Parameters:**

src = COM - AID of a Plexus 9000.  
switches = -p - Preserve file attributes if possible when copying.  
= -r - Copy recursively, non-directories as files when copying.  
source = {string of ANSI characters} - File/directory to be copied. The value of *source* starts with a "/" unless the source file/directory is within the current working directory. *source* cannot contain wildcard characters (e.g., "\*").  
dest = {string of ANSI characters} - Destination file/directory for the copied file/directory. The value of *dest* starts with a "/" unless the destination file/directory is within the current working directory.

Command Example: **EXEC-CP-TOSTBY::COM::-rp,  
/x.x.x.x.x\_octds3\_2.tar.gz,/;**

Comment: Substitute the correct file name for *x.x.x.x.x\_octdsc\_2.tar.gz*.

Response: IP 0  
<  
Telica>  
telica 2000-09-29 14:37:49  
M 0 COMPLD  
cd /; /bin/rcp -rp /3.1.0.0.79\_cpu.tar.gz  
192.168.253.27:/3.1.0.0.79\_cpu.tar.gz  
/\* EXEC-CP-TOSTBY \*/  
;

17. Wait for the message that files have been copied.
18. Enter the EXEC-TAR-EXTRACTSTBY command to decompress and untar (restores original directory structure) the system software file of the standby processor.

Command Syntax: **EXEC-TAR-EXTRACTSTBY:[TID]:[<src>]:  
[CTAG]::<tarfile>,<path>;**

**Input Parameters:**

src = COM - AID as a Plexus 9000.  
tarfile = {string of ANSI characters } - Tarfile from which to extract files. The value of *tarfile* starts with a "/" unless the affected file/directory is within the current working directory.  
path = {string of ANSI characters } - Directory on the standby System Processor module where the \*.tar.gz file is located.

Command Example: **EXEC-TAR-EXTRACTSTBY::COM:::  
x.x.x.x.x\_octds3\_2.tar.gz,/;**

Comment: Substitute the correct file name for *x.x.x.x.x\_octds3\_2.tar.gz*.

Response: IP 0  
<  
Telica>

Comment: ***This Telica is not a prompt. Wait for more text and finally, the following response.***

```
<text>
/* EXEC-TAR-EXTRACTSTBY */
```

Comment: Wait for the prompt.

19. Change the software version of the IOM using the ED-EQPT command entering the correct software version and CLEI (if required) of IOMs.

Command Syntax: ED-EQPT:[TID]:<iomOrSp>:[CTAG]::  
[IOMODULETYPE=<iomModuleType>],  
[REDUNDANCY=<rn>],  
[SPMEMTHRESHOLD=<spMemThreshold>],  
[SPNVMEMTHRESHOLD=<spNVMemThreshold>],  
[SPBUSYTHRESHOLD=<spBusyThreshold>],  
[SWVERSION=<swVersion>]:[<pst>];

Command Example: **ED-EQPT::iom-  
1::IOMODULETYPE=BA9IX70AAB,  
SWVERSION=x.x.x.x.x;**

Comment: Substitute the correct version number of the software for x.x.x.x.x.

20. To change the firmware on the I/O module, enter the CPY-MEM command.

Command Syntax: CPY-MEM:[TID]:<src>:[CTAG];

Command Example: **CPY-MEM::IOM-1;**

21. **Wait** for an autonomous message that indicates the IOM has been restored to service. This will take several minutes.

22. Did the CPY-MEM command complete successfully?

If **YES**, then go to [Step 24](#).

If **NO**, then continue to the next step

23. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

24.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**NOTES:**

## DLP-624 - RETRIEVE STATUS OF MEDIA GATEWAY AND VOICE SERVER IOMS

**SUMMARY:** This procedure explains how to retrieve information for a Plexus 9000 configured as a media gateway (MG) and for Voice Processor Server (VPS) modules in a Plexus 9000 configured as a media gateway.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - IOM slot number of Voice Processor Server (VPS) modules
2. Select your task from the following and go to the indicated step.
  - Retrieve information about media gateway (MG) ..... [Step 4](#)
  - Retrieve information on VPS modules in an MG ..... [Step 6](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve information about the Plexus configured as a media gateway using the RTRV-STATUS-MG command.

Command Syntax: RTRV-STATUS-MG : [TID] : [<COM>] : [CTAG] ;

Command Example: RTRV-STATUS-MG ;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<src>:NUMCONTEXTS=<numContexts>,
NUMTDMTERMUSED=<numTdmTermUsed>,
NUMTDMTERMAVAIL=<numTdmTermAvail>,
NUMVOIPTERMUSED=<numVoipTermUsed>,
VOIPTDMECAVAIL=<voipTdmEcAvail>,RESPRFL1=<resPrfl1>,
RESPRFL2=<resPrfl2>,RESPRFL3=<resPrfl3>,
RESPRFL4=<resPrfl4>,RESPRFL5=<resPrfl5>,
RESPRFL6=<resPrfl6>,RESPRFL7=<resPrfl7>,
NOECAVAILCURRENT=<noEcAvailCurrent>,
NOECAVAILTOTAL=<noEcAvailTotal>"
;
```

**Output Parameters:**

|                  |   |                                                                                                                                                            |
|------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| src              | = | COM - AID for a Plexus 9000.                                                                                                                               |
| numContexts      | = | {0 ... 2147483648} - Number of active contexts.                                                                                                            |
| numTdmTermUsed   | = | {0 ... 2147483648} - Number of TDM terminations used.                                                                                                      |
| numTdmTermAvail  | = | {0 ... 2147483648} - Number of TDM terminations available.                                                                                                 |
| numVoipTermUsed  | = | {0 ... 2147483648} - Number of VOIP packet terminations used.                                                                                              |
| numTdmAvail      | = | {0 ... 2147483648} - Number of resources available for TDM Echo Cancellation on a VOIP IOM.                                                                |
| resprfl1         | = | {0 ... 128000} - Number of resources available for G.711/Clear Channel data calls.                                                                         |
| resprfl2         | = | {0 ... 128000} - Number of resources available for G.729 compression on a VOIP IOM.                                                                        |
| resprfl3         | = | {0 ... 128000} - Number of resources available for G.723 compression on a VOIP IOM.                                                                        |
| resprfl4         | = | {0 ... 128000} - Number of Resources available for G.726 compression on a VOIP IOM.                                                                        |
| resprfl5         | = | {0 ... 2147483648} - Reserved for future codec profiles.                                                                                                   |
| resprfl6         | = | {0 ... 2147483648} - Reserved for future codec profiles.                                                                                                   |
| resprfl7         | = | {0 ... 2147483648} - Reserved for future codec profiles.                                                                                                   |
| noEcAvailCurrent | = | {0 ... 2147483648} - Number of requests for TDM echo cancellation that have failed due to resource unavailability since the last issuance of this command. |
| noEcAvailTotal   | = | {0 ... 2147483648} - Number of requests for TDM echo cancellation that have failed due to resource unavailability since the last switch reboot.            |

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
"COM:NUMCONTEXTS=0,NUMTDMTERMUSED=0,
NUMTDMTERMAVAIL=19776,NUMVOIPTERMUSED=0,
VOIPTDMECAVAIL=65535,RESRFL1=0,RESRFL2=0,RESRFL3=0,
RESRFL4=0,RESRFL5=0,RESRFL6=0,RESRFL7=0,
NOECAVAILCURRENT=0,NOECAVAILTOTAL=0"
/* RTRV-STATUS-MG */
;
```

5. Do you need to retrieve information again?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



6. Retrieve information on Voice Processor Server (VPS) modules in a Plexus 9000 configured as a media gateway using the RTRV-STATUS-VPS command.

Command Syntax: RTRV-STATUS-VPS:[TID]:[<iomAid>]:  
[CTAG];

**Input Parameters:**

iomAid = IOM-{1 . . . 17} - AID ss an IOM slot containing a Voice Processor Server module.

Command Example: RTRV-STATUS-VPS::IOM-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<iomAid>:TYPE=<type>,VPSSTATUS=<vpsStatus>,
 VOIPNETWORKCONN=<voipNetworkConn>,TDMCAVAIL=<tdmEcAva
 il>,<resPrfl1>,<resPrfl2>,<resPrfl3>,<resPrfl4>,<resPrfl5>,<resPrfl6>,<resPrfl7>"
;
```

**Output Parameters:**

|                 |                                                                                                                                                                                                                                                                                   |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iomAid          | - IOM-{1 . . . 17} - IOM slot containing a Voice Processor Server module.                                                                                                                                                                                                         |
| type            | = VOIP - VPS IOM operation is VoIP.<br>= VOA - VPS IOM operation is VoA.                                                                                                                                                                                                          |
| vpsStatus       | = FAILINGOVER -A brief state while the protection IOM is being initialized with the data about the failed IOM.<br>= IS – VPS is In-service<br>= OOS – VPS is Out-of-service<br>= PROTECTED - VPS is OOS and calls are handled by the protection IOM<br>= TEST - VPS is under test |
| voipNetworkConn | = {IS OOS} - VPS IOM's connectivity to the network can support VOIP calls.                                                                                                                                                                                                        |
| tdmEcAvail      | = {0 . . . 65636} - Number of TDM terminations available.                                                                                                                                                                                                                         |
| resprfl1        | = {0 . . . 128000} - Number of resources available for G.711/Clear Channel data calls.                                                                                                                                                                                            |
| resprfl2        | = {0 . . . 128000} - Number of resources available for G.729 compression on a VOIP IOM.                                                                                                                                                                                           |
| resprfl3        | = {0 . . . 128000} - Number of resources available for G.723 compression on a VOIP IOM.                                                                                                                                                                                           |
| resprfl4        | = {0 . . . 128000} - Number of Resources available for G.726 compression on a VOIP IOM.                                                                                                                                                                                           |
| resprfl5        | = {0 . . . 2147483648} - Reserved for future codec profiles.                                                                                                                                                                                                                      |

resprfl6               = {0 . . . 2147483648} - Reserved for future codec  
                          profiles.  
resprfl7               = {0 . . . 2147483648} - Reserved for future codec  
                          profiles.

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
 "IOM-17:TYPE=VOIP,VPSSTATUS=IS,VOIPNETWORKCONN=OOS,
TDMECAVAIL=65535,RESPRFL1=0,RESPRFL2=0,RESPRFL3=0,
RESPRFL4=0,RESPRFL5=0,RESPRFL6=0,RESPRFL7=0
/* RTRV-STATUS-VPS */
;
```

7. Do you need to retrieve information for another VPS module?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

## DLP-626 - RETRIEVE COT OR CFV FOR A SUBSCRIBER

**SUMMARY:** This procedure explains how to retrieve the Customer Originated Trace (COT) or the Call Forwarding – Variable (CFV) status information for an identified subscriber

The user should have knowledge of entering TL1 commands and of their usage. More information about TL1 command syntax, system responses, and an explanation of error messages can be found in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Subscriber number
2. Select your task from the following and go to the indicated step.
  - Retrieve the COT for an identified subscriber. .... [Step 4](#)
  - Retrieve CFV status information of a subscriber ..... [Step 6](#)
  - Finished, no other task in the above list ..... continue to the next step.
3.  **YOU HAVE COMPLETED THIS PROCEDURE.**
4. Retrieve the Customer Originated Trace (COT) for an identified subscriber using the RTRV-SUB-COT command

Command Syntax: RTRV-SUB-COT:[TID]:<subscriberId>:  
[CTAG];

**Input Parameters:**

subscriberID = {Up to 21 digits} – Subscriber number.

Command Example: RTRV-SUB-COT::5088048202;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<subscriberid>:ACTIVATIONTIME=<activationTime>,
 TRACEDN=<tracedN>,TRACETIME=<traceTime>"
;
```

**Output Parameters:**

subscriberID = {Up to 21 digits} – Subscriber number.  
activationTime = {alphanumeric characters} - Date/time stamp the COT was activated.  
traceDN = {Up to 21 digits} – Calling party number being traced.  
traceTime = {alphanumeric characters} - Registration time for the COT.

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
"5088048202:ACTIVATIONTIME=FRI MAY 3 11 34 56 EDT
2002, TRACEDN=5088048788, TRACETIME=FRI MAY 3 11 34 56
EDT 2002"
/* RTRV-SUB-COT */
;
```

5. Do you need to retrieve COT for another subscriber?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).

6. Retrieve the Call Forwarding – Variable (CFV) status information for an identified subscriber using the RTRV-SUB-CFV command

Command Syntax: RTRV-SUB-CFV:[TID]:<subscriberId>:  
[CTAG];

**Input Parameters:**

subscriberID = {Up to 21 digits} – Subscriber number.

Command Example: RTRV-SUB-CFV::5088048202;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<subscriberid>:CFACTIVE=<cfactive>,[CFDN=<cfdn>],
[LASTUPDTTIME=<lastupdttime>]"
;
```

**Output Parameters:**

|              |                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------|
| subscriberID | = {Up to 21 digits} – Subscriber number.                                                                              |
| cfactive     | = ACTIVE - Call forwarding is active.                                                                                 |
|              | = INACTIVE - Call forwarding is not active                                                                            |
|              | = TEMPACTIVE - Call forwarding is temporarily active                                                                  |
| cfdn         | = {Up to 21 digits} – Number to which calls are forwarded.                                                            |
| lastupdttime | = {alphanumeric characters} - Date and time the status of call forwarding last changed for the identified subscriber. |

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
"5088048202:CFACTIVE=INACTIVE,CFDN=NULL,
LASTUPDTTIME=FRI MAY 24 11 34 56 EDT 2002"
/* RTRV-SUB-CFV */
;
```

7. Do you need to retrieve CFV for another subscriber?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-631 - RETRIEVE RDT LAYER 2 AND 3 TIMERS

**SUMMARY:** This procedure explains how to retrieve the values for the Layer 2 and Layer 3 timers and counters from the RDT's Data Link profile for LAPD (Link Access Protocol - D Channel).

The user should have knowledge of entering TL1 commands and of their usage. More information about TL1 command syntax, system responses, and an explanation of error messages can be found in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Interface group number
2. Select your task from the following and go to the indicated step.
  - Retrieve values for Layer 2 timers and counters..... [Step 4](#)
  - Retrieve values for Layer 3 timers and counters..... [Step 6](#)
  - Finished, no other task in the above list..... continue to the next step.
3.  **YOU HAVE COMPLETED THIS PROCEDURE.**
4. Retrieve the values for the Layer 2 timers and counters from the RDT's Data Link profile for LAPD (Link Access Protocol - D Channel) using the RTRV-RDT-L2 command  
Command Syntax: RTRV-RDT-L2:[TID]:<ifGrpNum>:[CTAG];  
**Input Parameters:**  
ifGrpNum = {1 . . . 32767} –GR303 interface group number.  
Command Example: RTRV-RDT-L2::1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ifGrpNum>:DLSAP0WINSIZ=<dlsap0winsiz>,
DLSAP0N200=<dlsap0n200>,DLSAP0T200=<dlsap0t200>,
DLSAP0T203=<dlsap0t203>,DLSAP1WINSIZ=<dlsap1winsiz>,
DLSAP1N200=<dlsap1n200>,DLSAP1T200=<dlsap1t200>,
DLSAP1T203=<dlsap1t203>"
```

**Output Parameters:**

|              |                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------|
| ifGrpNum     | = {1 . . . 32767} –GR303 interface group number.                                                                   |
| dlsap0winsiz | = {1 . . . 7} – Number of unacknowledged information frames to buffer on SAP0.                                     |
| dlsap0n200   | = {1 . . . 10} – Number of times a frame can be retransmitted on SAP0.                                             |
| dlsap0t200   | = {0.1 . . . 0.35} – Maximum time, in seconds, that LAPD waits for acknowledgement of a transmitted frame on SAP0. |
| dlsap0t203   | = { 10 . . . 300} – Maximum time, in seconds, that LAPD link can be idle on SAP0.                                  |
| dlsap1winsiz | = {1 . . . 7} – Number of unacknowledged information frames on SAP1.                                               |
| dlsap1n200   | = {1 . . . 3 . . . 10} – Number of times a frame can be retransmitted on SAP1.                                     |
| dlsap1t200   | = {0.1 . . . 0.35} – Maximum time, in seconds, that LAPD waits for acknowledgement of a transmitted frame on SAP1. |
| dlsap1t203   | = { 10 . . . 300} – Maximum time, in seconds, that LAPD link can be idle on SAP1.                                  |

**Output Example:**

```
Telica 2001-04-20 14-30-00
M 001 COMPLD
 "1:DLSAP0WINSIZ=7,DLSAP0N200=3,DLSAP0T200=0.15,
DLSAP0T203=30,DLSAP1WINSIZ=7,DLSAP1N200=3,DLSAP1T200=0
.15, DLSAP1T203=30"
 /* RTRV-RDT-L2 */
;
```

5. Do you want to retrieve times of another GR303 interface group?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



6. Retrieve the values for the Layer 3 timers from the RDT's Data Link profile for LAPD (Link Access Protocol - D Channel) using the RTRV-RDT-L3 command.

Command Syntax: RTRV-RDT-L3:[TID]:<ifGrpNum>:[CTAG];

**Input Parameters:**

ifGrpNum = {1 ... 32767} –GR303 interface group number.

Command Example: RTRV-RDT-L3::1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ifGrpNum>:
T303=<t303>, T308=<t308>, T396=<t396>, T397=<t397>"
;
```

**Output Parameters:**

ifGrpNum = {1 ... 32767} –GR303 interface group number.

t303 = {0.7 ... 4.0} – Maximum time, in seconds that the IDT and RDT will wait for a reply to a “setup” message.

t313 = {0.4 ... 4.0} – Maximum time, in seconds that the IDT will wait for a reply to a “connect” message.

t396 = {0.7 ... 14.7} – Maximum time, in seconds that the switch will wait for a reply to a “setup message” message after expiration of timer 303.

t397 = {60 ... 180} – Maximum time, in seconds, that the RDT will wait for the Plexus 9000 to acknowledge an INFORMATION message indicating customer has gone on-hook.

**Output Example:**

```
Telica 2001-04-20 14-30-00
M 001 COMPLD
 "1:T303=0.7, T308=4.0, T396=0.7, T397=120"
/* RTRV-RDT-L3 */
;
```

7. Are there other values for Layer 3 timers and counters to retrieve?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-635 - RETRIEVE SIGNALING LINK STATUS AND LAYER2/3 PM DATA AND INITIALIZE LAYER 2/3 REGISTERS

**SUMMARY:** This procedure provides steps to retrieve status of signaling links and performance monitored data of signaling link layer 2 and layer 3 as well as initialize the registers for signaling link layer 2 and 3.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - SS7 link number
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 19](#).

3. Select your task from the following and go to the indicated step.
  - Retrieve statistics for signaling link ..... [Step 5](#)
  - Retrieve PM data for signaling link layer 2 messages ..... [Step 7](#)
  - Clear the counters for signaling link layer 2 messages ..... [Step 9](#)
  - Retrieve PM data for signaling link layer 3 messages ..... [Step 11](#)
  - Clear the counters for signaling link layer 3 messages ..... [Step 15](#)
  - Retrieve PM data for signaling link layer messages ..... [Step 15](#)
  - Clear the counters for signaling link layer 3 messages ..... [Step 17](#)
  - Finished, no other task in the above list ..... continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve status of a signaling link. Double-click the switch, SS7 and *Links*. Right-click the *link*, click *View* and then select *Oper. Info* tab. See [Figure 1](#).

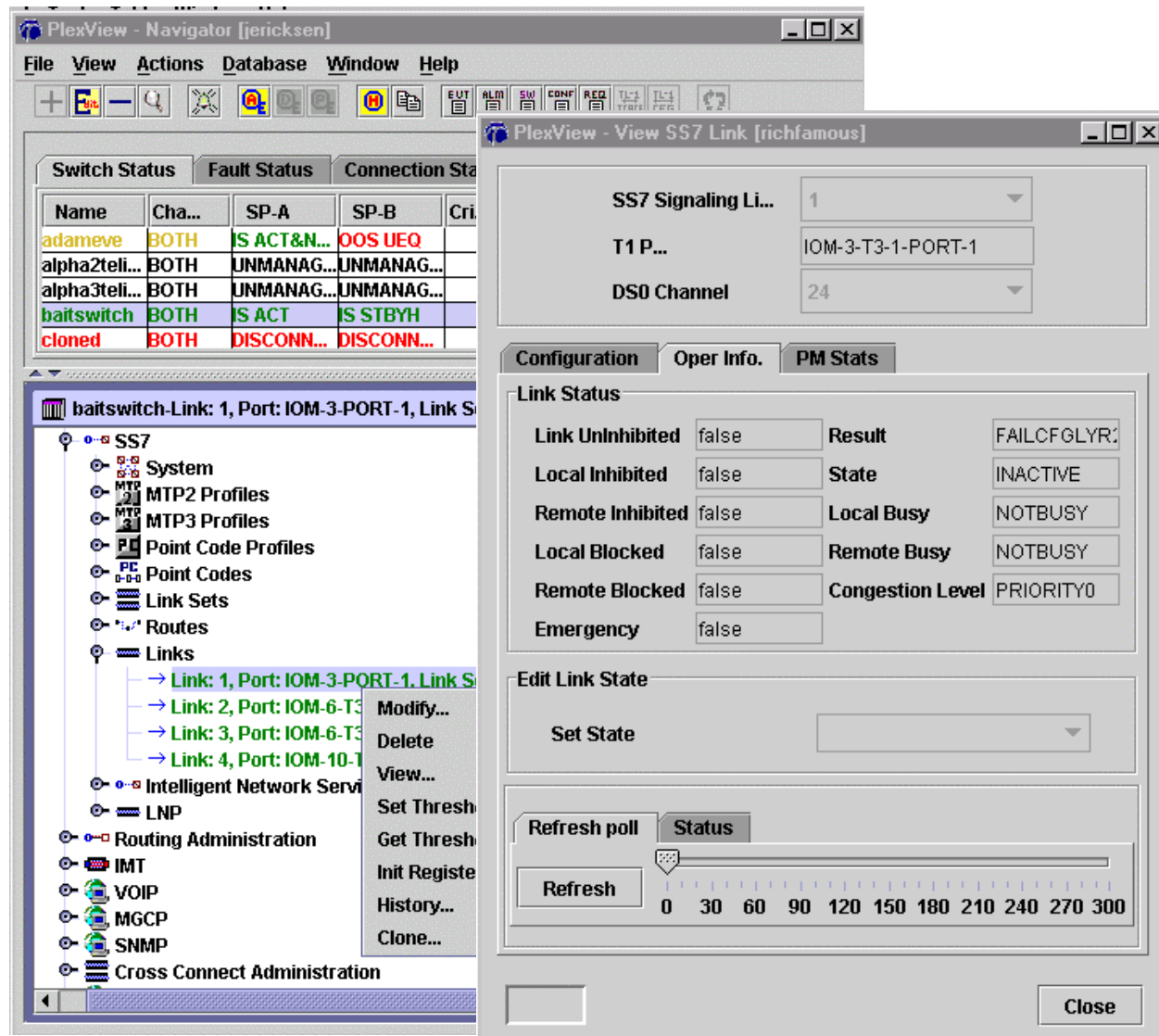


Figure 1. Signaling Link Status

### Parameters and Descriptions

- Link Uninhibited = {true|false} - Signaling link is | is not uninhibited.
- Link Inhibited = {true|false} - Signaling link is | is not inhibited at the local end.
- Remote Inhibited = {true|false} - Signaling link is | is not inhibited at the remote end.
- Local Blocked = {true|false} - Signaling link is | is not blocked at the local end.
- Remote Blocked = {true|false} - Signaling link is | is not blocked at the remote end.

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
| Emergency        | = {true false} - Emergency alignment is   is not indicated           |
| Result           | = FAILCFGLYR2 - Failed: configuration not done at layer 2            |
|                  | = FAILINVCFGLYR2 - Failed: invalid configuration at layer 2          |
|                  | = FAILINVLNKLYR3 - Failed: invalid configuration at layer 3          |
|                  | = SUCCESS - Status request successful                                |
| State            | = ACTIVE - Signaling link at MTP layer 3 is active                   |
|                  | = CON - Signaling link at MTP layer 3 is connecting                  |
|                  | = FAILED - Signaling link at MTP layer 3 has failed                  |
|                  | = INACTIVE - Signaling link at MTP layer 3 is inactive               |
|                  | = SUSPEND - Signaling link at MTP layer 3 is suspended               |
|                  | = WAITCON - Signaling link at MTP layer 3 is waiting to connect      |
| Local Busy       | = {BUSY NOTBUSY} - Signaling link is  is not busy at the local end.  |
| Remote Busy      | = {BUSY NOTBUSY} - Signaling link is  is not busy at the remote end. |
| Congestion Level | = PRIORITY0 - Signaling link highest priority.                       |
|                  | = PRIORITY1 - Signaling link second priority.                        |
|                  | = PRIORITY2 - Signaling link third priority.                         |
|                  | = PRIORITY3 - Signaling link lowest priority.                        |

6. Do you want to check or retrieve status for another signaling link?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 3](#)

7. Retrieve current and historical performance data for signaling link layer 2. Double-click the switch, *SS7* and *Links*. Right-click the *link*, click *View* and then select *PM Stats* tab at the top and the *SLK2* tab toward the bottom. See [Figure 2](#).

**Parameters and Descriptions**

|               |                                                                                            |
|---------------|--------------------------------------------------------------------------------------------|
| DURLNKINSRV   | = Number of minutes the link has been in-service                                           |
| DURLNKLOCCONG | = Number of minutes the link has been locally congested                                    |
| FISU          | = Number of FISUs on the link                                                              |
| IFSIOOCT      | = Number of IF/SIO (Information Field / Service Indicator Octet) octets on the link        |
| LASTINIT      | = Number of minutes since initialization of all counters                                   |
| LASTINITNA    | = Number of minutes since initialization of all counters for which there is no direction . |
| LASTINITT     | = Number of minutes since initialization of all TRMT (transmit) counters.                  |
| LNKFAILABNRML | = Number of times link has failed due to abnormal FIBR/BSNR.                               |
| LNKFAILALIGN  | = Number of times link has failed due to inability to complete alignment procedure.        |

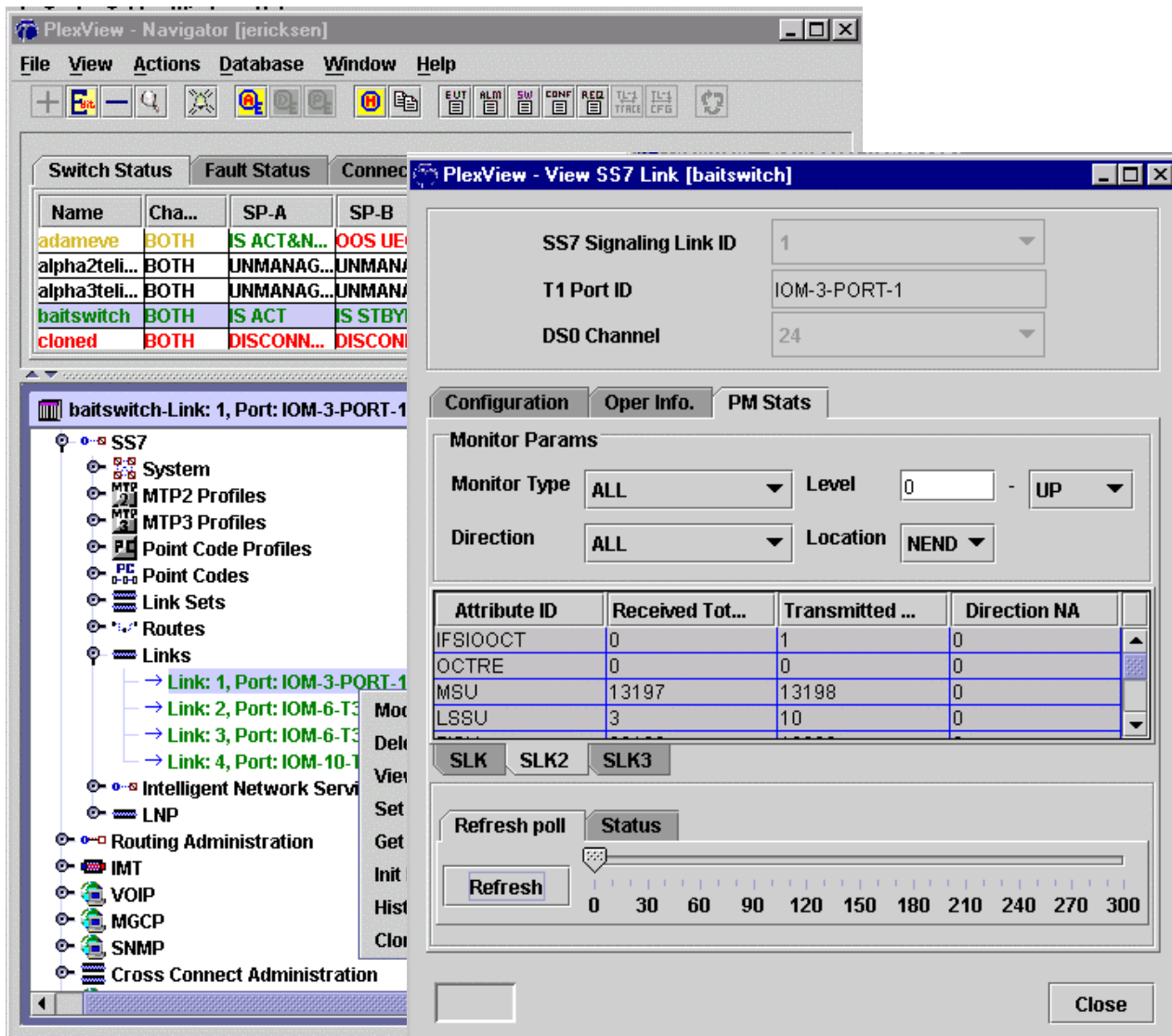


Figure 2. Signaling Link Layer 2 PM Status

|               |                                                                             |
|---------------|-----------------------------------------------------------------------------|
| LNKFAILCONG   | = Number of times link has failed due to excessive congestion               |
| LNKFAILDLYACK | = Number of times link has failed due to delay of acknowledgement messages. |
| LNKFAILERR    | = Number of times link has failed due to excessive error rate.              |
| LNKFAILFORALL | = Number of times link has failed for any reason.                           |
| LSSU          | = Number of LSSUs on the link.                                              |
| MSU           | = Number of message signal units on the link.                               |
| NEGACK        | = Number of times negative acknowledgment messages on the link.             |
| OCTRE         | = Number of octets retransmitted on the link.                               |

|              |                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------|
| SIFSIOOCT    | = Number of SIF/SIO (Service Information Field / Service Indicator Octet) octets on the link. |
| SIGUNITRXERR | = Number of signaling units in error on the link                                              |

8. Do you want to initialize registers for signaling link layer 2?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 3](#).
9. Clear or initialize the signaling link layer 2 counters. Double-click the switch, *SS7* and *Links*. Right-click the *link*, click *Modify* and then select *PM Stats* tab at the top and the *SLK2* tab toward the bottom. Make desired changes and then click *Ok* or *Apply*. See [Figure 2](#).
10. Do you want to initialize signaling link registers for another SS7 link?  
If **YES**, then go to [Step 9](#).  
If **NO**, then go to [Step 3](#).
11. Retrieve current and historical performance data for signaling link layer 3. Double-click the switch, *SS7* and *Links*. Right-click the *link*, click *View and* then select *PM Stats* tab at the top and the *SLK3* tab toward the bottom. See [Figure 3](#).

#### **Parameters and Descriptions**

|                  |                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------|
| CHNGBCK          | = Number of changeback messages received or transmitted.                                                        |
| CHNGBCKACK       | = Number of changeback acknowledgement messages received or transmitted.                                        |
| CHNGOVER         | = Number of changeover messages received or transmitted.                                                        |
| CHNGOVERACK      | = Number of changeover acknowledgement messages received or transmitted.                                        |
| DUROFLNKCONG     | = Duration of last link congestion in minutes                                                                   |
| DUROFLNKUNAV     | = Duration of last link unavailability in minutes                                                               |
| EMERGCHNGOVER    | = Number of emergency changeover messages received or transmitted.                                              |
| EMERGCHNGOVERACK | = Number of emergency changeover acknowledgement messages received or transmitted.                              |
| INVPDU           | = Number of invalid protocol data units (protocol messages) received                                            |
| LASTINIT         | = Number of minutes since initialization of receive or transmit counters                                        |
| LASTINITNA       | = Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT) |
| LNKCONACK        | = Number of link connection acknowledgement messages received or transmitted.                                   |

More parameters on the following page.

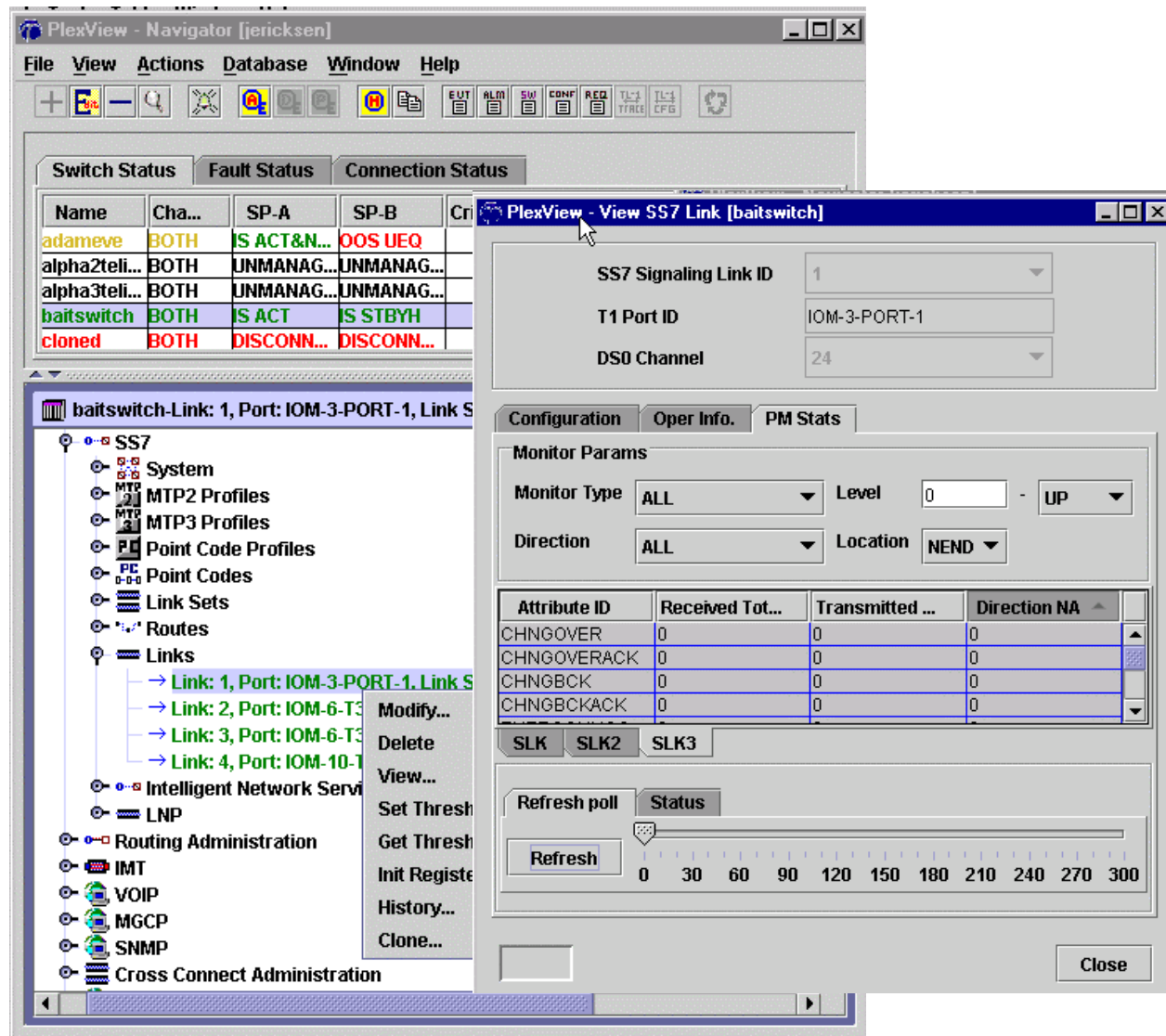


Figure 3. Signaling Link Layer 3 PM Status

### More Parameters and Descriptions

- LNKCONGATTHRSHLD1 = Number of links at congestion level 1
- LNKCONGATTHRSHLD2 = Number of links at congestion level 2
- LNKCONGATTHRSHLD3 = Number of links at congestion level 3
- LNKCONORD = Number of link connection order messages received or transmitted.
- LNKFORCEUNINH = Number of link forced uninhibit messages received or transmitted.
- LNKINH = Number of link inhibit messages received or transmitted.
- LNKINHACK = Number of link inhibit acknowledgement messages received or transmitted.



|              |                                                                                         |
|--------------|-----------------------------------------------------------------------------------------|
| LNKINHDENY   | = Number of link inhibit denied messages received or transmitted.                       |
| LNKLOCINHTST | = Number of link locally inhibited test messages received or transmitted.               |
| LNKRMTINHTST | = Number of link remotely inhibited test messages received or transmitted.              |
| LNKTST       | = Number of link test messages received or transmitted.                                 |
| LNKTSTACK    | = Number of link test acknowledgement messages received or transmitted.                 |
| LNKUNINH     | = Number of link uninhibit messages received or transmitted.                            |
| LNKUNINHACK  | = Number of link uninhibit acknowledgement messages received or transmitted.            |
| MSU          | = Number of message signal units received or transmitted. on the link                   |
| PRI0DROP     | = Number of messages with priority 0 dropped                                            |
| PRI1DROP     | = Number of messages with priority 1 dropped                                            |
| PRI2DROP     | = Number of messages with priority 2 dropped                                            |
| PRI3DROP     | = Number of messages with priority 3 dropped                                            |
| SIFOCT       | = Number of SIF (Service Information Field) octets received or transmitted on the link. |
| SIOOCT       | = Number of SIO (Service Indicator Octet) octets received or transmitted on the link.   |
| TXCONGDROP   | = Number of message signal units dropped due to link congestion                         |
| TXMSGDROP    | = Number of transmit messages dropped                                                   |

12. Do you want to initialize registers for signaling link layer 3?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

13. Clear or initialize the signaling link layer 3 counters. Double-click the switch, *SS7* and *Links*. Right-click the *link*, click *Modify* and then select *PM Stats* tab at the top and the *SLK3* tab toward the bottom. Make desired changes and then click *Ok* or *Apply*. See [Figure 3](#).

14. Do you want to initialize signaling link layer 3 registers for another SS7 link?

If **YES**, then go to [Step 13](#).

If **NO**, then go to [Step 3](#).

15. Retrieve current and historical performance data gathered from MTP3 signaling points. Retrieve current and historical performance data for MTP3 signaling points. Right-click the Switch, and *Modify*. Click the *PM Stats* tab and then click *Refresh* near the bottom of the panel for latest information. See [Figure 4](#).

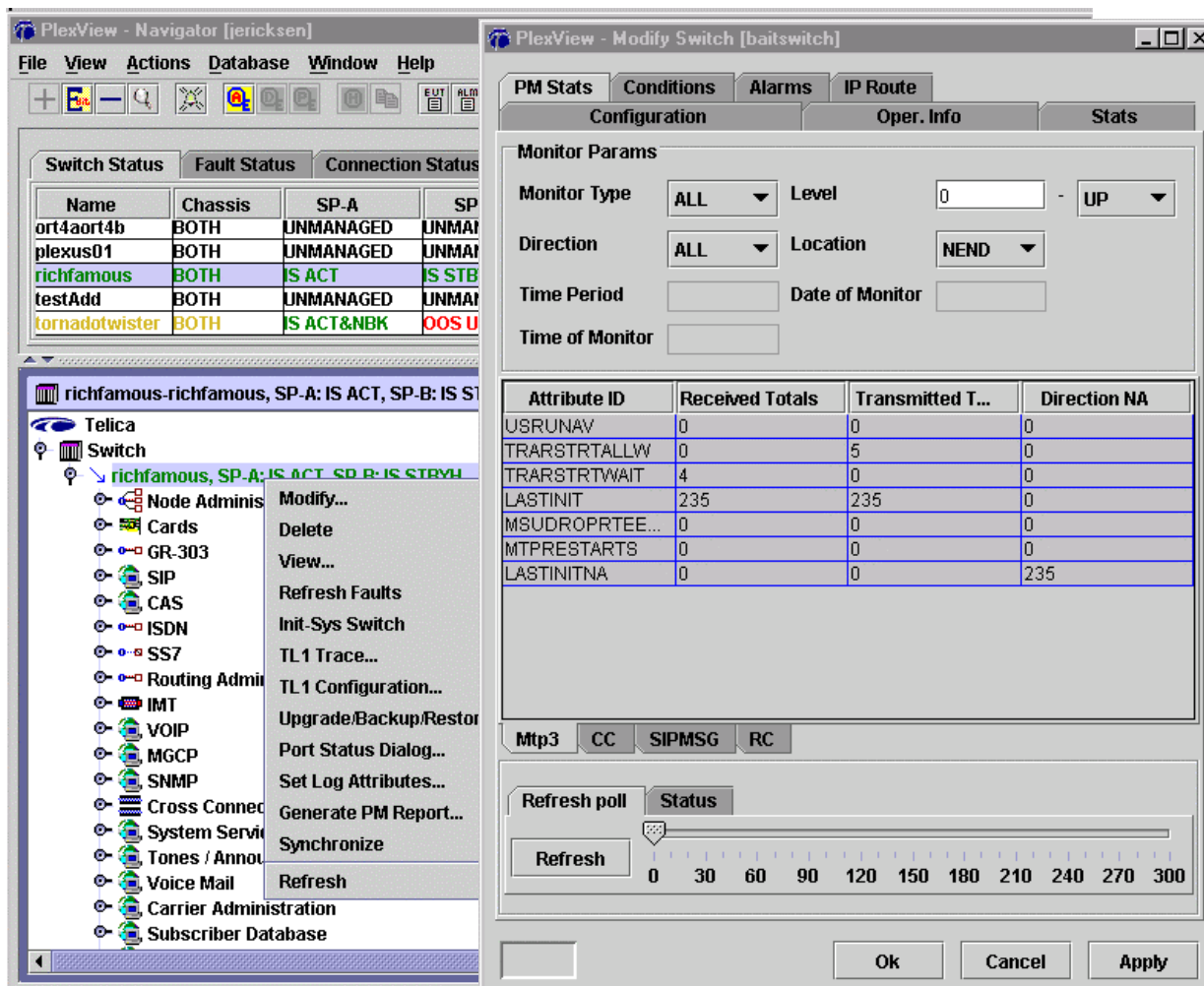


Figure 4. MPT3 PM Status

### Parameters and Descriptions

|                |                                                                                           |
|----------------|-------------------------------------------------------------------------------------------|
| LASTINIT       | = Number of minutes since initialization of all counters                                  |
| LASTINITNA     | = Number of minutes since initialization of all counters for which there is no direction. |
| MSUDROPRTTEERR | = Number of message signaling units dropped due to a routing data error                   |
| MTPRESTARTS    | = Number of MTP3 restarts                                                                 |
| TRARSTRALLW    | = Number of traffic restart allowed messages.                                             |
| TRARSTRWAIT    | = Number of traffic restart waiting messages.                                             |
| USRUNAV        | = Number of user part unavailable messages.                                               |

16. Do you want to initialize registers for MTP3?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

17. Clear or initialize the MTP3 signaling point counters. Right-click a received status item and then click the *Init Register* block. Make required changes in Init Register MTP3 screen and then click *Apply*. See [Figure 5](#).

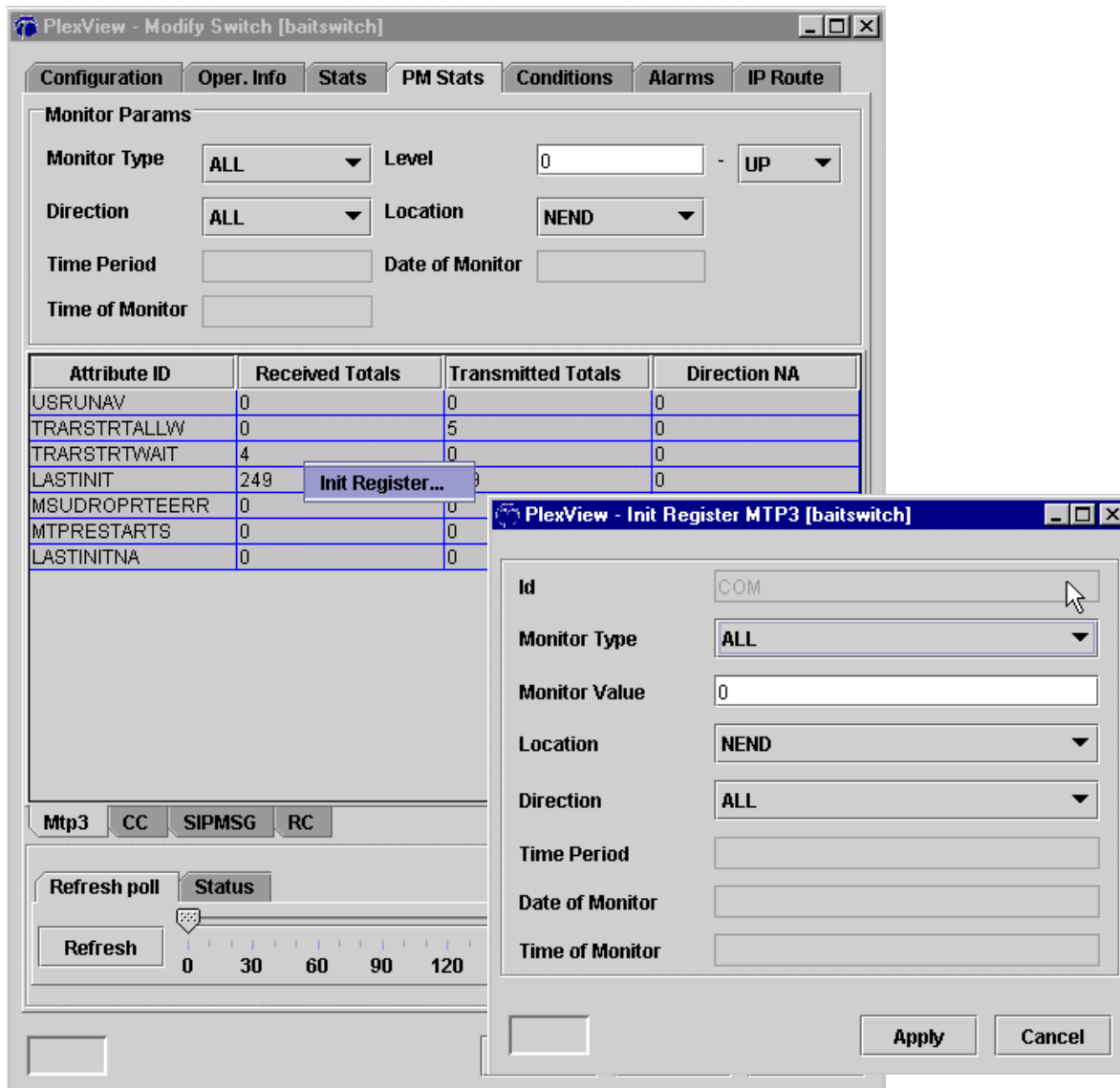


Figure 5. Initialization of Registers

18. Do you want to initialize MTP3 registers again?  
If YES, then go to [Step 17](#).  
If NO, then go to [Step 3](#)

19. Select your task from the following and go to the indicated step.

- Retrieve PM data for signaling link layer 2 messages ..... [Step 21](#)
- Clear the counters for signaling link layer 2 messages ..... [Step 23](#)
- Retrieve PM data for signaling link layer 3 messages ..... [Step 25](#)
- Clear the counters for signaling link layer 3 messages ..... [Step 27](#)
- Finished, no other task in the above list..... continue to the next step.

20.  **YOU HAVE COMPLETED THIS PROCEDURE.**

21. Retrieve current and historical performance data for signaling link layer 2 using the RTRV-PM-SLKL2 command. .

Command Syntax: RTRV-PM-SLKL2:[TID]:<ss7LnkId>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>];

**Input Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.  
montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
monlev - {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.  
locn = **NEND** - Near end counters to be initialized.  
dirn = **ALL** - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-SLKL2::1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<ss7LnkId>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.  
montype = DURLNKINSRV - Number of minutes the link has been in-service

|        |                                                                                                                              |
|--------|------------------------------------------------------------------------------------------------------------------------------|
|        | = DURLNKLOCCONG - Number of minutes the link has been locally congested                                                      |
|        | = FISURX - Number of FISUs received on the link                                                                              |
|        | = FISUTX - Number of FISUs transmitted on the link                                                                           |
|        | = LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT) |
|        | = LASTINITRCV - Number of minutes since initialization of all RCV (receive) counters                                         |
|        | = LASTINITTRMT - Number of minutes since initialization of all TRMT (transmit) counters                                      |
|        | = LNKFAILABNRML - Number of times link has failed due to abnormal FIBR/BSNR                                                  |
|        | = LNKFAILALIGN - Number of times link has failed due to inability to complete alignment procedure                            |
|        | = LNKFAILCONG - Number of times link has failed due to excessive congestion                                                  |
|        | = LNKFAILDLYACK - Number of times link has failed due to delay of acknowledgement messages                                   |
|        | = LNKFAILERR - Number of times link has failed due to excessive error rate                                                   |
|        | = LNKFAILFORALL - Number of times link has failed for any reason                                                             |
|        | = LSSURX - Number of LSSUs received on the link                                                                              |
|        | = LSSUTX - Number of LSSUs transmitted on the link                                                                           |
|        | = MSURX - Number of message signal units received on the link                                                                |
|        | = MSUTX - Number of message signal units transmitted on the link                                                             |
|        | = NEGACKRX - Number of times negative acknowledgment messages received on the link                                           |
|        | = OCTRETX - Number of octets retransmitted on the link                                                                       |
|        | = SIFSIOOCTRX - Number of SIF/SIO (Service Information Field / Service Indicator Octet) octets received on the link          |
|        | = SIFSIOOCTTX - Number of SIF/SIO (Service Information Field / Service Indicator Octet) octets transmitted on the link       |
|        | = SIGUNITRXERR - Number of signaling units received in error on the link                                                     |
| monval | = {0 – 4,294,967,295} - Monitored value.                                                                                     |
| monlev | = {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                      |
| locn   | = NEND - Near end counters to be initialized.                                                                                |
| dirn   | = ALL - All directions of the data stored in statistics counters.                                                            |
|        | = NA - Direction not applicable.                                                                                             |
|        | = RCV - Receive direction only of the data stored in statistics counters.                                                    |
|        | = TRMT - Transmit direction only of the data stored in statistics counters.                                                  |

**Output Example:**

```
telica 2002-11-13 13:38:11
M 0 COMPLD
"1:IFSI00CTTX,1,0-UP,NEND,ALL"
"1:OCTRETX,0,0-UP,NEND,ALL"
"1:MSUTX,12376,0-UP,NEND,ALL"
"1:LSSUTX,3,0-UP,NEND,ALL"
"1:FISUTX,12388,0-UP,NEND,ALL"
"1:LASTINITRMT,109,0-UP,NEND,ALL"
"1:SIGUNITRXERR,0,0-UP,NEND,ALL"
"1:NEGACKRX,0,0-UP,NEND,ALL"
"1:SIFSI00CTRX,3,0-UP,NEND,ALL"
"1:MSURX,12387,0-UP,NEND,ALL"
"1:LSSURX,8,0-UP,NEND,ALL"
"1:FISURX,49449,0-UP,NEND,ALL"
"1:LASTINITTRCV,109,0-UP,NEND,ALL"
"1:LNKFAILFORALL,0,0-UP,NEND,ALL"
"1:LNKFAILABNRML,0,0-UP,NEND,ALL"
"1:LNKFAILDLYACK,0,0-UP,NEND,ALL"
"1:LNKFAILERR,0,0-UP,NEND,ALL"
"1:LNKFAILCONG,0,0-UP,NEND,ALL"
"1:LNKFAILALIGN,0,0-UP,NEND,ALL"
"1:LASTINITNA,109,0-UP,NEND,ALL"
"1:DURLNKINSRV,4062,0-UP,NEND,ALL"
"1:DURLNKLOCCONG,0,0-UP,NEND,ALL"
/* RTRV-PM-SLKL2 */
;
```

22. Do you want to initialize registers for signaling link layer 2?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 19](#).

23. Clear or initialize the signaling link layer 2 counters using the INIT-REG-SLKL2 command.

Command Syntax: INIT-REG-SLKL2:[TID]:<ss7LnkId>:  
[CTAG]:<montype>,[<monval>],[<locn>],  
[<dirn>];

**Input Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.  
montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
= UPDSTSTHRSHLD - Threshold value for updating the standby processor's statistics.  
monnval = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".

locn = **NEND** - Near end counters to be initialized.  
dirn = **ALL** - All directions of the data stored in statistics counters.  
= **NA** - Direction not applicable.  
= **RCV** - Receive direction only of the data stored in statistics counters.  
= **TRMT** - Transmit direction only of the data stored in statistics counters.

Command Example: INIT-REG-SLKL2::1;

24. Do you want to initialize signaling link registers for another SS7 link?

If **YES**, then go to [Step 23](#).

If **NO**, then go to [Step 19](#).

25. Retrieve current and historical performance data for signaling link layer 3 using the RTRV-PM-SLKL3 command. .

Command Syntax: RTRV-PM-SLKL3:[TID]:<ss7LnkId>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>;

**Input Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.  
montype = **ALL** - All statistics counters of the group determined by the *dirn* parameter.  
monlev = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.  
locn = **NEND** - Near end counters to be initialized.  
dirn = **ALL** - All directions of the data stored in statistics counters.  
= **NA** - Direction not applicable.  
= **RCV** - Receive direction only of the data stored in statistics counters.  
= **TRMT** - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-SLKL3::1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7LnkId>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.

montype = CHNGBCKACKRX - Number of changeback acknowledgement messages received

= CHNGBCKACKTX - Number of changeback acknowledgement messages transmitted

= CHNGBCKRX - Number of changeback messages received

= CHNGBCKTX - Number of changeback messages transmitted

= CHNGOVERACKRX - Number of changeover acknowledgement messages received

= CHNGOVERACKTX - Number of changeover acknowledgement messages transmitted

= CHNGOVERRX - Number of changeover messages received

= CHNGOVERTX - Number of changeover messages transmitted

= DUROFLNKCONG - Duration of last link congestion in minutes

= DUROFLNKUNAV - Duration of last link unavailability in minutes

= EMERGCHNGOVERACKRX - Number of emergency changeover acknowledgement messages received

= EMERGCHNGOVERACKTX - Number of emergency changeover acknowledgement messages transmitted

= EMERGCHNGOVERRX - Number of emergency changeover messages received

= EMERGCHNGOVERTX - Number of emergency changeover messages transmitted

= INVPDURX - Number of invalid protocol data units (protocol messages) received

= LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT)

= LASTINITRCV - Number of minutes since initialization of all RCV (receive) counters

= LASTINITTRMT - Number of minutes since initialization of all TRMT (transmit) counters

= LNKCONACKRX - Number of link connection acknowledgement messages received

= LNKCONACKTX - Number of link connection acknowledgement messages transmitted

= LNKCONGATTHRSHLD0 - Number of links at congestion level 0

= LNKCONGATTHRSHLD1 - Number of links at congestion level 1

= LNKCONGATTHRSHLD2 - Number of links at congestion level 2

= LNKCONGATTHRSHLD3 - Number of links at congestion level 3



- = LNKCONORDRX - Number of link connection order messages received
- = LNKCONORDTX - Number of link connection order messages transmitted
- = LNKFORCEUNINHRX - Number of link forced uninhibit messages received
- = LNKFORCEUNINHTX - Number of link forced uninhibit acknowledgement messages transmitted
- = LNKINHACKRX - Number of link inhibit acknowledgement messages received
- = LNKINHACKTX - Number of link inhibit acknowledgement messages transmitted
- = LNKINHDENYRX - Number of link inhibit denied messages received
- = LNKINHDENYTX - Number of link inhibit denied messages transmitted
- = LNKINHRX - Number of link inhibit messages received
- = LNKINHTX - Number of link inhibit messages transmitted
- = LNKLOCINHTSTRX - Number of link locally inhibited test messages received
- = LNKLOCINHTSTTX - Number of link locally inhibited test messages transmitted
- = LNKRMTINHTSTRX - Number of link remotely inhibited test messages received
- = LNKRMTINHTSTTX - Number of link remotely inhibited test messages transmitted
- = LNKSTACKRX - Number of link test acknowledgement messages received
- = LNKSTACKTX - Number of link test acknowledgement messages transmitted
- = LNKSTRX - Number of link test messages received
- = LNKSTTX - Number of link test messages transmitted
- = LNKUNINHACKRX - Number of link uninhibit acknowledgement messages received
- = LNKUNINHACKTX - Number of link uninhibit acknowledgement messages transmitted
- = LNKUNINHRX - Number of link uninhibit messages received
- = LNKUNINHTX - Number of link uninhibit messages transmitted
- = MSURX - Number of message signal units received on the link
- = MSUTX - Number of message signal units transmitted on the link
- = PRI0DROP - Number of messages with priority 0 dropped
- = PRI1DROP - Number of messages with priority 1 dropped
- = PRI2DROP - Number of messages with priority 2 dropped
- = PRI3DROP - Number of messages with priority 3 dropped
- = SIFOCTRX - Number of SIF (Service Information Field) octets received on the link

|        |                                                                                                                                                          |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | = SIFOCTTX - Number of SIF (Service Information Field) octets transmitted on the link                                                                    |
|        | = SIOOCTRX - Number of SIO (Service Indicator Octet) octets received on the link                                                                         |
|        | = SIOOCTTX - Number of SIO (Service Indicator Octet) octets transmitted on the link                                                                      |
|        | = TXCONGDROP - Number of message signal units dropped due to link congestion                                                                             |
|        | = TXCTRLRX - Number of transfer controlled messages received                                                                                             |
|        | = TXCTRLTX - Number of transfer controlled messages transmitted                                                                                          |
|        | = TXMSGDROP - Number of transmit messages dropped                                                                                                        |
|        | = UPDSTSTHRSHLD - Threshold value for the increase in the number of established calls that triggers an update to the statistics on the standby processor |
| monval | = {0 – 4,294,967,295} - Monitored value.                                                                                                                 |
| monlev | = {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                                  |
| locn   | = NEND - Near end counters to be initialized.                                                                                                            |
| dirn   | = ALL - All directions of the data stored in statistics counters.                                                                                        |
|        | = NA - Direction not applicable.                                                                                                                         |
|        | = RCV - Receive direction only of the data stored in statistics counters.                                                                                |
|        | = TRMT - Transmit direction only of the data stored in statistics counters.                                                                              |

### Output Example:

```
telica 2002-11-13 14:30:37
M 0 RTRV
"1:CHNGOVERTX,0,0-UP,NEND,ALL"
"1:CHNGOVERACKTX,0,0-UP,NEND,ALL"
"1:CHNGBCKTX,0,0-UP,NEND,ALL"
"1:CHNGBCKACKTX,0,0-UP,NEND,ALL"
"1:EMERGCHNGOVERTX,0,0-UP,NEND,ALL"
"1:EMERGCHNGOVERACKTX,0,0-UP,NEND,ALL"
"1:LNKINHTX,0,0-UP,NEND,ALL"
"1:LNKUNINHTX,0,0-UP,NEND,ALL"
"1:LNKINHACKTX,0,0-UP,NEND,ALL"
"1:LNKUNINHACKTX,0,0-UP,NEND,ALL"
"1:LNKINHDENYTX,0,0-UP,NEND,ALL"
"1:LNKFORCEUNINHTX,0,0-UP,NEND,ALL"
"1:LNKLOCINHTSTTX,0,0-UP,NEND,ALL"
"1:LNKRMTINHTSTTX,0,0-UP,NEND,ALL"
"1:LNKCONORDTX,0,0-UP,NEND,ALL"
"1:LNKCONACKTX,0,0-UP,NEND,ALL"
"1:LNKTSTTX,4088,0-UP,NEND,ALL"
"1:LNKTSTACKTX,8172,0-UP,NEND,ALL"
```

```
"1:TXMSGDROP,0,0-UP,NEND,ALL"
"1:TXCONGDROP,0,0-UP,NEND,ALL"
"1:SIFOCTTX,150502,0-UP,NEND,ALL"
"1:SIOOCTTX,12463,0-UP,NEND,ALL"
"1:MSUTX,12463,0-UP,NEND,ALL"
"1:LASTINITTRMT,161,0-UP,NEND,ALL" =
"1:CHNGOVERRX,0,0-UP,NEND,ALL"
"1:CHNGOVERACKRX,0,0-UP,NEND,ALL"
"1:CHNGBCKRX,0,0-UP,NEND,ALL"
"1:CHNGBCKACKRX,1,0-UP,NEND,ALL"
"1:EMERGCHNGOVERRX,0,0-UP,NEND,ALL"
"1:EMERGCHNGOVERACKRX,0,0-UP,NEND,ALL"
"1:LNKINHRX,0,0-UP,NEND,ALL"
"1:LNKUNINHRX,0,0-UP,NEND,ALL"
"1:LNKINHACKRX,0,0-UP,NEND,ALL"
"1:LNKUNINHACKRX,0,0-UP,NEND,ALL"
"1:LNKINHDENYRX,0,0-UP,NEND,ALL"
"1:LNKFORCEUNINHRX,0,0-UP,NEND,ALL"
"1:LNKLOCINHTSTRX,0,0-UP,NEND,ALL"
"1:LNKRMTINHTSTRX,0,0-UP,NEND,ALL"
"1:LNKCONORDRX,0,0-UP,NEND,ALL"
"1:LNKCONACKRX,0,0-UP,NEND,ALL"
"1:LNKTSTRX,8172,0-UP,NEND,ALL"
"1:LNKTSTACKRX,4088,0-UP,NEND,ALL"
"1:INVPDURX,0,0-UP,NEND,ALL"
"1:SIFOCTRX,151870,0-UP,NEND,ALL"
"1:SIOOCTRX,12473,0-UP,NEND,ALL"
"1:MSURX,12473,0-UP,NEND,ALL"
"1:LASTINITRCV,161,0-UP,NEND,ALL"
"1:LNKCONGATTHRSHLD1,0,0-UP,NEND,ALL"
"1:LNKCONGATTHRSHLD2,0,0-UP,NEND,ALL"
"1:LNKCONGATTHRSHLD3,0,0-UP,NEND,ALL"
"1:LASTINITNA,161,0-UP,NEND,ALL"
"1:DUROFLNKUNAV,0,0-UP,NEND,ALL"
"1:DUROFLNKCONG,0,0-UP,NEND,ALL"
"1:UPDSTSTHRSHLD,200,0-UP,NEND,ALL"
/* RTRV-PM-SLKL3 */
```

;

26. Do you want to initialize registers for signaling link layer 3?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 19](#).

27. Clear or initialize the signaling link layer 3 counters using the INIT-REG-SLKL3 command.

Command Syntax:   INIT-REG-SLKL3:[TID]:<ss7LnkId>:  
                                  [CTAG]:<montype>,[<monval>],[<locn>],  
                                  [<dirn>];

**Input Parameters:**

ss7LnkId           = {1 . . . 40} – Signaling link.  
montype           = ALL - All statistics counters of the group determined by the *dirn* parameter.  
monnval           = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is “0” if the value of *montype* is “ALL”.  
locn               = **NEND** - Near end counters to be initialized.  
dirn               = **ALL** - All directions of the data stored in statistics counters.  
                    = NA - Direction not applicable.  
                    = RCV - Receive direction only of the data stored in statistics counters.  
                    = TRMT - Transmit direction only of the data stored in statistics counters.

Command Example:   INIT-REG-SLKL3::1:::ALL;

28. Do you want to initialize signaling link layer 3 registers for another SS7 link?

If **YES**, then go to [Step 27](#).

If **NO**, then go to [Step 19](#).

## DLP-636 - RETRIEVE PM DATA FOR SS7 ROUTE AND INITIALIZE REGISTERS

**SUMMARY:** This procedure provides steps to retrieve performance monitoring data of an SS7 route and initialize the those registers.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Point code and link set ID number
2. Select your task from the following and go to the indicated step.
  - Retrieve PM data for SS7 route..... [Step 4](#)
  - Clear the counters for SS7 route ..... [Step 6](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve current and historical performance data for SS7 route using the RTRV-PM-SS7ROUTE command. .

Command Syntax: RTRV-PM-SS7ROUTE:[TID]:<routeSs7>:  
[CTAG]:[<montype>],[<monlev>],  
[<locn>],[<dirn>;

**Input Parameters:**

routeSs7 = ({0-255}-{0-255}-{0-255})-{1 . . . 20} which is  
<PCAID>-<LSETAID> - SS7 Route.

montype = ALL - All statistics counters of the group determined by the *dirn*  
parameter.

monlev = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored  
parameter.

locn = **NEND** - Near end counters to be initialized.

dirn           = **ALL** - All directions of the data stored in statistics counters.  
              = **NA** - Direction not applicable.  
              = **RCV** - Receive direction only of the data stored in statistics counters.  
              = **TRMT** - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-SS7ROUTE::2-2-2-1;

**Output Format:**

```
 SID DATE TIME
M CTAG COMPLD
 "<routeSs7>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

routeSs7       = ({0-255}-{0-255}-{0-255})-{1 . . . 20} which is  
                  <PCAID>-<LSETAID> - SS7 Route.

montype        = DURLSETDIVER - Duration in minutes that traffic on the link  
                  set is diverted on low priority route.  
                  = LASTINITNA - Number of minutes since initialization of all  
                  counters for which there is no direction (neither RCV nor  
                  TRMT)  
                  = TRFDIVER - Number of times traffic on the link set has been  
                  diverted on low priority route.

monval         = {0 – 4,294,967,295} - Monitored value.

monlev         = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored  
                  parameter.

locn           = NEND - Near end counters to be initialized.

dirn           = **ALL** - All directions of the data stored in statistics counters.  
                  = **NA** - Direction not applicable.  
                  = **RCV** - Receive direction only of the data stored in statistics  
                  counters.  
                  = **TRMT** - Transmit direction only of the data stored in statistics  
                  counters.

**Output Example:**

```
telica 2002-11-13 13:38:11
M 0 COMPLD
 "2-2-2-1:DURLSETDIVER,1,0-UP,NEND,ALL"
 "2-2-2-1:LASTINITNA,101,0-UP,NEND,ALL"
 "2-2-2-1:TRFDIVER,2,0-UP,NEND,ALL"
 /* RTRV-PM-SS7ROUTE */
;
```

5. Do you want to initialize registers for an SS7 route?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 2](#).

6. Clear or initialize the registers using the INIT-REG-SS7ROUTE command.

Command Syntax:   INIT-REG-SS7ROUTE:[TID]:<ss7LnkId>:  
                          [CTAG]:<montype>,[<monval>],[<locn>],  
                          [<dirn>];

**Input Parameters:**

routeSs7           = ({0-255}-{0-255}-{0-255})-{1...20} which is  
                          <PCAID>-<LSETAID> - SS7 Route.

montype           = ALL - All statistics counters of the group determined by the *dirn*  
                          parameter.

monnval           = {0...9999} - Value to which the counters identified by  
                          *montype* are to be initialized. The value is "0" if the value of  
                          *montype* is "ALL".

locn               = **NEND** - Near end counters to be initialized.

dirn               = **ALL** - All directions of the data stored in statistics counters.

                      = NA - Direction not applicable.

                      = RCV - Receive direction only of the data stored in statistics  
                          counters.

                      = TRMT - Transmit direction only of the data stored in statistics  
                          counters.

Command Example:   INIT-REG-SS7ROUTE::2-2-2-1;

7. Do you want to initialize registers for another SS7 route?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

**NOTES:**



## DLP-640 - RETRIEVE SS7 ROUTE STATUS AND PM DATA AND INITIALIZE SS7 ROUTE REGISTERS

**SUMMARY:** This procedure provides steps to retrieve status of SS7 routes and performance monitored data of SS7 routes as well as initialize the SS7 route registers.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - Point code
  - SS7 link setnumber
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.  
If using **TL1**, then go to [Step 11](#).
3. Select your task from the following and go to the indicated step.
  - Retrieve status of SS7 route ..... [Step 5](#)
  - Retrieve PM data SS7 route ..... [Step 7](#)
  - Clear the counters for SS7 route messages ..... [Step 9](#)
  - Finished, no other task in the above list..... continue to the next step.
4.  **YOU HAVE COMPLETED THIS PROCEDURE.**
5. Retrieve status of a SS7 route. Double-click *SS7* and then *Routes*. Right-click a route and select *View, Oper. Info* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 1](#).

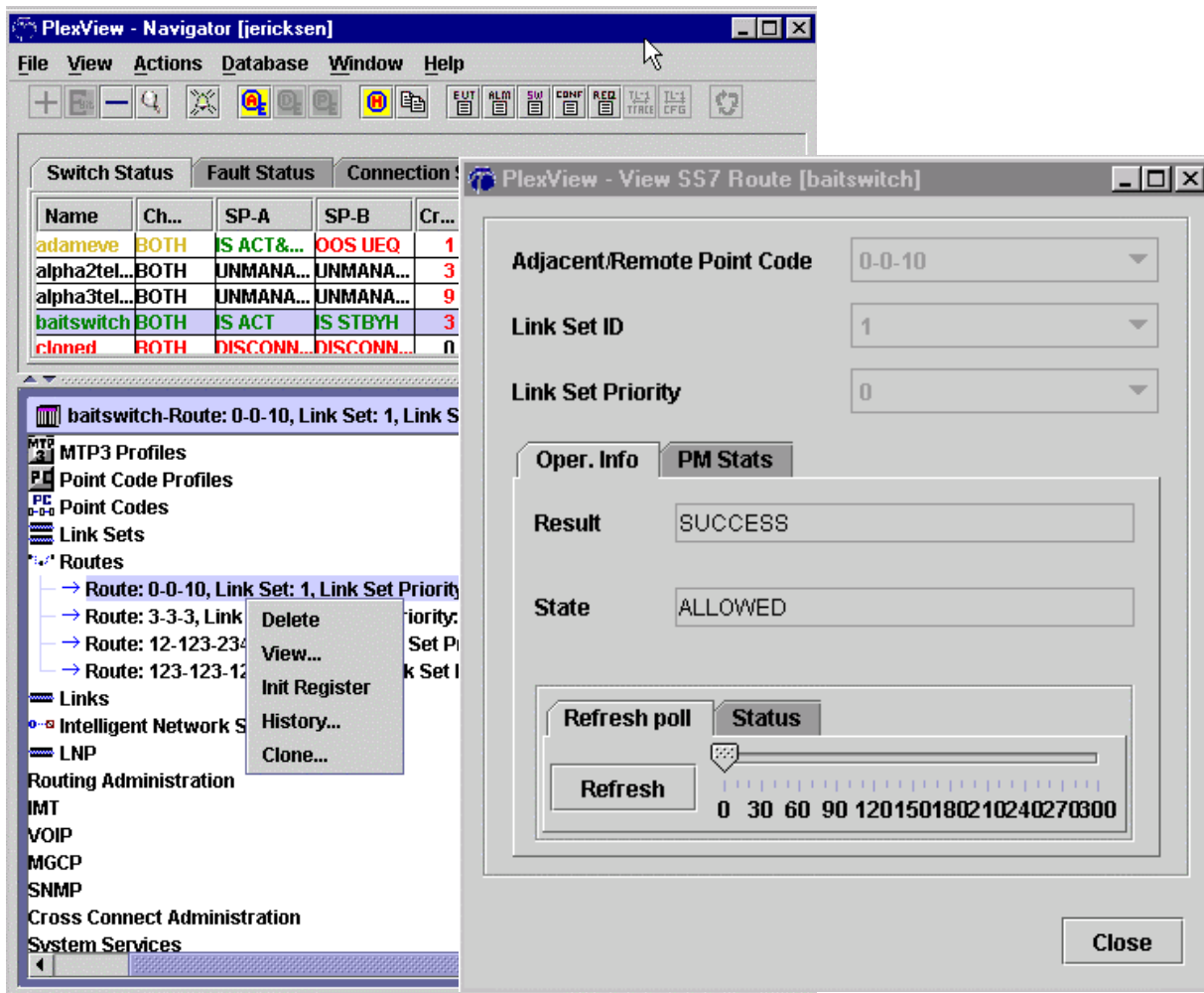


Figure 1. SS7 Route Status

**Output Parameters:**

Adjacent/Remote

Point Code = {0-255}-{0-255}-{0-255} – Adjacent or remote point code.

Link Set ID = {1-20} – Link set ID number

Link Set Priority = {0-3} - Priority level.

Result = FAILINGLYR3 - MTP layer 3 test on the SS7 route failed.

= SUCCESS - MTP layer 3 test on the SS7 route passed.

State = ALLOWED - Signaling route is available.

= PROHIBITED - Signaling route is unavailable.

= RESTRICTED - Signaling traffic is restricted

6. Do you want to check or retrieve status for another SS7 route?

If YES, then go to [Step 5](#).

If NO, then go to [Step 3](#)

7. Retrieve current and historical performance data for a SS7 route. Double-click SS7 and then *Routes*. Right-click a route and select *Modify*, *PM Stats* and then click *Refresh* near the bottom of the panel for latest information. See [Figure 2](#).

The screenshot shows a window titled "PlexView - View SS7 Route [baitswitch]". It has two tabs: "Oper. Info" and "PM Stats", with "PM Stats" currently selected. Under "Oper. Info", there are three dropdown menus: "Adjacent/Remote Point Code" (0-0-10), "Link Set ID" (1), and "Link Set Priority" (0). The "PM Stats" tab contains a "Monitor Params" section with "Monitor Type" (a dropdown), "Level" (0), and "UP" (a dropdown). Below this is a "Direction" dropdown and a "Location" dropdown. A table displays performance data for three attributes: TRFDIVER, DURLSETDI..., and LASTINITNA. The table has four columns: Attribute, Received..., Transmit..., and Other To... The "Refresh" button is located below the table, and a "Status" section shows a progress bar and a timer from 0 to 300 seconds. A "Close" button is at the bottom right.

| Attribute ... | Received... | Transmit... | Other To... |
|---------------|-------------|-------------|-------------|
| TRFDIVER      | 0           | 0           | 0           |
| DURLSETDI...  | 0           | 0           | 0           |
| LASTINITNA    | 0           | 0           | 113         |

Figure 2. SS7 Route PM Data

**Parameters and Descriptions:**

Adjacent/Remote

Point Code = {0-255}-{0-255}-{0-255} – Adjacent or remote point code.

Link Set ID = {1-20} – Link set ID number

Link Set Priority = {0-3} - Priority level.

**Monitor Params:**

Monitor Type = ALL

Monitor Level - {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.

Direction = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Location = NEND - Near end counters to be initialized.

**Attributes:**

DURLSETDIVER = Duration in minutes that traffic on the link set is diverted on low priority route

LASTINITNA = Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT)

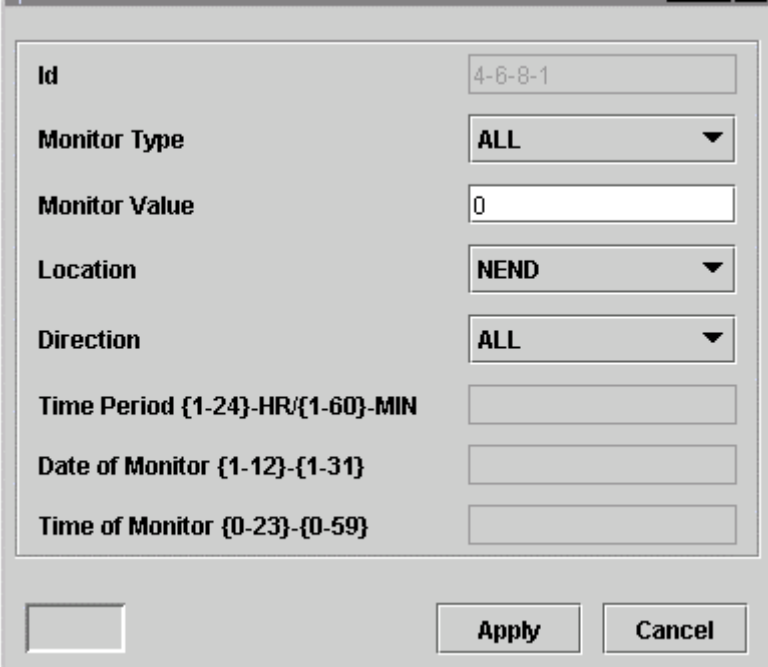
TRFDIVER = Number of times traffic on the link set has been diverted on low priority route

8. Do you want to initialize registers for SS7 route?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

9. Clear or initialize the SS7 route counters. Double-click SS7 and then *Routes*. Right-click a route and select *Init Register*. Make required changes and then click *Apply*. See [Figure 3](#).



Id 4-6-8-1

Monitor Type ALL

Monitor Value 0

Location NEND

Direction ALL

Time Period {1-24}-HR/{1-60}-MIN

Date of Monitor {1-12}-{1-31}

Time of Monitor {0-23}-{0-59}

Apply Cancel

**Figure 3. Initialization of SS7 Route Registers**

**Input Parameters:**

ID = {<PC>[-<LSETID>}}, where PC is point code {0-255}-{0-255}-{0-255} and LSETID is {1-20}.

Monitor Type = ALL - All statistics counters of the group determined by the *dirn* parameter.

Monitor Value = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".

Location = NEND - Near end counters to be initialized.

Direction = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Time Period = {1-24}-HR/{1-60}-MIN – Time - Currently not used.

Date of Monitor = {1-12}-{1-31} – Date – Currently not used.

Time of Monitor = = {0-23}-{0-59} – Time – Currently not used.

10. Do you want to initialize registers for another SS7 route?

If **YES**, then go to [Step 9](#).

If **NO**, then go to [Step 3](#).

11. Select your task from the following and go to the indicated step.

- Retrieve status of SS7 route ..... [Step 13](#)
- Retrieve PM data SS7 route ..... [Step 15](#)
- Clear the counters for SS7 route messages ..... [Step 17](#)
- Finished, no other task in the above list..... continue to the next step.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Retrieve status of a SS7 route using the RTRV-STATUS-ROUTE<sub>SS7</sub> command.

Command Syntax: RTRV-STATUS-ROUTE<sub>SS7</sub>: [TID]:  
<routeSs7Aid>: [CTAG];

**Input Parameters:**

routeSs7Aid = {<PCAID>[-<LSETAID>}}, where PCAID is point code ({0-255}-{0-255}-{0-255}) and LSETAID is {1-20}.

Command Example: RTRV-STATUS-ROUTE<sub>SS7</sub>: : 3-4-5-16;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<routeSs7Aid>:ROUTESTARSLT=<routeStaRsIt>,
SS7ROUTESTASTATE=<ss7RouteStaState>"
;
```

**Output Parameters:**

routeSs7Aid = {<PCAID>[-<LSETAID>]}, where PCAID is point code ({0-255}-{0-255}-{0-255}) and LSETAID is {1-20}.

routeStaRsIt = FAILINGLYR3 - MTP layer 3 test on the SS7 route failed.  
= SUCCESS - MTP layer 3 test on the SS7 route passed.

ss7RouteStaState = ALLOWED - Signaling route is available.  
= PROHIBITED - Signaling route is unavailable.  
= RESTRICTED - Signaling traffic is restricted

**Output Example:**

```
telica 2003-02-08 13:33:01
M 0 COMPLD
 "1-1-1-
1:ROUTESTARSLT=SUCCESS,SS7ROUTESTASTATE=ALLOWED"
/* RTRV-STATUS-ROUTESS7 */
;
```

14. Do you want to check or retrieve status for another SS7 route?

If **YES**, then go to [Step 13](#).

If **NO**, then go to [Step 11](#).

15. Retrieve current and historical performance data for a SS7 route using the RTRV-PM-SS7ROUTE command.

Command Syntax: RTRV-PM-SS7ROUTE:[TID]:<routeSs7>:  
[CTAG]:[:<montype>],[<monlev>],  
[<locn>],[<dirn>;

**Input Parameters:**

routeSs7 = {<PCAID>[-<LSETAID>]}, where PCAID is point code ({0-255}-{0-255}-{0-255}) and LSETAID is {1-20}.

montype = ALL - All statistics counters of the group determined by the *dirn* parameter.

monlev = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.

locn = **NEND** - Near end counters to be initialized.

dirn = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

Command Example: RTRV-PM-SS7ROUTE::1-1-1-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<routeSs7>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

routeSs7 = {<PCAID>[-<LSETAID>]}, where PCAID is point code ({0-255}-{0-255}-{0-255}) and LSETAID is {1-20}.

montype = DURLSETDIVER - Duration in minutes that traffic on the link set is diverted on low priority route  
= LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT)  
= TRFDIVER - Number of times traffic on the link set has been diverted on low priority route

monval = {0 – 4,294,967,295} - Monitored value.

monlev = {0 . . . 255}-{UP|DOWN} - Level of the requested monitored parameter.

locn = NEND - Near end counters to be initialized.

dirn = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

**Output Example:**

```
telica 2003-02-10 08:23:12
M 0 COMPLD
 "1-1-1-1:TRFDIVER,0,0-UP,NEND,ALL"
 "1-1-1-1:DURLSETDIVER,0,0-UP,NEND,ALL"
 "1-1-1-1:LASTINITNA,5692,0-UP,NEND,ALL"
/* RTRV-PM-SS7ROUTE */
;
```

16. Do you want to initialize registers for SS7 route?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

17. Clear or initialize the SS7 route counters using the INIT-REG-SS7ROUTE command.

Command Syntax:   INIT-REG-SS7ROUTE:[TID]:<routeSs7>:  
                          [CTAG]:<montype>,[<monval>],[<locn>],  
                          [<dirn>;

**Input Parameters:**

routeSs7       = {<PCAID>[-<LSETAID>]}, where PCAID is point code ({0-255}-{0-255}-{0-255}) and LSETAID is {1-20}.

montype       = ALL - All statistics counters of the group determined by the *dirn* parameter.

monnval       = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".

locn           = **NEND** - Near end counters to be initialized.

dirn           = **ALL** - All directions of the data stored in statistics counters.  
                  = NA - Direction not applicable.  
                  = RCV - Receive direction only of the data stored in statistics counters.  
                  = TRMT - Transmit direction only of the data stored in statistics counters.

Command Example:   INIT-REG-SS7ROUTE::1-1-1-1;

18. Do you want to initialize registers for another SS7 route?

If **YES**, then go to [Step 17](#).

If **NO**, then go to [Step 11](#).



## DLP-641 - RETRIEVE POINT CODE STATUS AND DPC PM DATA AND INITIALIZE DPC REGISTERS

**SUMMARY:** This procedure provides steps to retrieve status of point codes and performance monitored data of destination point codes as well as initialize the registers for destination point codes.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - Point codes
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.  
If using **TL1**, then go to [Step 11](#).
3. Select your task from the following and go to the indicated step.
  - Retrieve status of point code ..... [Step 5](#)
  - Retrieve PM data for signaling link layer messages ..... [Step 7](#)
  - Clear the counters for signaling link layer 3 messages ..... [Step 9](#)
  - Finished, no other task in the above list ..... continue to the next step.
4.  **YOU HAVE COMPLETED THIS PROCEDURE.**
5. Retrieve status of a point code. Double-click *SS7* and *Point Codes*. Right-click desired point code, select *View* and then *Oper. Info*. Click *Refresh* near the bottom to get latest information. Refer to [Figure 1](#).

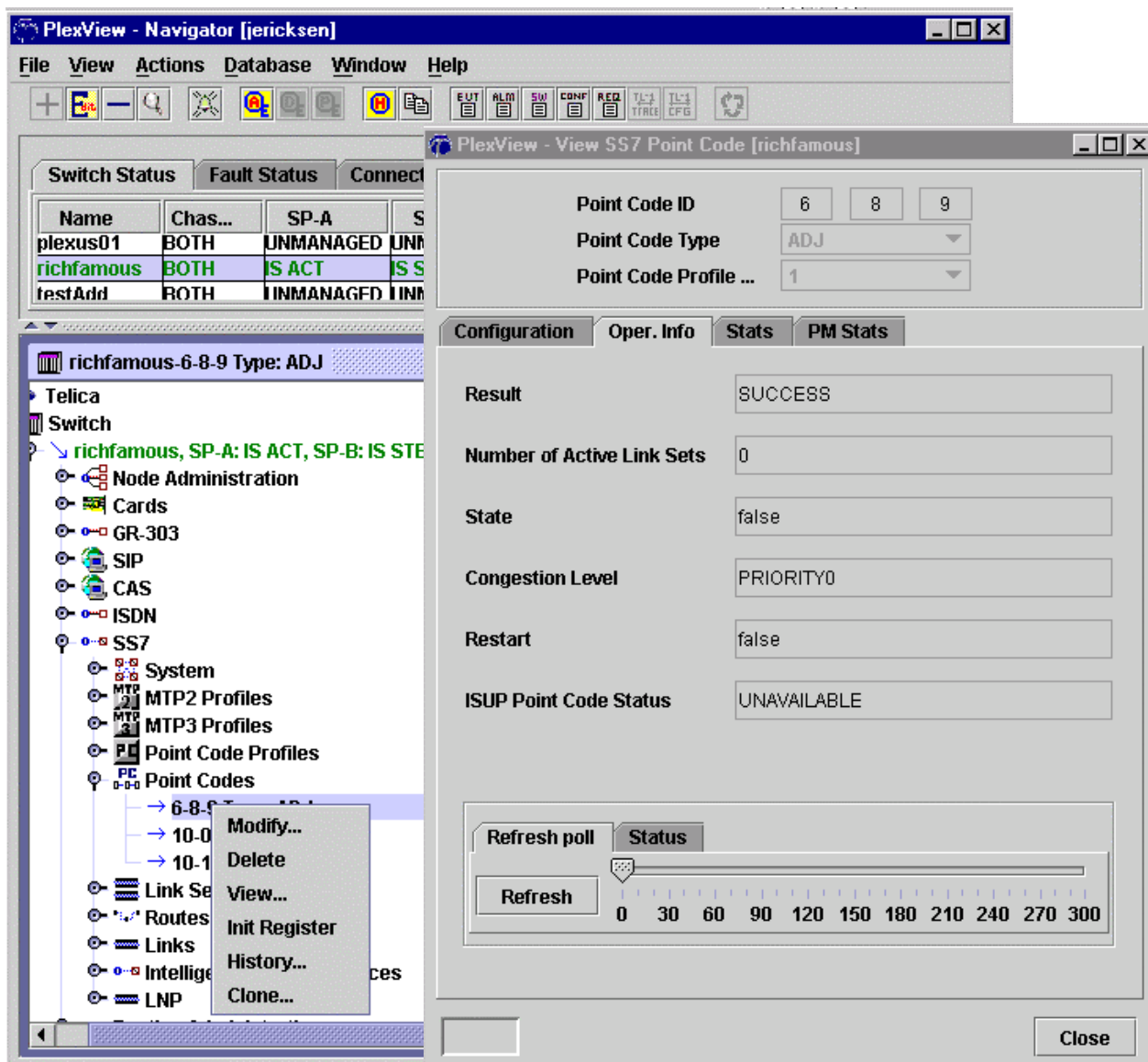


Figure 1. SS7 Operational Information

**Output parameters:**

- Point Code = {0 ... 255}-{0 ... 255}-{0 ... 255}- Retrieved point code.
- Point Code Type = {ADJ|REM|OWN} – Point code type.
- Point Code Profile ID = {1 - 128} – Point Code profile number.
- Result = FAILINVLNKLYR3 - MTP layer 3 test on the point code Failed  
= SUCCESS - MTP layer 3 test on the point code Passed
- Number of Active Link Sets = {1 ... 20} - Total number of active link sets in the point code.
- State = {Y|N}- Point code is |is not active.

|                        |                                                                                                                                                                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Congestion Level       | = PRIORITY0 - Point code is uncongested.<br>= PRIORITY1 – Level of congestion.<br>= PRIORITY2 – Level of congestion.<br>= PRIORITY3 – Level of congestion.                                                                                              |
| Restart                | = false - Signaling point is not restarted.<br>= true - Signaling point is restarted.                                                                                                                                                                   |
| ISUP Point Code Status | = AVAILABLE = Point code is available.<br>= CONG1 - Point code is at ISUP congestion level 1.<br>= CONG2 - Point code is at ISUP congestion level 2.<br>= CONG3 - Point code is at ISUP congestion level 3.<br>= UNAVAILABLE Point code is unavailable. |

6. Do you want to retrieve the status of another point code?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 3](#).

7. Retrieve current and historical performance data for a destination point code using the RTRV-PM-DPC command. .

Command Syntax: RTRV-PM-DPC:[TID]:<ss7Pc>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>]

**Input Parameters:**

|         |                                                                                                                                                                                                                                                                          |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ss7Pc   | = {0 . . . 255}-{0 . . . 255}-{0 . . . 255}- Point code.                                                                                                                                                                                                                 |
| montype | = ALL - All statistics counters of the group determined by the <i>dirn</i> parameter.                                                                                                                                                                                    |
| monlev  | - {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                                                                                                                                                  |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                                                                                                                                                                                     |
| dirn    | = <b>ALL</b> - All directions of the data stored in statistics counters.<br>= NA - Direction not applicable.<br>= RCV - Receive direction only of the data stored in statistics counters.<br>= TRMT - Transmit direction only of the data stored in statistics counters. |

Command Example: RTRV-PM-DPC::1-1-1;

**Parameters and Descriptions:**

|         |                                                                                                                                                                                                                                                                                                                                                        |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ss7Pc   | = {0 . . . 255}-{0 . . . 255}-{0 . . . 255}- Point code.                                                                                                                                                                                                                                                                                               |
| montype | = ALL - All types<br>= DURRTEUNAV - Duration in minutes of route unavailability<br>= LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT)<br>= LASTINIT - Number of minutes since initialization of all counters<br>= RTECONGTST - Number of route set congestion test messages. |

|        |                                                                             |
|--------|-----------------------------------------------------------------------------|
|        | = RTETST - Number of route set test messages.                               |
|        | = RTEUNAV - Number of times route became unavailable                        |
|        | = SIFOCTPRTE - Number of SIF (Service Information Field) octets tper route  |
|        | = SIOOCTPRTE - Number of SIO (Service Indicator Octet) octets per route     |
|        | = TXALLW - Number of transfer allowed messages.                             |
|        | = TXPROHIB - Number of transfer prohibited messages received                |
|        | = TXRESTRICT - Number of transfer restricted messages.                      |
| monval | = {0 – 4,294,967,295} - Monitored value.                                    |
| monlev | = {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.     |
| locn   | = NEND - Near end counters to be initialized.                               |
| dirn   | = ALL - All directions of the data stored in statistics counters.           |
|        | = NA - Direction not applicable.                                            |
|        | = RCV - Receive direction only of the data stored in statistics counters.   |
|        | = TRMT - Transmit direction only of the data stored in statistics counters. |

8. Do you want to initialize registers for signaling link layer 3?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#).

9. Clear or initialize the destination point code counters using the INIT-REG-DPC command.

Command Syntax: INIT-REG-DPC:[TID]:<ss7Pc>:[CTAG]::  
<montype>,[<monval>],[<locn>],[<dirn>];

**Input Parameters:**

|         |                                                                                                                                                              |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ss7Pc   | = {0 . . . 255}-{0 . . . 255}-{0 . . . 255}- Point code.                                                                                                     |
| montype | = ALL - All statistics counters of the group determined by the <i>dirn</i> parameter.                                                                        |
| monnval | = {0 . . . 9999} - Value to which the counters identified by <i>montype</i> are to be initialized. The value is “0” if the value of <i>montype</i> is “ALL”. |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                                                                         |
| dirn    | = <b>ALL</b> - All directions of the data stored in statistics counters.                                                                                     |
|         | = NA - Direction not applicable.                                                                                                                             |
|         | = RCV - Receive direction only of the data stored in statistics counters.                                                                                    |
|         | = TRMT - Transmit direction only of the data stored in statistics counters.                                                                                  |

Command Example: INIT-REG-DPC::1-1-1;

10. Do you want to initialize registers for another destination point code?

If **YES**, then go to [Step 7](#).

If **NO**, then go to [Step 3](#).

11. Select your task from the following and go to the indicated step.

- Retrieve status of point code ..... [Step 13](#)
- Retrieve PM data for signaling link layer messages ..... [Step 15](#)
- Clear the counters for signaling link layer 3 messages ..... [Step 17](#)
- Finished, no other task in the above list..... continue to the next step.

12.  **YOU HAVE COMPLETED THIS PROCEDURE.**

13. Retrieve status of a point code using the RTRV-STATUS-PC command.

Command Syntax: RTRV-STATUS-PC: [TID]:<ss7Pc>:[CTAG];

**Input parameters:**

ss7Pc = {0...255}-{0...255}-{0...255}- Point code.

Command Example: RTRV-STATUS-PC::1-1-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<ss7Pc>:SS7PCSTARSLT=<ss7PcStaRslt>,
SS7PCSTANMBACTVLNKSETS=<ss7PcStaNmbActvLnkSets>,
SS7PCSTASTATE=<ss7PcStaState>,
SS7PCSTACONG=<ss7PcStaCong>,
SS7PCSTARSTFLG=<ss7PcStaRstFlg>,
SS7PCSTAISUPSTAT=<ss7PcStaIsupStat>"
;
```

**Output parameters:**

|                         |                                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------|
| ss7Pc                   | = {0...255}-{0...255}-{0...255}- Retrieved point code.                                                                |
| ss7PcStaRslt            | = FAILINVLNKLYR3 - MTP layer 3 test on the point code Failed<br>= SUCCESS - MTP layer 3 test on the point code Passed |
| ss7PcStaNmbActvLnkSets= | {1...20} - Total number of active link sets in the point code.                                                        |
| ss7PcStaState           | = {Y N}- Point code is  is not active.                                                                                |

|                  |   |                                                   |
|------------------|---|---------------------------------------------------|
| ss7PcStaCong     | = | PRIORITY0 - Point code is uncongested.            |
|                  | = | PRIORITY1 – Level of congestion.                  |
|                  | = | PRIORITY2 – Level of congestion.                  |
|                  | = | PRIORITY3 – Level of congestion.                  |
| ss7PcStaRstFlg   | = | N - Signaling point is not restarted.             |
|                  | = | Y - Signaling point is restarted.                 |
| ss7PcStaIsupStat | = | AVAILABLE = Point code is available.              |
|                  | = | CONG1 - Point code is at ISUP congestion level 1. |
|                  | = | CONG2 - Point code is at ISUP congestion level 2. |
|                  | = | CONG3 - Point code is at ISUP congestion level 3. |
|                  | = | UNAVAILABLE Point code is unavailable.            |

**Output Example:**

```
telica 2001-08-25 14:37:49
M 0 COMPLD
"1-1-
1:SS7PCSTARSLT=SUCCESS,SS7PCSTANMBACTVLNKSETS=2,
SS7PCSTASTATE=Y,SS7PCSTACONG=PRIORITY0,
SS7PCSTARSTFLG=N,SS7PCSTAISUPSTAT=CONG1";
/* RTRV-STATUS-PC */
```

- 14.** Do you want to retrieve the status of another point code?

If **YES**, then go to [Step 13](#).

If **NO**, then go to [Step 11](#).

- 15.** Retrieve current and historical performance data for a destination point code using the RTRV-PM-DPC command. .

Command Syntax: RTRV-PM-DPC:[TID]:<ss7Pc>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>]

**Input Parameters:**

|         |   |                                                                                     |
|---------|---|-------------------------------------------------------------------------------------|
| ss7Pc   | = | {0 . . . 255}-{0 . . . 255}-{0 . . . 255}- Point code.                              |
| montype | = | ALL - All statistics counters of the group determined by the <i>dirn</i> parameter. |
| monlev  | = | {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.               |
| locn    | = | <b>NEND</b> - Near end counters to be initialized.                                  |
| dirn    | = | <b>ALL</b> - All directions of the data stored in statistics counters.              |
|         | = | NA - Direction not applicable.                                                      |
|         | = | RCV - Receive direction only of the data stored in statistics counters.             |
|         | = | TRMT - Transmit direction only of the data stored in statistics counters.           |

Command Example: RTRV-PM-DPC::1-1-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7Pc>:<montype>,<monval>,<monlev>,<locn>,<dirn>"
;
```

**Output Parameters:**

|         |                                                                                                                              |
|---------|------------------------------------------------------------------------------------------------------------------------------|
| ss7Pc   | = {0 ... 255}-{0 ... 255}-{0 ... 255}- Point code.                                                                           |
| montype | = ALL - All types                                                                                                            |
|         | = DURRTEUNAV - Duration in minutes of route unavailability                                                                   |
|         | = LASTINITNA - Number of minutes since initialization of all counters for which there is no direction (neither RCV nor TRMT) |
|         | = LASTINITRCV - Number of minutes since initialization of all RCV (receive) counters                                         |
|         | = LASTINITTRMT - Number of minutes since initialization of all TRMT (transmit) counters                                      |
|         | = RTECONGTSTRX - Number of route set congestion test messages received                                                       |
|         | = RTECONGTSTTX - Number of route set congestion test messages transmitted                                                    |
|         | = RTETSTRX - Number of route set test messages received                                                                      |
|         | = RTETSTTX - Number of route set test messages transmitted                                                                   |
|         | = RTEUNAV - Number of times route became unavailable                                                                         |
|         | = SIFOCTPRTEX - Number of SIF (Service Information Field) octets transmitted per route                                       |
|         | = SIOOCTPRTEX - Number of SIO (Service Indicator Octet) octets transmitted per route                                         |
|         | = TXALLWRX - Number of transfer allowed messages received                                                                    |
|         | = TXALLWTX - Number of transfer allowed messages transmitted                                                                 |
|         | = TXPROHIBRX - Number of transfer prohibited messages received                                                               |
|         | = TXPROHIBTX - Number of transfer prohibited messages transmitted                                                            |
|         | = TXRESTRICRX - Number of transfer restricted messages received                                                              |
|         | = TXRESTRICTX - Number of transfer restricted messages transmitted                                                           |
| monval  | = {0 – 4,294,967,295} - Monitored value.                                                                                     |
| monlev  | = {0 ... 255}-{UP DOWN} - Level of the requested monitored parameter.                                                        |
| locn    | = NEND - Near end counters to be initialized.                                                                                |

dirn = ALL - All directions of the data stored in statistics counters.  
= NA - Direction not applicable.  
= RCV - Receive direction only of the data stored in statistics counters.  
= TRMT - Transmit direction only of the data stored in statistics counters.

**Output Example:**

```
telica 2003-02-13 14:30:37
M 0 COMPLD
"001-001-001:RTETSTTX,0,0-UP,NEND,ALL"
"001-001-001:RTECONGTSTTX,0,0-UP,NEND,ALL"
"001-001-001:TXPROHIBTX,0,0-UP,NEND,ALL"
"001-001-001:TXRESTRICCTX,0,0-UP,NEND,ALL"
"001-001-001:TXALLWTX,0,0-UP,NEND,ALL"
"001-001-001:SIFOCTPRTEX,156184279,0-UP,NEND,ALL"
"001-001-001:SI0OCTPRTEX,13780196,0-UP,NEND,ALL"
"001-001-001:LASTINITTRMT,5705,0-UP,NEND,ALL"
"001-001-001:RTETSTRX,0,0-UP,NEND,ALL"
"001-001-001:RTECONGTSTRX,0,0-UP,NEND,ALL"
"001-001-001:TXPROHIBRX,0,0-UP,NEND,ALL"
"001-001-001:TXRESTRICTRX,0,0-UP,NEND,ALL"
"001-001-001:TXALLWRX,0,0-UP,NEND,ALL"
"001-001-001:LASTINITRCV,5705,0-UP,NEND,ALL"
"001-001-001:RTEUNAV,5,0-UP,NEND,ALL"
"001-001-001:DURRTEUNAV,12,0-UP,NEND,ALL"
"001-001-001:LASTINITNA,5705,0-UP,NEND,ALL"
/* RTRV-PM-DPC */
;
```

16. Do you want to initialize registers for signaling link layer 3?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 11](#).

17. Clear or initialize the destination point code counters using the INIT-REG-DPC command.

Command Syntax: INIT-REG-DPC:[TID]:<ss7Pc>:[CTAG]::  
<montype>,[<monval>],[<locn>],[<dirn>];

**Input Parameters:**

ss7Pc = {0 ... 255}-{0 ... 255}-{0 ... 255}- Point code.  
montype = ALL - All statistics counters of the group determined by the *dirn* parameter.  
monnval = {0 ... 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".  
locn = **NEND** - Near end counters to be initialized.



dirn               = **ALL** - All directions of the data stored in statistics counters.  
                  = **NA** - Direction not applicable.  
                  = **RCV** - Receive direction only of the data stored in statistics counters.  
                  = **TRMT** - Transmit direction only of the data stored in statistics counters.

Command Example: **INIT-REG-DPC: :1-1-1;**

**18.**     Do you want to initialize registers for another destination point code?

      If **YES**, then go to [Step 15](#).

      If **NO**, then go to [Step 11](#).

**NOTES:**

## DLP-642 - RETRIEVE SIGNALING LINK STATUS AND PM DATA AND INITIALIZE REGISTERS

**SUMMARY:** This procedure provides steps to retrieve status and performance monitored data of signaling links as well as initialize the registers for signaling link.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. The following information is required in order to complete this procedure:
  - SS7 link number
2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 12](#).

3. Select your task from the following and go to the indicated step.
  - Retrieve statistics for signaling link..... [Step 5](#)
  - Retrieve PM data for signaling link layer 2 messages ..... [Step 8](#)
  - Clear the counters for signaling link layer 2 messages ..... [Step 10](#)
  - Finished, no other task in the above list..... continue to the next step.



4. **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve status of a signaling link. Double-click the switch, SS7 and *Links*. Right-click the *link*, click *View* and then select *Oper. Info* tab. See [Figure 1](#).

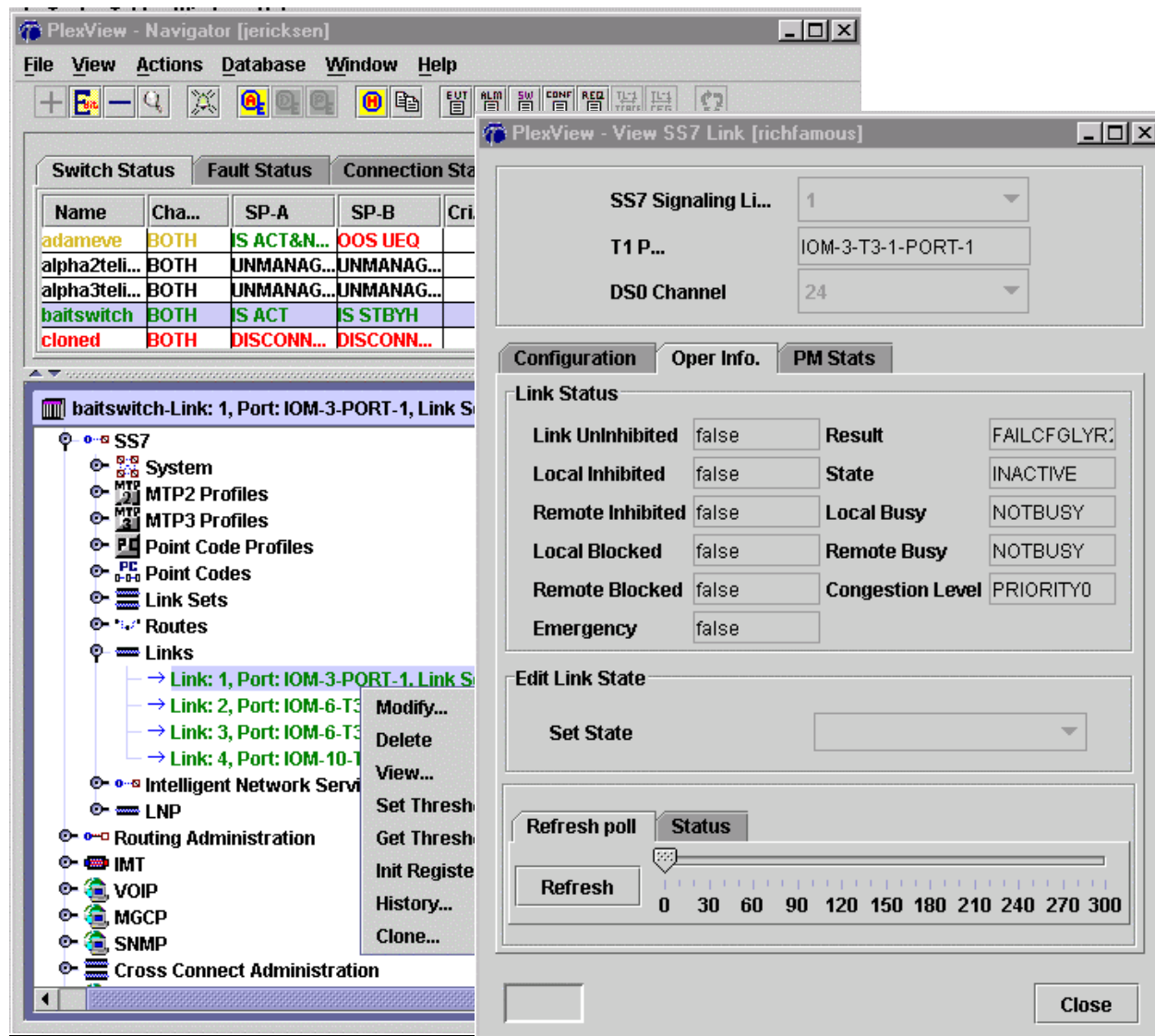


Figure 1. Signaling Link Status

### Parameters and Descriptions

- Link Uninhibited = {true|false} - Signaling link is | is not uninhibited.
- Link Inhibited = {true|false} - Signaling link is | is not inhibited at the local end.
- Remote Inhibited = {true|false} - Signaling link is | is not inhibited at the remote end.
- Local Blocked = {true|false} - Signaling link is | is not blocked at the local end.
- Remote Blocked = {true|false} - Signaling link is | is not blocked at the remote end.
- Emergency = {true|false} - Emergency alignment is | is not indicated
- Result = FAILCFGLYR2 - Failed: configuration not done at layer 2  
= FAILINVCFLYR2 - Failed: invalid configuration at layer 2

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
|                  | = FAILINVLNKLYR3 - Failed: invalid configuration at layer 3          |
|                  | = SUCCESS - Status request successful                                |
| State            | = ACTIVE - Signaling link at MTP layer 3 is active                   |
|                  | = CON - Signaling link at MTP layer 3 is connecting                  |
|                  | = FAILED - Signaling link at MTP layer 3 has failed                  |
|                  | = INACTIVE - Signaling link at MTP layer 3 is inactive               |
|                  | = SUSPEND - Signaling link at MTP layer 3 is suspended               |
|                  | = WAITCON - Signaling link at MTP layer 3 is waiting to connect      |
| Local Busy       | = {BUSY NOTBUSY} - Signaling link is  is not busy at the local end.  |
| Remote Busy      | = {BUSY NOTBUSY} - Signaling link is  is not busy at the remote end. |
| Congestion Level | = PRIORITY0 - Signaling link highest priority.                       |
|                  | = PRIORITY1 - Signaling link second priority.                        |
|                  | = PRIORITY2 - Signaling link third priority.                         |
|                  | = PRIORITY3 - Signaling link lowest priority.                        |

6. Do you want to check or retrieve status for another signaling link?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 3](#)



**Note:** The RTRV-PM-SLK and INIT-REG-SLK commands are not valid commands for some software versions. Type **RTRV-PM-SLK?** to determine if it is a valid command.

7. Do you want to check performance data for a signaling link?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 3](#)

8. Retrieve current and historical performance data for signaling link. Retrieve status of a signaling link. Double-click the switch, *SS7* and *Links*. Right-click the *link*, click *View* and then select *Oper. Info* tab. See [Figure 2](#).

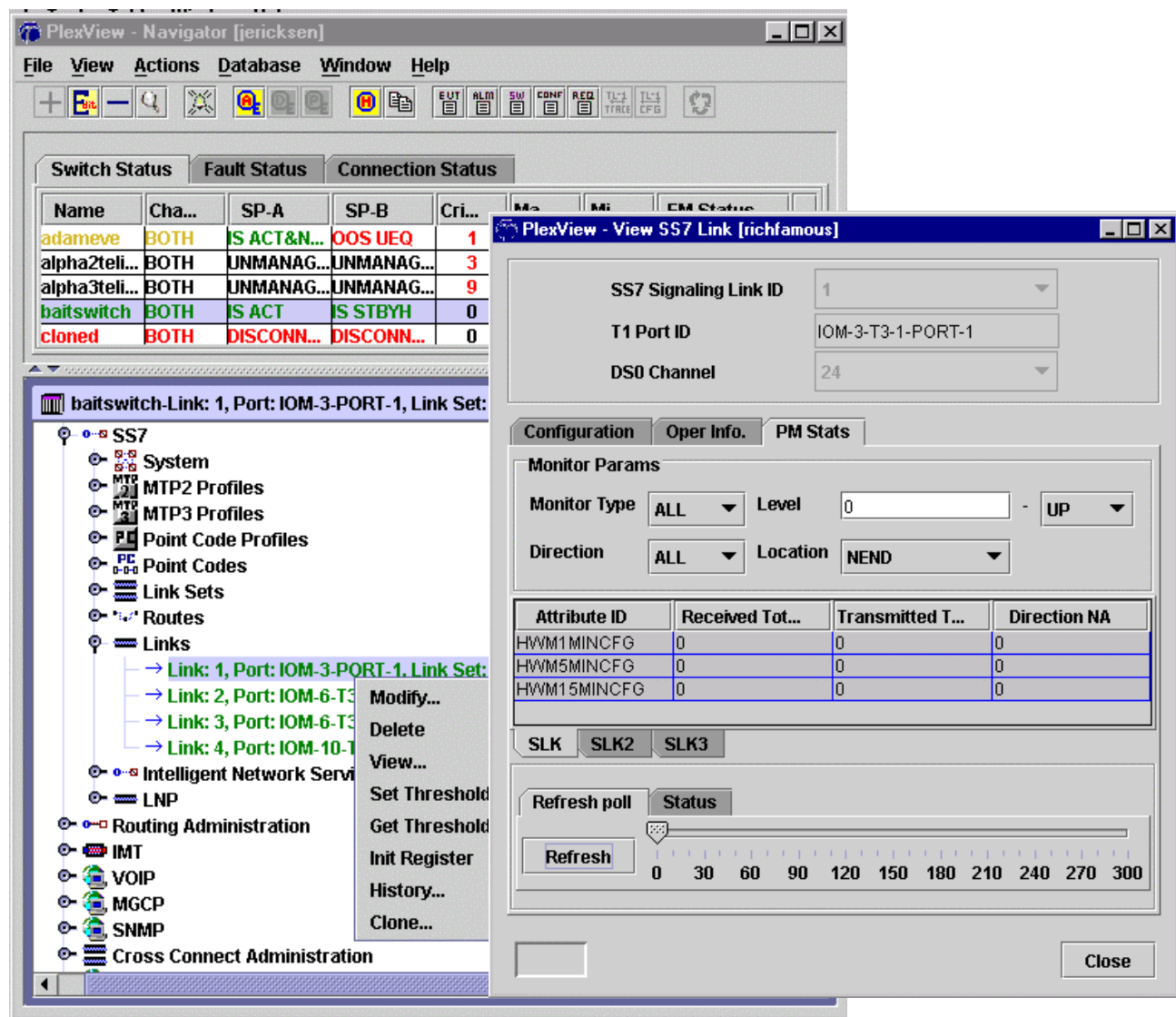


Figure 2. PM Data of a Signaling Link

### Parameters and Descriptions

In the following \* can be replace with 1, 5 or 15.

HWM\*MINCFG - HWM calculations for periods are done. A value of "0" means "no" and a value of "1" means "yes".

HWM\*MINLINKUTIL - HWM for link utilization.

HWM\*MINLINKUTILAGE - The period in which the HWM for link utilization occurred ("1" indicates the most recent period).

HWM\*MINMSURX - Maximum number of message signal units received period.

HWM\*MINMSURXAGE - The period in which the HWM for message signal units received occurred ("1" indicates the most recent period).

HWM\*MINMSUTX - Maximum number of message signal units transmitted.

HWM\*MINMSUTXAGE - The period in which the HWM for message signal units transmitted occurred ("1" indicates the most recent period).

HWM\*MINOCTRX - Maximum number of octets received for periods.  
HWM\*MINOCTRXAGE - The period in which the HWM for octets received occurred ("1" indicates the most recent period).  
HWM\*MINOCTTX - Maximum number of octets transmitted for periods.  
HWM\*MINOCTTXAGE - The period in which the HWM for octets transmitted occurred ("1" indicates the most recent period).

9. Do you want to initialize registers for a signaling link?  
If **YES**, then continue to the next step.  
If **NO**, then go to [Step 3](#).
10. Clear or initialize the signaling link counters. Double-click the switch, SS7 and *Links*. Right-click the *link*, click *Modify* and then select *PM Stats* tab OR right-click the *link*, click *Init Register* and select *SLK*. See [Figure 3](#).

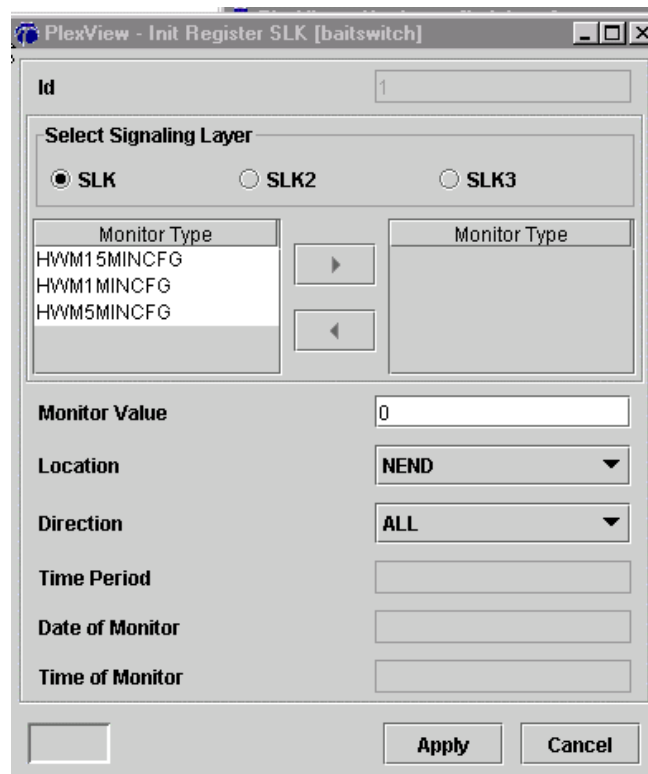


**Figure 3. Initialization of SLK Registers**

11. Do you want to initialize signaling link registers for another signaling link?  
If **YES**, then go to [Step 10](#).  
If **NO**, then go to [Step 3](#).

12. Select your task from the following and go to the indicated step.

- Retrieve statistics for signaling link..... [Step 14](#)
- Retrieve PM data for signaling link layer 2 messages ..... [Step 17](#)
- Clear the counters for signaling link layer 2 messages ..... [Step 19](#)
- Finished, no other task in the above list..... continue to the next step.

13.  **YOU HAVE COMPLETED THIS PROCEDURE.**

14. Retrieve status of a signaling link using the RTRV-STATUS-SLK command.

Command Syntax: RTRV-STATUS-  
SLK: [TID]: <ss7LnkId>: [CTAG];

**Input Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.

Command Example: RTRV-STATUS-SLK: :1;

**Output Format:**

```

 SID DATE TIME
M CTAG COMPLD
 "<ss7LnkId>:SS7LNKSTARSLT=<ss7LnkStaRsIt>,
LOCALBUSY=<localBusy>, REMOTEBUSY=<remoteBusy>,
SS7LNKSTASTATE=<ss7LnkStaState>,
SS7LNKSTALOCBLKD=<ss7LnkStaLocBlkd>,
SS7LNKSTAREMBLKD=<ss7LnkStaRemBlkd>,
SS7LNKSTALOCINHBT=<ss7LnkStaLocInhbt>,
SS7LNKSTARMTINHBT=<ss7LnkStaRmtInhbt>,
SS7LNKSTAUNINHBT=<ss7LnkStaUninhbt>,
SS7LNKSTACONG=<ss7LnkStaCong>,
SS7LNKSTAEMRG=<ss7LnkStaEmrg>"
;
```

**Output Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.  
ss7LnkStaRsIt = FAILCFGLYR2 - Failed: configuration not done at layer 2  
= FAILINVCFGLYR2 - Failed: invalid configuration at layer 2  
= FAILINVLNKLYR3 - Failed: invalid configuration at layer 3  
= SUCCESS - Status request successful  
localBusy = {BUSY|NOTBUSY} - Signaling link is| is not busy at the local end.



remoteBusy = {BUSY|NOTBUSY} - Signaling link is| is not busy at the remote end.

ss7LnkStaState = ACTIVE - Signaling link at MTP layer 3 is active  
= CON - Signaling link at MTP layer 3 is connecting  
= FAILED - Signaling link at MTP layer 3 has failed  
= INACTIVE - Signaling link at MTP layer 3 is inactive  
= SUSPEND - Signaling link at MTP layer 3 is suspended  
= WAITCON - Signaling link at MTP layer 3 is waiting to connect

ss7LnkStaLocBlkd = {Y|N} - Signaling link is | is not blocked at the local end.

ss7LnkStaRemBlkd = {Y|N} - Signaling link is | is not blocked at the remote end.

ss7LnkStaLocInhbt = {Y|N} - Signaling link is | is not inhibited at the local end.

ss7LnkStaRmtInhbt = {Y|N} - Signaling link is | is not inhibited at the remote end.

ss7LnkStaUninhbt = {Y|N} - Signaling link is | is not uninhibited.

ss7LnkStaCong = PRIORITY0 - Signaling link highest priority.  
= PRIORITY1 - Signaling link second priority.  
= PRIORITY2 - Signaling link third priority.  
= PRIORITY3 - Signaling link lowest priority.

ss7LnkStaEmrg = {Y|N} - Emergency alignment is | is not indicated

**Output Example:**

```
alpha2telica 2002-11-13 13:38:11
M 0 COMPLD
"1:SS7LNKSTARSLT=SUCCESS, LOCALBUSY=NOTBUSY,
REMOTEBUSY=NOTBUSY, SS7LNKSTASTATE=ACTIVE,
SS7LNKSTALOCBLKD=N, SS7LNKSTAREMBLKD=N, SS7LNKSTALOCINHB
T=N, SS7LNKSTARMTINHBT=N, SS7LNKSTAUNINHBT=N,
SS7LNKSTACONG=PRIORITY0, SS7LNKSTAEMRG=Y"
/* RTRV-STATUS-SLK */
```

15. Do you want to check or retrieve status for another signaling link?

If **YES**, then go to [Step 14](#).

If **NO**, then go to [Step 12](#).



**Note:** The RTRV-PM-SLK and INIT-REG-SLK commands are not valid commands for some software versions. Type **RTRV-PM-SLK?** to determine if it is a valid command.

16. Do you want to check performance data for a signaling link?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 12](#).

17. Retrieve current and historical performance data for signaling link using the RTRV-PM-SLK command. .

Command Syntax: RTRV-PM-SLK: [TID]: <ss7LnkId>: [CTAG]: :  
[<montype>];

**Input Parameters:**

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ss7LnkId | = {1 . . . 40} – Signaling link.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| montype  | = HWM = All high water marks<br>In the following * can be replace with 1, 5 or 15.<br>= HWM*MINCFG - HWM calculations for periods are done. A value of “0” means “no” and a value of “1” means “yes”.<br>= HWM*MINLINKUTIL - HWM for link utilization.<br>= HWM*MINLINKUTILAGE - The period in which the HWM for link utilization occurred (“1” indicates the most recent period).<br>= HWM*MINMSURX - Maximum number of message signal units received period.<br>= HWM*MINMSURXAGE - The period in which the HWM for message signal units received occurred (“1” indicates the most recent period).<br>= HWM*MINMSUTX - Maximum number of message signal units transmitted.<br>= HWM*MINMSUTXAGE - The period in which the HWM for message signal units transmitted occurred (“1” indicates the most recent period).<br>= HWM*MINOCTR - Maximum number of octets received for periods.<br>= HWM*MINOCTRAGE - The period in which the HWM for octets received occurred (“1” indicates the most recent period).<br>= HWM*MINOCTTX - Maximum number of octets transmitted for periods.<br>= HWM*MINOCTTXAGE - The period in which the HWM for octets transmitted occurred (“1” indicates the most recent period). |
| monlev   | - {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| locn     | = <b>NEND</b> - Near end counters to be initialized.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| dirn     | = <b>ALL</b> - All directions of the data stored in statistics counters.<br>= <b>NA</b> - Direction not applicable.<br>= <b>RCV</b> - Receive direction only of the data stored in statistics counters.<br>= <b>TRMT</b> - Transmit direction only of the data stored in statistics counters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Command Example: RTRV-PM-ISDNMSG: :3029;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ss7LnkId>:<montype>,<monval>"
;
```

**Output Parameters:**

ss7LnkId = {1 . . . 40} – Signaling link.

montype = HWM = All high water marks  
In the following \* can be replace with 1, 5 or 15.

- = HWM\*MINCFG - HWM calculations for periods are done. A value of “0” means “no” and a value of “1” means “yes”.
- = HWM\*MINLINKUTIL - HWM for link utilization.
- = HWM\*MINLINKUTILAGE - The period in which the HWM for link utilization occurred (“1” indicates the most recent period).
- = HWM\*MINMSURX - Maximum number of message signal units received period.
- = HWM\*MINMSURXAGE - The period in which the HWM for message signal units received occurred (“1” indicates the most recent period).
- = HWM\*MINMSUTX - Maximum number of message signal units transmitted.
- = HWM\*MINMSUTXAGE - The period in which the HWM for message signal units transmitted occurred (“1” indicates the most recent period).
- = HWM\*MINOCTR - Maximum number of octets received for periods.
- = HWM\*MINOCTRAGE - The period in which the HWM for octets received occurred (“1” indicates the most recent period).
- = HWM\*MINOCTTX - Maximum number of octets transmitted for periods.
- = HWM\*MINOCTTXAGE - The period in which the HWM for octets transmitted occurred (“1” indicates the most recent period).

monval = {0 – 4,294,967,295} - Monitored value.

**Output Example:**

```
telica 2003-02-13 13:38:11
M 0 COMPLD

/* RTRV-PM-SLK */
;
```

- If **YES**, then continue to the next step.  
If **NO**, then go to [Step 12](#).

- Command Syntax: INIT-REG-SLK:[TID]:<ss7LnkId>:[CTAG]::  
<montype>,<monval>;

|          |                                                                                                                                                              |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ss7LnkId | = {1 . . . 40} – Signaling link.                                                                                                                             |
| montype  | = HWM = All high water marks<br>In the following * can be replace with 1, 5 or 15.<br>= HWM*MINCFG - HWM calculations for periods                            |
| monnval  | = {0 . . . 9999} - Value to which the counters identified by <i>montype</i> are to be initialized. The value is “0” if the value of <i>montype</i> is “ALL”. |

If **YES**, then go to **Step 19**.  
If **NO**, then go to **Step 12**.

## DLP-643 - RETRIEVE STATUS OF GR303 INTERFACE GROUP AND CRV

**SUMMARY:** This procedure provides steps to retrieve status of a GR303 interface group and channel and state associated with a GR303 Call Reference Value (CRV).

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - GR303 interface group
  - GR303 call reference value (CRV)
  - Subscriber interface
2. Select your task from the following and go to the indicated step.
  - Retrieve status of GR303 interface group ..... [Step 4](#)
  - Retrieve status of GR303 CRV ..... [Step 6](#)
  - Finished, no other task in the above list ..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve status of a GR303 interface group using the RTRV-STATUS-GR303IF command.

Command Syntax: RTRV-STATUS-  
GR303IF:[TID]:<ifGrpNum>:[CTAG];

**Input Parameters:**

ifGrpNum = {1 . . . 32767} - GR303 interface group

Command Example: RTRV-STATUS-GR303IF::1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<ifGrpNum>:ACTIVETMC=<activeTMC>,
 ACTIVEEOC=<activeEOC>:<pst>,<sst>"
;
```

**Output Parameters:**

ifGrpNum = {1 . . . 32767} - GR303 interface group  
activeTMC = PRI - Primary TMC is active.  
          = SEC - Secondary TMC is active.  
activeEOC = PRI - Primary EOC is active.  
          = SEC - Secondary EOC is active.  
pst = IS - Primary state of the GR303 interface group is In-Service.  
     = OOS-AU - Primary state is Out-Of-Service, Autonomous.  
     = OOS-AUMA - Primary state is Out-Of-Service, Autonomous  
          and Managed.  
     = OOS-MA - Primary state is Out-Of-Service for Management  
sst = ACT - Secondary state of the GR303 interface group is Active  
     = FAF - Secondary state is Facilities Failure  
     = SGEO - Secondary state is Supporting Entity Outage  
     = SGEO\_FAF - Secondary state is Supporting Entity Outage and  
          Facilities Failure

**Output Example:**

```
telica 2003-02-13 13:38:11
M 0 COMPLD
 "1:ACTIVETMC=PRI, ACTIVEEOC=PRI, OOS-AU, FAF"
/* RTRV-STATUS-GR303IF */
```

5. Do you want to check or retrieve status for another GR303 interface group?  
    If **YES**, then go to [Step 4](#).  
    If **NO**, then go to [Step 2](#)
6. Retrieve the channel and state associated with a GR303 Call Reference Value (subscriber line) using the RTRV-STATUS-GR303CRV command.

Command Syntax: RTRV-STATUS-  
GR303CRV:[TID]:<crvId>:[CTAG];

**Input Parameters:**

crvId = {IFGRPNUM-CALLREFVAL-SUBSCRIBERIF}, where  
IFGRPNUM is {1 . . . 32767}  
CALLREFVAL is {1 . . . 2048}  
SUBSCRIBERIF is {1 . . . 32767}

Command Example: RTRV-STATUS-GR303CRV::1-1-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<crvId>:IOMPORTDS0=<iomPortDs0>:<pst>,[<sst>]"
;
```

**Output Parameters:**

|            |                                                                                                                                                                                                                                                                                                                          |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| crvId      | = {IFGRPNUM-CALLREFVAL-SUBSCRIBERIF}, where<br>IFGRPNUM is {1 . . . 32767}<br>CALLREFVAL is {1 . . . 2048}<br>SUBSCRIBERIF is {1 . . . 32767}                                                                                                                                                                            |
| iomPortDs0 | = IOM-{1-17}-PORT-{1-28}-T0-{1-24} - Channel on a T1 port<br>on a DS1 I/O module.<br>= IOM-{1-17}-STS1-{1-8}-PORT-{1-28}-T0-{1-24} - Channel<br>on a T1 port on an STS1 I/O module.<br>= IOM-{1-17}-T3-{1-8}-PORT-{1-28}-T0-{1-24} - Channel on<br>a T1 port on a DS3 I/O module.                                        |
| pst        | = IS - Primary state of CRV is In-Service.<br>= OOS-AU - Primary state of CRV is Out-Of-Service,<br>Autonomous.<br>= OOS-MA - Primary state of CRV is Out-Of-Service for<br>Management.                                                                                                                                  |
| sst        | = BLKD – Secondary state of CRV is Blocked<br>= FAF – Secondary state of CRV is Facilities Failure<br>= IDLE – Secondary state of CRV is Idle<br>= NBUSY – Secondary state of CRV is Incoming Busy<br>= OUTBUSY – Secondary state of CRV is Outgoing Busy<br>= SGEO – Secondary state of CRV is Supporting Entity Outage |

**Output Example:**

```
telica 2003-02-13 13:38:11
M 0 COMPLD
"1-1-1:IOMPORTDS0=IOM-2-T3-2-PORT-28-T0-24:IS,IDLE"
/* RTRV-STATUS-GR303CRV */
```

7. Do you want to check or retrieve status for another CRV?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#)

**NOTES:**



## DLP-644 - RETRIEVE PM DATA OF SIP MESSAGES

**SUMMARY:** This procedure provides steps to retrieve performance monitored (PM) data related to SIP (Session Initiation Protocol) messages

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize T1 registers?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 8](#).

2. Select your task from the following and go to the indicated step.

- Retrieve the PM data for SIP messages ..... [Step 4](#)
- Initialize registers for SIP message ..... [Step 6](#)
- Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve current and historical performance data related to SIP (Session Initiation Protocol) messages. Double-click the switch, Right-click the *switch name*, click *View* and then select *PM Stats* tab near the top and the *SIPMSG* tab near the bottom. See [Figure 1](#).

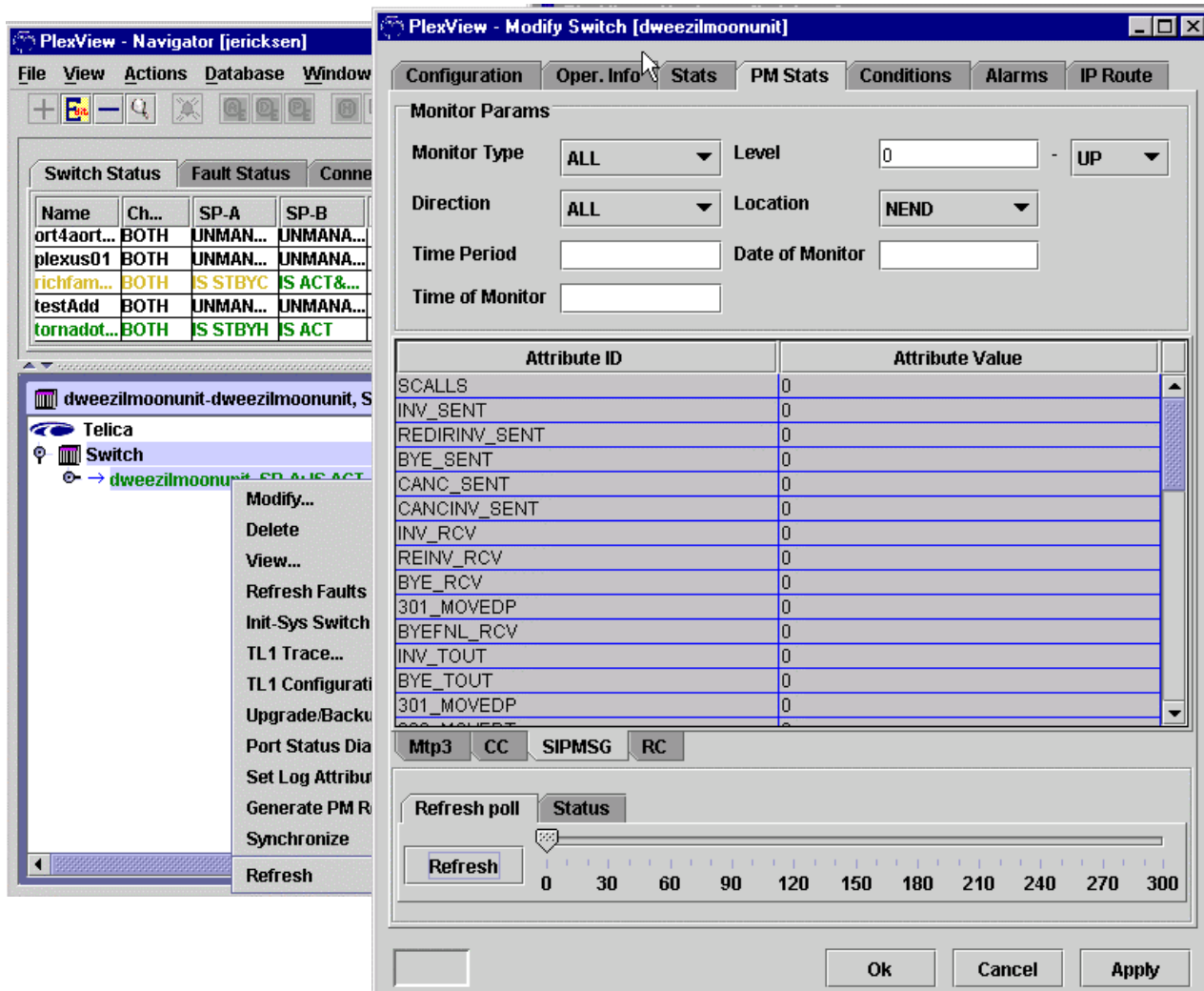


Figure 1. PM Stats of SIP Messages

### Parameters and Descriptions

|              |                                 |
|--------------|---------------------------------|
| 301_MOVEDP   | = Moved Permanently             |
| 302_MOVEDT   | = Moved Temporarily             |
| 401_UNAUTH   | = Unauthorized                  |
| 402_PAYUPH   | = Payment required              |
| 403_FORBID   | = Forbidden.                    |
| 404_NOTFND   | = Not Found                     |
| 405_METHD    | = Method Not Allowed            |
| 406_NOTACC1  | = Not Acceptable                |
| 407_PROXY    | = Proxy Authentication Required |
| 408_TIMEOUT0 | = Request Timeout               |
| 409_CONFLCT  | = Conflict.                     |
| 410_GONE     | = Gone                          |
| 411_LENREQ   | = Length Required               |
| 413_ENTLEN   | = Request Entity Too Large      |
| 414_URILEN   | = Request-URI Too Long          |
| 415_MEDIA    | = Unsupported Media Type        |

|               |                                                            |
|---------------|------------------------------------------------------------|
| 420_BADEXT    | = Bad Extension                                            |
| 480_TEMPUNV   | = Temporarily Unavailable                                  |
| 483_HOPCNT    | = Too Many Hops                                            |
| 484_ADDRINC   | = Address Incomplete                                       |
| 485_AMBIGUO   | = Ambiguouss                                               |
| 486_BUSYHR    | = Busy Here                                                |
| 487_REQTERM   | = Request Terminated                                       |
| 488_NOTACCH   | = Not Acceptable                                           |
| 500_INTERR    | = Server Internal Error                                    |
| 501_NOTIMPL   | = Not Implemented                                          |
| 502_BADGTWY   | = Bad Gateway                                              |
| 503_SERVUNV   | = Service Unavailable                                      |
| 504_GTWYTO    | = Server Time-out                                          |
| 600_BUSYEV    | = Busy Everywhere                                          |
| 603_DECLINE   | = Decline                                                  |
| 604_NOEXIST   | = Does Not Exist Anywhere                                  |
| 606_NOTACC2   | = Not Acceptable                                           |
| BYE_RCV       | = Number of Bye messages received.                         |
| BYE_SENT      | = Number of Bye messages sent.                             |
| BYE_TOUT      | = Number of timeouts received                              |
| BYEFNL_RC     | = Number of 200 (OK) messages received                     |
| CANC_SENT     | = Number of CANCEL messages sent                           |
| CANCINV_SENT  | = Number of calls pending cancellation                     |
| INV_RCV       | = Number of INVITE messages received                       |
| INV_SENT      | = Number of INVITE messages sent                           |
| INV_TOUT      | = Number of INVITE messages.                               |
| REDIRINV_SENT | = Number of INVITE messages sent due to a REDIRECT request |
| REINV_RCV     | = Number of re-transmitted INVITE messages                 |
| SCALLS        | = Number of standing SIP calls                             |

5. Do you want to initialize register for SIP messages?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 2](#).

6. Initialize registers or event counters for SIP (Session Initiation Protocol) message statistics. Double-click the switch, Right-click the *switch name*, click *Modify* and then select *PM Stats* tab near the top and the *SIPMSG* tab near the bottom. Make required changes and then click *Ok* or *Apply*. See [Figure 1](#).

7. Do you want to initialize registers for another SIP message monitored type?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

8. Select your task from the following and go to the indicated step.

- Retrieve the PM data for SIP messages ..... [Step 10](#)
- Initialize registers for SIP message ..... [Step 12](#)
- Finished, no other task in the above list..... continue to the next step.

9.  **YOU HAVE COMPLETED THIS PROCEDURE.**

10. Retrieve current and historical performance data related to SIP (Session Initiation Protocol) messages using the RTRV-PM-SIPMSG command.

Command Syntax: RTRV-PM-SIPMSG: [TID]: [<com>]: [CTAG]: :  
[<sipmontype>], [<monlev>], [<locn>],  
[<dirn>], [<timper>], [<mondatt>],  
[<montm>];

**Input Parameters:**

com = COM - Aid  
sipmontype = 301\_MOVEDP - Moved Permanently  
= 302\_MOVEDT - Moved Temporarily  
= 401\_UNAUTH - Unauthorized  
= 402\_PAYUPH - Payment required  
= 403\_FORBID - Forbidden.  
= 404\_NOTFND - Not Found  
= 405\_METHD - Method Not Allowed  
= 406\_NOTACC1 - Not Acceptable  
= 407\_PROXY - Proxy Authentication Required  
= 408\_TIMEOUT0 - Request Timeout  
= 409\_CONFLCT - Conflict.  
= 410\_GONE - Gone  
= 411\_LENREQ - Length Required  
= 413\_ENTLEN - Request Entity Too Large  
= 414\_URIEN - Request-URI Too Long  
= 415\_MEDIA - Unsupported Media Type  
= 420\_BADEXT - Bad Extension  
= 480\_TEMPUNV - Temporarily Unavailable  
= 483\_HOPCNT - Too Many Hops  
= 484\_ADDRINC - Address Incomplete  
= 485\_AMBIGUO - Ambiguous  
= 486\_BUSYHR - Busy Here  
= 487\_REQTERM - Request Terminated  
= 488\_NOTACCH - Not Acceptable  
= 500\_INTERR - Server Internal Error  
= 501\_NOTIMPL - Not Implemented  
= 502\_BADGTWY - Bad Gateway  
= 503\_SERVUNV - Service Unavailable

|        |                                                                                                                            |
|--------|----------------------------------------------------------------------------------------------------------------------------|
|        | = 504_GTWYTO - Server Time-out                                                                                             |
|        | = 600_BUSYEV - Busy Everywhere                                                                                             |
|        | = 603_DECLINE - Decline                                                                                                    |
|        | = 604_NOEXIST - Does Not Exist Anywhere                                                                                    |
|        | = 606_NOTACC2 - Not Acceptable                                                                                             |
|        | = <b>ALL</b> - all monitored parameters                                                                                    |
|        | = BYE_RCV - Number of Bye messages received.                                                                               |
|        | = BYE_SENT - Number of Bye messages sent.                                                                                  |
|        | = BYE_TOUT - Number of timeouts received                                                                                   |
|        | = BYEFNL_RC - Number of 200 (OK) messages received                                                                         |
|        | = CANCEL_SENT - Number of CANCEL messages.                                                                                 |
|        | = CANCEL_SENT - Number of CANCEL messages sent                                                                             |
|        | = CANCEL_INV_SENT - Number of calls pending cancellation                                                                   |
|        | = INV_RCV - Number of INVITE messages received                                                                             |
|        | = INV_SENT - Number of INVITE messages sent                                                                                |
|        | = INV_TOUT - Number of INVITE messages.                                                                                    |
|        | = OTHER - Number of terminated calls due to undefined release conditions.                                                  |
|        | = REDIRECT_INV_SENT - Number of INVITE messages sent due to a REDIRECT request                                             |
|        | = REINV_RCV - Number of re-transmitted INVITE messages                                                                     |
|        | = SCALLS - Number of standing SIP calls                                                                                    |
| monlev | = {0 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                                    |
| locn   | = <b>NEND</b> - Near end counters to be initialized.                                                                       |
| dirn   | = <b>ALL</b> - All directions of the data stored in statistics counters.                                                   |
|        | = NA - Direction not applicable.                                                                                           |
|        | = RCV - Receive direction only of the data stored in statistics counters.                                                  |
|        | = TRMT - Transmit direction only of the data stored in statistics counters.                                                |
| tmper  | = 1-DAY = Accumulation period is exactly one day                                                                           |
|        | = {1 . . . 24}-HR = Accumulation period is one to 24 hours (one day)                                                       |
|        | = {1 . . . 1440}-MIN = Accumulation period is one to 1440 minutes                                                          |
| mondat | = {1 . . . 12}-{1 . . . 31} - Monitored date. The format is MM-DD. Default is current date. Not supported; leave it blank. |
| montm  | = {0 . . . 23}-{0 . . . 59} - Monitored time. The format is HH-MM. Default is current time. Not supported; leave it blank. |

Command Example: RTRV-PM-SIPMSG;

Output format and examples are on the following page.

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<pm_id>:MONTYPE=<montype>,MONVAL=<monval>,
 [VLDTY=<vldty>],[LOCN=<locn>],[DIRN=<dirn>],
 [TMPER=<tper>],[MONDAT=<mondatt>],[MONTM=<montm>]"
;
```

**Output Parameters:**

Refer to input parameters.

**Output Example:**

```
telica 2003-02-13 13:38:11
M 0 COMPLD
 "COM:SCALLS,0"
 "COM:INV_SENT,0"
 "COM:REDIRINV_SENT,0"
 "COM:BYE_SENT,0"
 "COM:CANC_SENT,0"
 .
 "COM:600_BUSYEV,0"
 "COM:603_DECLINE,0"
 "COM:604_NOEXIST,0"
 "COM:606_NOTACC2,0"
 /* RTRV-STATUS-SIPMSG */
;
```

11. Do you want to initialize register for SIP messages?

If **YES**, then continue to the next step.

If **NO**, then go to [Step 8](#).

12. Initialize registers or event counters for SIP (Session Initiation Protocol) message statistics using the INIT-REG-SIPMSG command.

Command Syntax: INIT-REG-SIPMSG:[TID]:[<com>]:[CTAG]::  
[<sipmontype>],[<monval>],[<locn>],[<di  
rn>],[<tper>],[<mondatt>],[<montm>];

**Input Parameters:**

com = COM is the AID of the Plexus 9000.

montype Refer to RTRV-PM-SIPMSG command in [Step 10](#).

monnval = {0 . . . 9999} - Value to which the counters identified by *montype* are to be initialized. The value is "0" if the value of *montype* is "ALL".

locn = **NEND** - Near end counters to be initialized.

dirn                   = **BTH** - Both directions of the data stored in statistics counters.  
                      = **NA** - Direction not applicable.  
                      = **RCV** - Receive direction only of the data stored in statistics counters.  
                      = **TRMT** - Transmit direction only of the data stored in statistics counters.

Command Example: **INIT-REG-SIPMSG;**

**13.**     Do you want to initialize registers for another SIP message monitored type?

    If **YES**, then go to [Step 12](#).

    If **NO**, then go to [Step 8](#).

**NOTES:**



## DLP-645 - RETRIEVE STATUS FOR TDM, ATM AND PACKET TERMINATIONS

**SUMMARY:** This procedure explains how to retrieve status for TDM and packet terminations used on a MEGACO call, TDM and packet terminations and packet terminations used on a MEGACO call.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Context identification
  - Real-time transport protocol identification
  - TDM identification
2. Select your task from the following and go to the indicated step.
  - Retrieve information on TDM and packet terminations ..... [Step 4](#)
  - Retrieve information on packet terminations 1..... [Step 6](#)
  - Retrieve information on TDM terminations..... [Step 8](#)
  - Retrieve information on packet terminations..... [Step 10](#)
  - Retrieve information on ATM terminations..... [Step 12](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve information on TDM and packet terminations used on a MEGACO call using the RTRV-STATUS-CTXT command.

Command Syntax: RTRV-STATUS-CTXT:[TID]:[<ctxtId>]:  
[CTAG]::[<numCtxts>;

**Input Parameters:**

ctxtId = {0 . . . 4,294,967,295} - AID in a MEGACO context.  
numCtxts = {0 . . . **20** . . . 32767} - Number of contexts for which to retrieve information.

Command Example: RTRV-STATUS-CTXT;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "CTXTID=<ctxtId>, [TDMTERMIDLIST=<tdmTermIdList>],
 [VOIPTERMIDLIST=<voipTermIdList>],
 [CONFERENCERSC=<conferenceRsc>],
 [TOPOLOGYLIST=<topologyList>], "
;
```

**Output Parameters:**

|                |                                                                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ctxtId         | = {0 . . . 4,294,967,295} - ID as a MEGACO context.                                                                                                                                      |
| tdmTermIdList  | = {alphanumeric characters (Chassis/TDM/IOM{1-17}/<br>T{1-8}/P{1-28}/C{1-24})} - List of TDM terminations,<br>, in the form: Chassis/Termination type/IOM/DS3<br>port/DS1port/ Channel . |
| voipTermIdList | = {alphanumeric characters} - List of VoIP terminations,<br>in the form: Chassis/Termination type/IOM/numeric ID<br>for the VoIP termination                                             |
| conferenceRsc  | = {alphanumeric characters} - List of Topology<br>terminations, in the form: Chassis/Termination<br>type/IOM/numeric ID                                                                  |
| topologyList   | = {alphanumeric characters} - Conference Resource<br>identifier.                                                                                                                         |

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
 "CTXTID=3117056, TDMTERMIDLIST=TELICA/TDM/IOM4/
 T3/P9/C10&, VOIPTERMIDLIST=TELICA/RTP/IOM9/900e49f&,
 CONFERENCERSC=NULL, TOPOLOGYLIST=NULL "
 "CTXTID=3117058, TDMTERMIDLIST=TELICA/TDM/IOM1/
 T7/P8/C23&, VOIPTERMIDLIST=TELICA/RTP/IOM9/900e4a0&,
 CONFERENCERSC=NULL, TOPOLOGYLIST=NULL "
 /* RTRV-STATUS-CTXT */
;
```

5. Do you need to retrieve information on another CTXT?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



**Note:** The RTRV-STATUS-RTPTERMID command is not available for software version 3.8.

6. Retrieve information on packet terminations used on a MEGACO call using the RTRV-STATUS-RTPTERMID command

Command Syntax: RTRV-STATUS-RTPTERMID: [TID]:  
<rtpTermId>:[CTAG];

**Input Parameters:**

rtpTermId = {alphanumeric characters} in the form of  
Chassis/Termination type/IOM/numeric ID for a  
ephemeral RTP termination = Chassis/RTP/IOM{1-  
17}/32-bit field in hex - AID for a packet termination.

Command Example: RTRV-STATUS-RTPTERMID: :  
BOSTON/RTP/IOM3/900E495;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<rtpTermId>:[CTXTID=<ctxtId>],TXMODE=<txMode>,
 [REMOTEIP=<remoteIp>],REMOTEUDPPORT=<remoteUdpPort>,
 [LOCALIP=<localIp>],LOCALUDPPORT=<localUdpPort>,
 VPSSLOT=<vpsSlot>"
;
```

**Output Parameters:**

rtpTermId = {alphanumeric characters} in the form of  
Chassis/Termination type/IOM/numeric ID for a  
ephemeral RTP termination = Chassis/RTP/IOM{1-  
17}/32-bit field in hex - AID for a packet termination..

ctxtId = {0 . . . 4,294,967,295} - MEGACO context containing  
the termination.

txMode = RX - Receive  
= TX - Transmit  
= TXRX - Transmit and receive

remoteIp = {0-255}.{0-255}.{0-255}.{0-255} - Remote IP address.

remoteUdpPort = {1025 . . . 66535} - Remote UDP port.

localIp = {0-255}.{0-255}.{0-255}.{0-255} - Local IP address.

localUdpPort = {1025 . . . 66535} Identifies the local UDP port.

vpsSlot = {1 . . . 17} - VPS slot number.

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
"BOSTON/RTP/IOM3/900e49f: CTXTID=3000004, TXMODE=RX,
REMOTEIP=195.9.252.11, REMOTEUDPPORT=9876,
LOCALIP=195.165.245.2, LOCALUDPPORT=1982, VPSSLOT=4"
/* RTRV-STATUS-RTPTERMID */
```

7. Do you need to retrieve more information on packet terminations used on a MEGACO call?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

8. Retrieve information on TDM terminations used on a MEGACO call using the RTRV-STATUS-TDMTERMID command.

Command Syntax: RTRV-STATUS-TDMTERMID: [TID]:  
<tdmTermId>:[CTAG];

**Input Parameters:**

tdmTermId = {alphanumeric characters} in the form of  
Chassis/Termination type/IOM/DS3 port/DS1  
port/Channel = Chassis/TDM/IOM{1-17}/T{1-8}/P{1-  
28}/C{1-24} AID as a TDM termination.

Command Example: RTRV-STATUS-TDMTERMID: :  
BOSTON/TDM/IOM3/T3/P1/C6;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<tdmTermId>:CTXTID=<ctxtId>, DURATION=<duration>,
TDMSTATUS=<tdmstatus>, MODE=<mode>,
ECHOCANCSTATE=<echocancstate>,
ECHONLPSTATUS=<echonlpstatus>, ECHOTAIL=<echotail>"
;
```

**Output Parameters:**

tdmTermId = {alphanumeric characters} in the form of  
Chassis/Termination type/IOM/DS3 port/DS1  
port/Channel = Chassis/TDM/IOM{1-17}/T{1-8}/P{1-  
28}/C{1-24} - AID of a TDM termination.

ctxtId = {0 ... 4,294,967,295} - MEGACO context.

duration = {0 ... 65535} - Duration of the call in seconds.

tdmstatus = IS – State of TDM channel is In-Service.  
= OOS – State of TDM channel is Out-Of-Service.  
= OOS-MGC

|               |                                                                                                                                                                                |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mode          | = INACTIVE - Termination not in use<br>= LOOPBACK - Termination in loopback<br>= RECV_ONLY - Receive only<br>= SEND_ONLY - Transmit only<br>= SEND_RECV - Transmit and receive |
| echocancstate | = {ON OFF} – Echo cancellation can be enabled (ON) or cannot be enabled (OFF)                                                                                                  |
| echonlpstatus | = {ON OFF} – Echo cancellation is enabled (ON) or disabled (OFF)                                                                                                               |
| echotail      | = {0 8 18 32 64 128} - Number of milliseconds after transmission when echoes are cancelled.                                                                                    |

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
"BOSTON/TDM/IOM3/T3/P1/C6:CTXTID=3000004,
DURATION=100,TDMSTATUS=IS,MODE=SEND_ONLY,
ECHOCANCSTATE=ON,ECHONLPSTATUS=ON,ECHOTAIL=0"
/* RTRV-STATUS-TDMTERMID */
;
```

9. Do you need to retrieve information on other TDM terminations used on a MEGACO call?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).

10. Retrieve information on packet terminations used on a MEGACO call using the RTRV-STATUS-VOIPTERMID command.

Command Syntax: RTRV-STATUS-VOIPTERMID: [TID]:  
<voipTermId>: [CTAG];

**Input Parameters:**

voipTermId = {alphanumeric characters} in the form of  
Chassis/Termination RTP/IOM/numeric ID for RTP  
termination = Chassis/RTP{1025 . . . 65535}/IOM{1 . . .  
17}/{32-bit field printed in hex} AID as a VoIP  
termination.

Command Example: RTRV-STATUS-VOIPTERMID: :  
BOSTON/RTP/IOM3/900E49F;

**Output Format:**

```

 SID DATE TIME
M CTAG COMPLD
 "<voipTermId>:[CTXTID=<ctxtId>],
 DURATION=<duration>,MODE=<mode>,[LOCALIP=<localIp>],
 LOCALUDPPORT=<localUdpPort>,[REMOTEIP=<remoteIp>],
 REMOTEUDPPORT=<remoteUdpPort>,LOCALCODEC=<localCodec>,
 REMOTECODEC=<remoteCodec>"
 ;

```

**Output Parameters:**

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tdmTermId     | = {alphanumeric characters} in the form of<br>Chassis/Termination RTP/IOM/ numeric ID for RTP<br>termination = Chassis/RTP{1025 . . . 65535}/IOM{1 . . .<br>17}/P{ 32-bit field printed in hex } AID as a VoIP<br>termination.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ctxtId        | = {0 . . . 4,294,967,295} - MEGACO context.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| duration      | = {0 . . . 65535} - Duration of the call in seconds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| mode          | = INACTIVE - Termination not in use<br>= LOOPBACK - Termination in loopback<br>= RECV_ONLY - Receive only<br>= SEND_ONLY - Transmit only<br>= SEND_RECV- Transmit and receive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| localIP       | = {0 . . . 255}.{0 . . . 255}.{0 . . . 255}.{0 . . . 255} – Local<br>IP address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| localUdpPort  | = {1025 . . . 65535} – Local UDP port.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| remoteIp      | = {0 . . . 255}.{0 . . . 255}.{0 . . . 255}.{0 . . . 255} –<br>Remote IP address.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| remoteUdpPort | = {1025 . . . 65535} – Remote UDP port.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| localCodec    | = Audio codec (coding/decoding algorithm types) used at<br>the near end.<br>= CISCOCLEARCHANNEL - encoding algorithm for the<br>transmission of clear channel data (unrestricted digital<br>data, i.e., ISDN HDLC traffic) in an RTP media stream<br>= CLEARMODE - encoding algorithm for the<br>transmission of clear channel data (unrestricted digital<br>data, i.e., ISDN HDLC traffic) in an RTP media stream<br>= G711 - G.711 for mu-law PCM encoding (North<br>America)<br>= G711ALAW - G.711 for a-law PCM encoding (Europe)<br>= G723_53 - G.723 encoding at 5.3 Kbps<br>= G723_63 - G.723 encoding at 6.3 Kbps<br>= G726_16 - G.726 encoding at 16 Kbps (currently<br>unsupported)<br>= G726_24 - G.726 encoding at 24 Kbps (currently<br>unsupported)<br>= G726_32 - G.726 encoding at 32 Kbps |

= G726\_40 - G.726 encoding at 40 Kbps (currently unsupported)  
= G729 - G.729A encoding  
= G729E - G.729E encoding (currently unsupported)  
= NULL - no value specified  
= X\_CCD - encoding algorithm for the transmission of clear channel data (unrestricted digital data, i.e., ISDN HDLC traffic) in an RTP media stream  
remoteCodec = Audio codec (coding/decoding algorithm types) used at the far end. See localCodec.

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD
"TELICA/RTP/IOM9/900e49f:CTXTID=30000004,
DURATION=9, LOCALIP=70.0.1.11, LOCALUDPPORT=2000,
REMOTEIP=70.0.1.11, REMOTEUDPPORT=2000, LOCALCODEC=G711,
REMOTECODEC=G711"
/* RTRV-STATUS-VOIPTERMID */
;
```

11. Do you need to retrieve information on other packet terminations used on a MEGACO call?

If **YES**, then go to [Step 10](#).

If **NO**, then go to [Step 2](#).

12. Retrieve information on ATM (VOA) terminations used on a MEGACO call using the RTRV-STATUS-VOATERMID command.

Command Syntax: RTRV-STATUS-VOATERMID: [TID]:  
<atmTermId>: CTAG;

**Input Parameters:**

atmTermId = {alphanumeric characters} in the form of  
Chassis/Termination type/IOM/DS3 port/DS1  
port/Channel = Chassis/TDM/IOM{1-17}/T{1-8}/P{1-  
28}/C{1-24} AID as a ATM termination.

Command Example: RTRV-STATUS-ATMTERMID: :  
BOSTON/TDM/IOM3/T3/P1/C6;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<atmTermId>:SLOT=<slot>,CTXTID=<ctxt>,
 DURATION=<duration>,MODE=<mode>,VCCI=<vcci>,CID=<cid>,
 LOCALCODEC=<localCodec>,REMOTECODEC=<remoteCodec>"
;
```

**Output Parameters:**

|             |                                                                                                                                                                                |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| atmTermId   | = .                                                                                                                                                                            |
| slot        | = {1 ... 17} – Slot number.                                                                                                                                                    |
| ctxt        | = {0 ... 4,294,967,295} – Context number.                                                                                                                                      |
| duration    | = {0 ... 65535} - Duration of the call in seconds.                                                                                                                             |
| mode        | = INACTIVE - Termination not in use<br>= LOOPBACK - Termination in loopback<br>= RECV_ONLY - Receive only<br>= SEND_ONLY - Transmit only<br>= SEND_RECV - Transmit and receive |
| vcci        | = {0 ... 65535} - Virtual Circuit Channel Identifier                                                                                                                           |
| cid         | = {0 ... 65535} - Connection Identifier                                                                                                                                        |
| localCodec  | = {alphanumeric string}                                                                                                                                                        |
| remoteCodec | = {alphanumeric string}                                                                                                                                                        |

**Output Example:**

```
telica 2002-05-25 14:37:49
M 0 COMPLD

/* RTRV-STATUS-ATMTERMID */
;
```

13. Do you need to retrieve information on other ATM terminations used on a MEGACO call?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).



## DLP-647 - RETRIEVE ISDN STATUS

**SUMMARY:** This procedure explains how to retrieve status of an ISDN link and specified ISDN B channels.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

The following information is required in order to complete this procedure:

- ISDN interface and link numbers
- B channel

2. Are you going to be using EMS or TL1 to check PM data and/or initialize registers for ISUP messages?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 7](#).

3. Select your task from the following and go to the indicated step.

- Retrieve the current state of specified ISDN B channels..... [Step 5](#)
- Finished, no other task in the above list..... continue to the next step.

4.  **YOU HAVE COMPLETED THIS PROCEDURE.**

5. Retrieve the current state of specified ISDN B channels on a link. Double-click the switch, *ISDN* and *Links*. Right-click the *link*, click *View* and then select *Oper. Info* tab at the top and click *Refresh* for latest information. See [Figure 1](#).

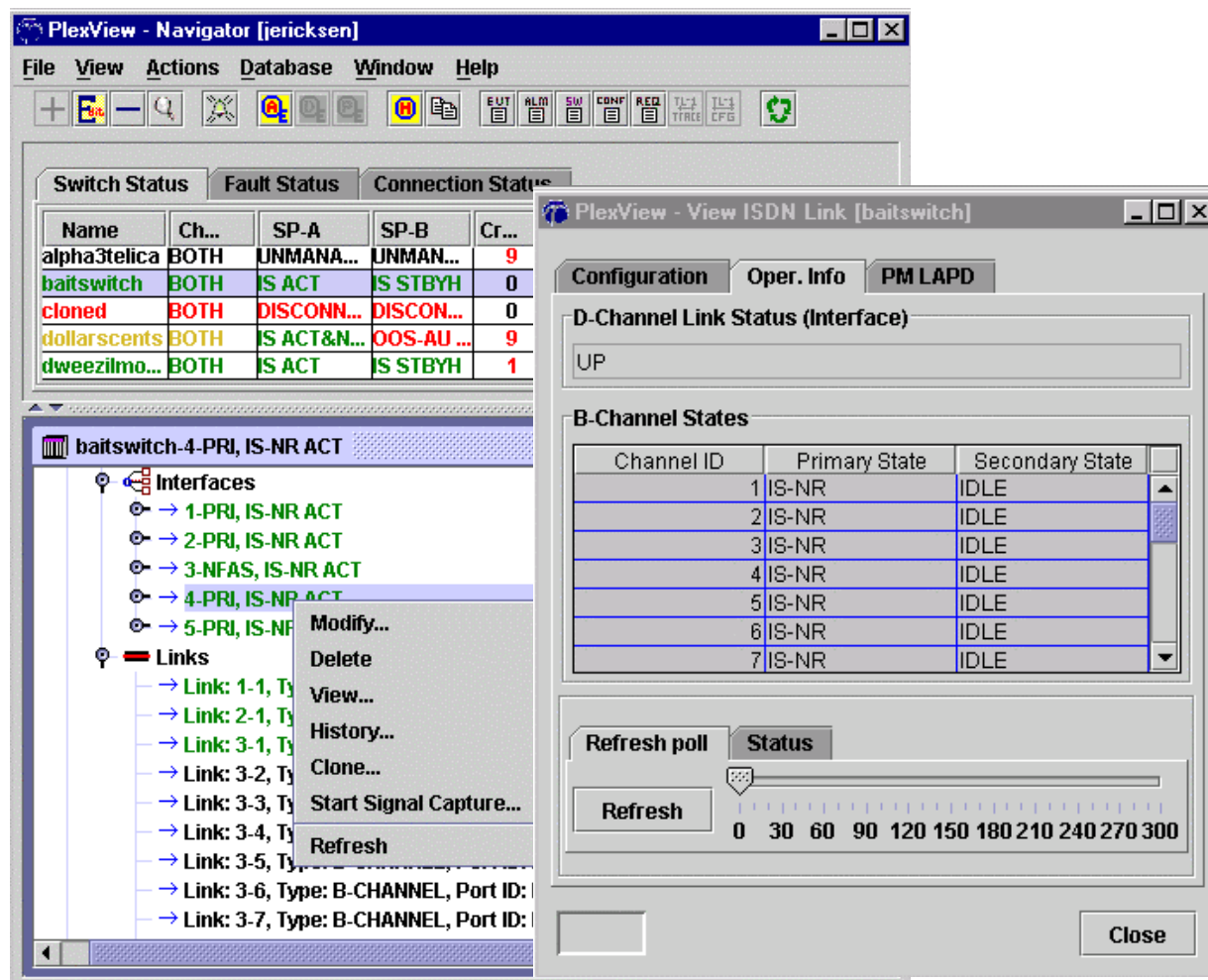


Figure 1. State of ISDN B Channels

### Parameters and Descriptions

- primaryState
- = IS-NR - Primary State is In Service, Normal
  - = OOS - Primary State is Out of Service
  - = OOS-AU - Primary State is Out of Service, Autonomous
  - = OOS-MA - Primary State is Out of Service, Management
  - = OOS-AUMA - Primary State is Out of Service, Autonomous and Management
- secondaryState
- = BLKD - Secondary State is Blocked.
  - = BUSY - Secondary State is Bearer channel carrying traffic.
  - = DCHL - Secondary State is D-channel.
  - = DSBLD - Secondary State is Disabled.
  - = IDLE - Secondary State is Bearer channel available to carry traffic.
  - = NOTBCHAN - Secondary State is not a B-channel.

- = RSTRQD - Secondary State is Reset Required.
- = SGEO - Secondary State is Supporting Entity Out of Service.
- = UAS - Secondary State is Unassigned.

6. Do you need to retrieve status of other B channels?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 3](#).

7. Select your task from the following and go to the indicated step.

- Retrieve the current state of an ISDN link ..... [Step 9](#)
- Retrieve the current state of specified ISDN B channels ..... [Step 11](#)
- Finished, no other task in the above list ..... continue to the next step.

8.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The RTRV-STATUS-ISDNLNK command is not available with all software releases (e.g., 3.8).

9. Retrieve the current state of an ISDN link using the RTRV-STATUS-ISDNLNK command.

Command Syntax: RTRV-STATUS-ISDNLNK: [TID]:  
<isdnLnkStaStateId>:CTAG];

**Input Parameters:**

isdnLnkStaStateId = {1 ... 32767}-{1 ... 32767} – Interface and link ID

Command Example: RTRV-STATUS-ISDNLNK: :5001-5001;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<isdnLnkStaStateId>:<isdnLnkStaState>"
;
```

**Output Parameters:**

isdnLnkStaStateId = {1 ... 32767}-{1 ... 32767} – Interface and link ID  
isdnLnkStaState = CONNECT - Link is connecting.  
= DOWN - Link is down.  
= RESTART - Link is restarting.  
= UP - Link is up.

**Output Example:**

```
telica 2003-02-25 14:37:49
M 0 COMPLD
"5001-5001:UP"
/* RTRV-STATUS-ISDNLNK */
```

10. Do you need to retrieve information on another ISDN link?

If **YES**, then go to [Step 9](#).

If **NO**, then go to [Step 7](#).

11. Retrieve the current state of specified ISDN B channels on a link using the RTRV-STATUS-ISDNBCHAN command.

Command Syntax: RTRV-STATUS-ISDNBCHAN:[TID]:  
<isdnBcStaChanId>:[CTAG]:[<numChans>;

**Input Parameters:**

isdnBcStaChanId = {1 ... 32767}-{1 ... 32767}-{1 ... 24} - Interface and link and channel  
numChans = {1 ... 24} - Number of channels to retrieve

Command Example: RTRV-STATUS-ISDNBCHAN::5001-5001-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
```

```
"<isdnBcStaChanId>:<primaryState>,[<secondaryState>]"
;
```

**Output Parameters:**

isdnBcStaChanId = {1 ... 32767}-{1 ... 32767}-{1 ... 24} - Interface and link and channel  
primaryState = IS-NR - Primary State is In Service, Normal  
= OOS - Primary State is Out of Service  
= OOS-AU - Primary State is Out of Service, Autonomous  
= OOS-MA - Primary State is Out of Service, Management  
= OOS-AUMA - Primary State is Out of Service, Autonomous and Management  
secondaryState = BLKD - Secondary State is Blocked.  
= BUSY - Secondary State is Bearer channel carrying traffic.  
= DCHL - Secondary State is D-channel.  
= DSBLD - Secondary State is Disabled.  
= IDLE - Secondary State is Bearer channel available to carry traffic.

- = NOTBCHAN - Secondary State is not a B-channel.
- = RSTRQD - Secondary State is Reset Required.
- = SGEO - Secondary State is Supporting Entity Out of Service.
- = UAS - Secondary State is Unassigned.

**Output Example:**

```
telica 2003-02-25 14:37:49
M 0 COMPLD
"5001-5001-1:IS-NR,IDLE"
/* RTRV-STATUS-ISDNBC */
;
```

12. Do you need to retrieve status of other B channels?

If **YES**, then go to [Step 11](#).

If **NO**, then go to [Step 9](#).

**NOTES:**

## DLP-652 - RETRIEVE ENET STATS

**SUMMARY:** This procedure explains how to retrieve statistics of an Ethernet module or ports of an Ethernet module.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Ethernet port
2. Retrieve the statistics of an Ethernet port using the RTRV-STATS-ENET command.

Command Syntax: RTRV-STATS-ENET:[TID]:<enetId>:[CTAG];

**Input Parameters:**

enetId = IOM-{8} – AID of Ethernet module.  
= IOM-{8}-ENET-{1-4} – AID of Ethernet port.

Command Example: RTRV-STATS-ENET::IOM-8-ENET-2;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<enetId>:[MACADDR=<macaddr>],
 [SUCCESSFUL-PKT-TX=<successfulPktTx>],
 [SUCCESSFUL-PKT-RX=<successfulPktRx>],
 [ERROR-PKT-TX=<errorPktTx>],
 [ERROR-PKT-RX=<errorPktRx>],
 [NUM-PAUSE-FRM-TX=<numPauseFrmTx>],
 [NUM-PAUSE-FRM-RX=<numPauseFrmRx>],
 [TOTAL-BYTES-TX=<totalBytesTx>],
 [TOTAL-BYTES-RX=<totalBytesRx>],
 [TOTAL-ERR-BYTES-TX=<totalErrBytesTx>],
 [TOTAL-ERR-BYTES-RX=<totalErrBytesRx>]"
;
```

**Output Parameters:**

|                 |                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------|
| enetId          | = IOM-{8}-ENET-{1-4} - Ethernet port on an I/O module.                                             |
| macaddr         | = {six hex bytes separated by spaces} - MAC (Medium Access Control) address for the Ethernet port. |
| successfulPktTx | = {0 – 4,294,967,295} - Total number of packets successfully transmitted.                          |
| successfulPktRx | = {0 – 4,294,967,295} - Total number of packets successfully received.                             |
| errorPktTx      | = {0 – 4,294,967,295} - Total number of packets transmitted with errors.                           |
| errorPktRx      | = {0 – 4,294,967,295} - Total number of packets received with errors.                              |
| numPauseFrmTx   | = {0 – 4,294,967,295} - Total number of paused frames transmitted.                                 |
| numPauseFrmRx   | = {0 – 4,294,967,295} - Total number of paused frames received.                                    |
| totalBytesTx    | = {0 – 4,294,967,295} - Total number of bytes transmitted.                                         |
| totalBytesRx    | = {0 – 4,294,967,295} - Total number of bytes received.                                            |
| totalErrBytesTx | = {0 – 4,294,967,295} - Total number of bytes transmitted with errors.                             |
| totalErrBytesRx | = {0 – 4,294,967,295} - Total number of bytes received with errors.                                |

**Output Example:**

```
telica 2003-02-25 14:37:49
M 0 COMPLD
 "IOM-8-ENET-2:MACADDR=0 30 fa 0 20 dd,
 SUCCESSFUL-PKT-TX=1148558, SUCCESSFUL-PKT-RX=1149799,
 ERROR-PKT-TX=0, ERROR-PKT-RX=0, NUM-PAUSE-FRM-TX=0,
 NUM-PAUSE-FRM-RX=0, TOTAL-BYTES-TX=216856484,
 TOTAL-BYTES-RX=216971398, TOTAL-ERR-BYTES-TX=0,
 TOTAL-ERR-BYTES-RX=0"
 /* RTRV-STATS-ENET */
;
```

3. Analyze retrieved information. If there a large number of error type messages, determine reason and correct.
4. Do you need to retrieve information for another Ethernet port?  
If **YES**, then go to [Step 2](#).  
If **NO**, then go to continue to the next step.

5.  **YOU HAVE COMPLETED THIS PROCEDURE.**



## DLP-653 - RETRIEVE PM DATA AND SET/RETRIEVE THRESHOLDS FOR A VCC OR CKT

**SUMMARY:** This procedure provides steps to retrieve the performance monitoring data and set/retrieve thresholds for VOIP virtual circuit connections.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Voice Processor IOM number
  - Termination
2. Select your task from the following and go to the indicated step.
  - Retrieve PM data of a VCC..... [Step 4](#)
  - Set thresholds for a VCC..... [Step 6](#)
  - Retrieve thresholds for a VCC ..... [Step 8](#)
  - Retrieve PM data of a VOIP termination..... [Step 10](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve current and historical performance data gathered for a VOIP virtual circuit connection (VCC) using the RTRV-PM-VCCVOIP command.

Command Syntax: RTRV-PM-VCCVOIP:[TID]:<vpsId>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>],[<tmper>],[<mondatt>],  
[<montm>];

**Input Parameters:**

vpsId = IOM-{1 . . . 17} – VP IOM number.  
= IOM-{1 . . . 17}-VCC-(0 . . . 799) – VP IOM and VP number.

|         |                                                                                                                                                                                                                                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| montype | = <b>ALL</b> - All statistics counters.<br>= CT - Cells Transmitted.<br>= CR - Cells Received.<br>= AAL5CRCERR - AAL5 CRC Errors detected.<br>= AAL5ENCAPERR - AAL5 frames was not properly encapsulated according to RFC-1483. |
| monlev  | = {0 . . . 255}-{ <b>UP</b>  DOWN} - Level of the requested monitored parameter.                                                                                                                                                |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                                                                                                                                            |
| dirn    | = <b>BOTH</b> - Both directions.<br>= RCV - Receive direction only.<br>= TRMT - Transmit direction only                                                                                                                         |
| tmper   | = {24}-HR - Interval of one to 24 hours.<br>= {15}-MIN - Interval of one to 1440 minutes.                                                                                                                                       |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank.                                                                                                                 |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.                                                                                                                 |

Command Example: RTRV-PM-VCCVOIP::IOM-16;

#### Output Format:

```

 SID DATE TIME
M CTAG COMPLD
 "<vpsId>:<montype>,<monval>,<vldty>,<locn>,<dirn>,<tmper>,<mondatt>,<montm>"
 ;

```

#### Output Parameters:

|         |                                                                                                                                                                                                                                                                           |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vpsId   | = IOM-{1 . . . 17} - VP IOM number.<br>= IOM-{1 . . . 17}-VCC-(0 . . . 799) - VP IOM and VP number.                                                                                                                                                                       |
| montype | = <b>ALL</b> - All statistics counters.<br>= CT - Cells Transmitted.<br>= CR - Cells Received.<br>= AAL5CRCERR - AAL5 CRC Errors detected.<br>= AAL5ENCAPERR - AAL5 frames was not properly encapsulated according to RFC-1483.                                           |
| monval  | = {0 . . . 4,294,967,295} - Monitored value.                                                                                                                                                                                                                              |
| vldty   | = ADJ - Data manually adjusted or initialized<br>= COMPL - Data accumulated over the entire time period<br>= LONG - Data accumulated over greater than the entire time period<br>= NA - Data not available<br>= PRTL - Data accumulated over a portion of the time period |
| monlev  | = {0-255}-{UP,DOWN} - Level of the requested monitored parameter.                                                                                                                                                                                                         |
| locn    | = <b>NEND</b> - Location of the storage counters.                                                                                                                                                                                                                         |

dirn           = ALL - All directions  
              = NA - Direction not applicable  
              = RCV - Receive direction only  
              = TRMT - Transmit direction only  
tmper          = {24}-HR - Interval of one to 24 hours.  
              = {15}-MIN - Interval of one to 1440 minutes.  
mondatt       = {1-12}-{1-31} - Monitored date in format of MM-DD.  
montm         = {0-23}-{0-59} - Monitored time in format of HH-MM.

**Output Example:**

```
telica 2002-11-07 16:00:34
M 0 COMPLD
 "IOM-10-VCC-1:CT,55555"
 "IOM-10-VCC-1:CR,666666"
 "IOM-10-VCC-1:AAL5CRCERR"
 "IOM-10-VCC-1:AAL5ENCAPERR,0"
/* RTRV-PM-VCCVOIP */
;
```

5. Do you want to retrieve PM data of another VCC?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



**Note:** The SET-TH-VCCVOIP and RTRV-TH-VCCVOIP commands are not supported in versions 3.8 and higher.

6. Set performance monitoring parameter threshold levels using the SET-TH-VCCVOIP command.

Command Syntax: SET-TH-VCCVOIP:[<tid>]:[<aid>]:<ctag>::  
                  <montype>,<thlev>,[<locn>],[<dirn>]  
                  [,<tmper>];

**Input Parameters:**

aid           = COM– Aid for virtual circuit connection.  
montype       = AAL5CRCERR - AAL5 CRC Errors detected.  
              = AAL5ENCAPERR - AAL5 frames was not properly  
                  encapsulated according to RFC-1483.  
thlev          = {0 . . . 4,294,967,295} - Threshold Level. If a monitored type  
                  exceeds this value, and REPT EVT VCCVOA will be sent.  
locn           = **NEND** – Near-end is location of the storage registers or event  
                  counters to be initialized.  
dirn           = NA – Direction is Not Applicable.  
tmper          = {1 . . . 24}-HR - Interval of one to 24 hours.  
              = {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.

Command Example: SET-TH-VCCVOIP:::::AAL5CRCERR,800;

7. Do you want to set other performance monitoring parameter threshold levels?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

8. Retrieve the current threshold level of one or more monitored performance counts using the RTRV-TH-VCCVOIP command. Refer to [Step 6](#) for parameter descriptions.

Command Syntax: RTRV-TH-VCCVOIP:[TID]:<aid>:[CTAG]::  
[<montype>],[<locn>],[<tmper>];

Command Example: RTRV-TH-VCCVOIP::COM;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<aid>:<montype>,[<locn>],<thlev>,[<tmper>]"
;
```

**Output Example:**

```
telica 2003-11-07 09:52:11
M 0 COMPLD
 "COM: AAL5CRCERR,NA,800,15-MIN"
 /* RTRV-TH-VCCVOIP */
;
```

9. Do you want to retrieve other threshold levels?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).

10. Retrieve current and historical performance data gathered for a VOIP termination (circuit) using the RTRV-PM-VOIPCKT command.

Command Syntax: RTRV-PM-VOIPCKT:[TID]:<voipCktId>:  
[CTAG]::[<montype>],[<monlev>],  
[<locn>],[<dirn>],[<tmper>],[<mondatt>],  
[<montm>];

**Input Parameters:**

voipCktId = CTEXT-<ctxId>, where *ctxId* = {0-4294967295}  
= TERM-<voipTermId>, where *voipTermId* is a string of alphanumeric characters, in the form: Chassis/Termination type/IOM/numeric ID for theephemeral RTP termination  
=Chassis/RTP/IOM{1-17}/32-bit field printed as hex

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| montype | = <b>ALL</b> - All types.<br>= JBCOUNT - Current jitter buffer count<br>= JITTER - Average inter-arrival jitter<br>= JITTERPEER - Peer's inter-arrival jitter<br>= OCTRX - Octets received<br>= OCTTX - Octets transmitted<br>= PKTLOST - Packets lost<br>= PKTLOSTPEER - Packets that didn't make it to the peer<br>= PKTRX - Packets received<br>= PKTSIDRX - SID (Silence Insertion Descriptor) packets received<br>= PKTSIDTX - SID packets transmitted<br>= PKTTX - Packets transmitted<br>= RTCPPKTRX - RTCP packets received (presently unsupported)<br>= RTCPPKTTX - RTCP packets transmitted (presently unsupported)<br>= RTDELAY - Round trip delay (presently unsupported)<br>= SDULOST - SDU (Service Data Units) lost = |
| monlev  | = {1 . . . 255}-{ <b>UP</b>   <b>DOWN</b> } - Level of the requested monitored parameter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| locn    | = <b>NEND</b> - Near end counters to be initialized.<br>= <b>FEND</b> - Far end counters to be initialized.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| dirn    | = <b>BOTH</b> - Both directions.<br>= <b>RCV</b> - Receive direction only.<br>= <b>TRMT</b> - Transmit direction only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| tmper   | = {24}-HR - Interval of one to 24 hours.<br>= {15}-MIN - Interval of one to 1440 minutes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Command Example: RTRV-PM-VOIPCKT::CTXT-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<voipCktId>:<montype>,<monval>,[<vldty>],[<locn>],
[<dirn>],[<tmper>],[<mondatt>],[<montm>]"
;
```

**Output Example:**

```
telica 2004-05-14 14:37:49
M 0 COMPLD
 "CTXT-1:OCTTX,555555"
 "CTXT-1:PKTTX,111111"
 "CTXT-1:PKTSIDTX,0"
 "CTXT-1:JITTER,0"
 "CTXT-1:OCTRX,0"
 "CTXT-1:PKTRX,0"
 "CTXT-1:PKTLOST,0"
 "CTXT-1:PKTSIDRX,0"
 "CTXT-1:PKTLOSTPEER,0"
 "CTXT-1:JITTERPEER,0"
 "CTXT-1:SDULOST,0"
 "CTXT-1:JBCOUNT,0"
 "CTXT-1:RTDELAY,0"
 "CTXT-1:RTCPPKTTX,0"
 "CTXT-1:RTCPPKTRX,0"
 /* RTRV-PM-VOIPCKT */
;
```

- 11.** Do you want to retrieve another termination (circuit?

If **YES**, then go to [Step 10](#).

If **NO**, then go to [Step 2](#).

## DLP-654 - RETRIEVE PM DATA AND SET/RETRIEVE THRESHOLDS FOR VOICE PROCESSORS

**SUMMARY:** This procedure provides steps to retrieve the performance monitoring data and set/retrieve thresholds for a voice processor on an IOM carrying Voice over IP (VOIP).

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - Voice Processor IOM number
2. Select your task from the following and go to the indicated step.
  - Retrieve PM data of a VP..... [Step 4](#)
  - Set thresholds for a VP..... [Step 6](#)
  - Retrieve thresholds for a VP ..... [Step 8](#)
  - Finished, no other task in the above list..... continue to the next step.
3.  **YOU HAVE COMPLETED THIS PROCEDURE.**
4. Retrieve current and historical performance data gathered for a for a voice processor on an IOM carrying Voice over IP (VOIP) using the RTRV-PM-VPVOIP command.

Command Syntax: RTRV-PM-VPVOIP: [TID]:<vp\_Id>: [CTAG]: :  
[<montype>], [<monlev>], [<locn>],  
[<dirn>], [<tmper>], [<mondatt>],  
[<montm>];

**Input Parameters:**

pm\_Id = IOM-{1 . . . 17} – VP IOM number.  
 = IOM-{1 . . . 17}-VP-(1 . . . 8} – VP IOM and VP number.  
 montype = **ALL** - All statistics counters.  
 = CINDROP - Number of incoming cells dropped  
 = COUTDROP - Number of outgoing cells dropped  
 = CR - Cells Received.  
 = CT - Cells Transmitted.  
 = CTDR - Control Packets received  
 = CTDT - Control Packets transmitted  
 = CTPDROPINVALIDSIZE - Control packets dropped due to their invalid size  
 = CTPDROPNONUDP - Control packets dropped as they are not UDP..  
 = CTPDROPNORSRC - Control packets dropped due to lack of resources  
 = HEC - Cells with bad HEC  
 = IPR - IP Packets received  
 = IPRVALID - Valid IP packets received  
 = IPRBADSUM - IP packets received with BAD checksum  
 = IPRBADHLEN - IP packets received with BAD header length  
 = IPRBADIP - IP Packets received with BAD IP address  
 = IPRBADUDP - IP packets received with bad UDP port  
 = IPT - IP Packets transmitted  
 = PT - Packets Transmitted  
 = PR - Packets Received  
 = UDPT - UDP Packets transmitted  
 = UDPR - UDP Packets received  
 = UNRECCELLS - Unrecognized cells  
 monlev = {0 . . . 255}-{**UP**|DOWN} - Level of the requested monitored parameter.  
 locn = **NEND** - Near end counters to be initialized.  
 dirn = **NA** - Direction not applicable.  
 tmper = {24}-HR - Interval of one to 24 hours.  
 = {15}-MIN - Interval of one to 1440 minutes.  
 mondat = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank.  
 montm = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.

Command Example: RTRV-PM-VPVOIP : : IOM-11-VP-3;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<pm_Id>:<montype>,<monval>,<vldty>,<locn>,<dirn>,<tmper>,<mondat>,<montm>"
;
```



**Output Parameters:**

|         |                                                                          |
|---------|--------------------------------------------------------------------------|
| pm_Id   | = IOM-{1 . . . 17}-VP-(1 . . . 8) – VP IOM and VP number.                |
| montype | = <b>ALL</b> - All statistics counters.                                  |
|         | = CINDROP - Number of incoming cells dropped                             |
|         | = COUTDROP - Number of outgoing cells dropped                            |
|         | = CR - Cells Received.                                                   |
|         | = CT - Cells Transmitted.                                                |
|         | = CTDR - Control Packets received                                        |
|         | = CTDT - Control Packets transmitted                                     |
|         | = CTPDROPINVALIDSIZE - Control packets dropped due to their invalid size |
|         | = CTPDROPNONUDP - Control packets dropped as they are not UDP..          |
|         | = CTPDROPNORSRC - Control packets dropped due to lack of resources       |
|         | = HEC - Cells with bad HEC                                               |
|         | = IPR - IP Packets received                                              |
|         | = IPRVALID - Valid IP packets received                                   |
|         | = IPRBADSUM - IP packets received with BAD checksum                      |
|         | = IPRBADHLEN - IP packets received with BAD header length                |
|         | = IPRBADIP - IP Packets received with BAD IP address                     |
|         | = IPRBADUDP - IP packets received with bad UDP port                      |
|         | = IPT - IP Packets transmitted                                           |
|         | = PT - Packets Transmitted                                               |
|         | = PR - Packets Received                                                  |
|         | = UDPT - UDP Packets transmitted                                         |
|         | = UDPR - UDP Packets received                                            |
|         | = UNRECCELLS - Unrecognized cells                                        |
| monval  | = {0 . . . 4,294,967,295} - Monitored value.                             |
| vldty   | = ADJ - Data manually adjusted or initialized                            |
|         | = COMPL - Data accumulated over the entire time period                   |
|         | = LONG - Data accumulated over greater than the entire time period       |
|         | = NA - Data not available                                                |
|         | = PRTL - Data accumulated over a portion of the time period              |
| monlev  | = {0-255}-{UP,DOWN} - Level of the requested monitored parameter.        |
| locn    | = NEND - Location of the storage counters.                               |
| dirn    | = ALL - All directions                                                   |
|         | = NA - Direction not applicable                                          |
|         | = RCV - Receive direction only                                           |
|         | = TRMT - Transmit direction only                                         |
| tmper   | = {24}-HR - Interval of one to 24 hours.                                 |
|         | = {15}-MIN - Interval of one to 1440 minutes.                            |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD.                     |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM.                     |

**Output Example:**

```
telica 2002-11-07 16:00:34
M 0 COMPLD
 "IOM-11-VP-3:CTPDROPNONUDP,0,,,,,"
/* RTRV-PM-VPVOIP */
;
```

5. Do you want to retrieve PM data of another voice processor?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).



**Note:** The SET-TH-VPVOIP and SET-TH-VPVOIP commands are not supported in versions 3.8 and higher.

6. Set performance monitoring parameter threshold levels using the SET-TH-VPVOIP command.

Command Syntax: SET-TH-VPVOIP:[<tid>]:[<aid>]:<ctag>::  
<montype>,<thlev>,[<locn>],[<dirn>]  
[,<tmper>];

**Input Parameters:**

|         |   |                                                                                                                      |
|---------|---|----------------------------------------------------------------------------------------------------------------------|
| aid     | = | COM– Aid for virtual circuit connection.                                                                             |
| montype | = | CTPDROPINVALIDSIZE - Control packets dropped due to their invalid size                                               |
|         | = | CTPDROPNONUDP - Control packets dropped as they are not UDP..                                                        |
|         | = | CTPDROPNORSRC - Control packets dropped due to lack of resources                                                     |
|         | = | HEC - Cells with bad HEC                                                                                             |
|         | = | INDROP - Number of incoming cells dropped                                                                            |
|         | = | IPRBADSUM - IP packets received with BAD checksum                                                                    |
|         | = | IPRBADHLEN - IP packets received with BAD header length                                                              |
|         | = | IPRBADIP - IP Packets received with BAD IP address                                                                   |
|         | = | IPRBADUDP - IP packets received with bad UDP port                                                                    |
|         | = | OUTDROP - Number of outgoing cells dropped                                                                           |
|         | = | UNRECCELLS - Unrecognized cells                                                                                      |
| thlev   | = | {0 . . . 4,294,967,295} - Threshold Level. If a monitored type exceeds this value, and REPT EVT VCCVOA will be sent. |
| locn    | = | <b>NEND</b> – Near-end is location of the storage registers or event counters to be initialized.                     |
| dirn    | = | <b>NA</b> – Direction is Not Applicable.                                                                             |
| tmper   | = | {1 . . . 24}-HR - Interval of one to 24 hours.                                                                       |
|         | = | {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.                                                       |

Command Example: SET-TH-VPVOIP:::::OUTDROP,800;

7. Do you want to set other performance monitoring parameter threshold levels?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

8. Retrieve the current threshold level of one or more monitored performance counts using the RTRV-TH-VPVOIP command. Refer to [Step 6](#) for parameter descriptions.

Command Syntax: RTRV-TH-VPVOIP:[TID]:<aid>:[CTAG]::  
[<montype>],[<locn>],[<tmper>];

Command Example: RTRV-TH-VPVOIP::COM;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<aid>:<montype>,[<locn>],<thlev>,[<tmper>]"
;
```

**Output Example:**

```
telica 2003-11-07 09:52:11
M 0 COMPLD
 "COM: AAL5CRCERR,NA,800,15-MIN"
 /* RTRV-TH-VCCVOIP */
;
```

9. Do you want to retrieve other threshold levels?

If **YES**, then go to [Step 8](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-666 - PROVISION GMSC REGISTERS AND RETRIEVE PM DATA

**SUMMARY:** This procedure provides steps to retrieve GMSC performance monitoring data, and initialize registers.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Are you going to be using EMS or TL1 to check PM data and/or initialize T1 registers?

If using **EMS**, then continue to the next step.

If using **TL1**, then go to [Step 8](#).

2. Select your task from the following and go to the indicated step.

- Retrieve GMSC PM data..... [Step 4](#)
- Reset GMSC registers ..... [Step 6](#)
- Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve current and historical performance data for T1 ports. Double-click *Switch* in the top pane, then right click the *Switch name* in the main pane. Select *View*, click the *PM Stats* tab at the top and then *GMSC* near the bottom. Click *Refresh* to update the data. See [Figure 1](#).

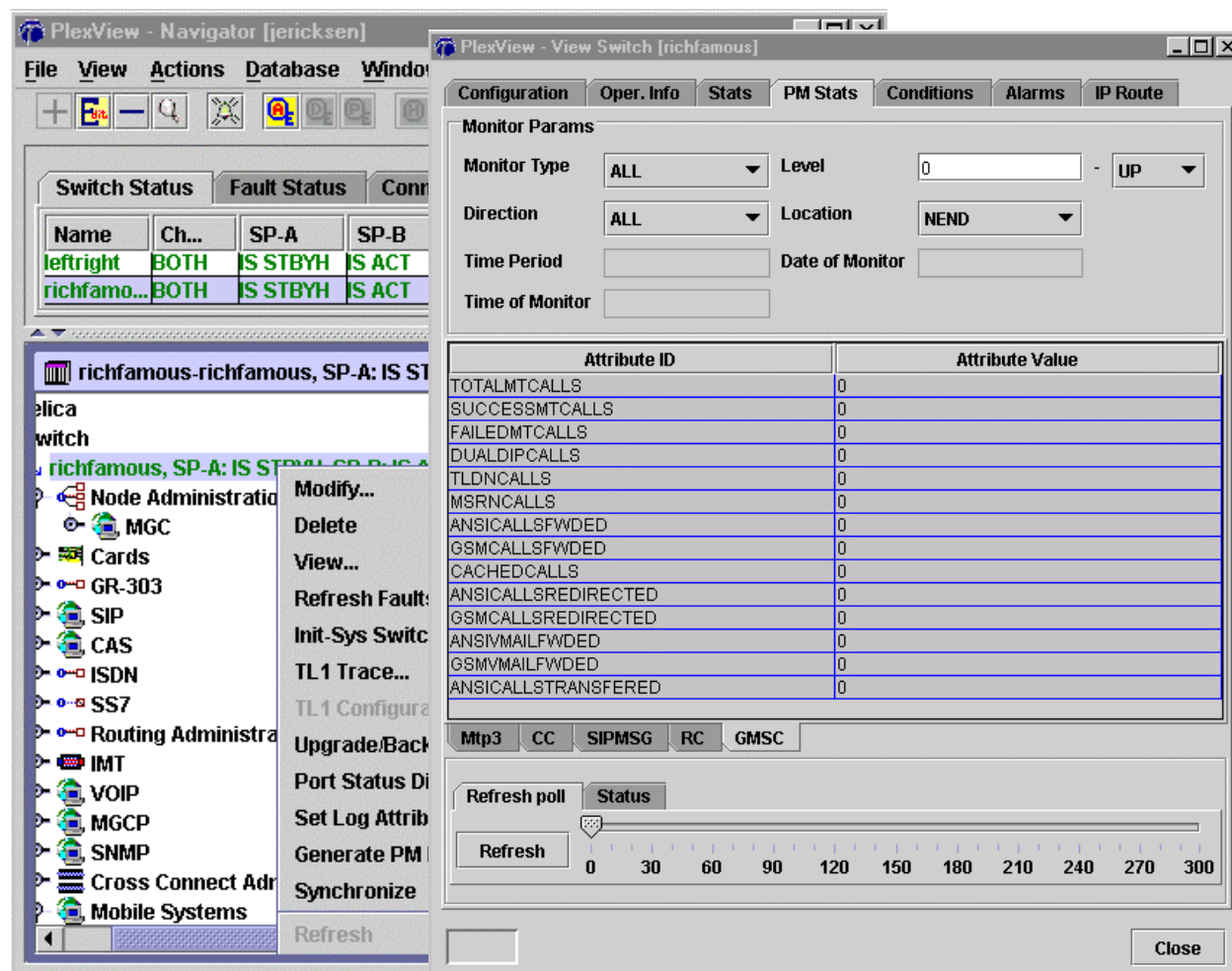


Figure 1. Performance Monitoring of GMSC

5. Do you want to initialize any register?  
 If YES, then continue to the next step.  
 If NO, then go to [Step 2](#).

6. Initialize by double-clicking *Switch* in the top pane if the switch is not displayed in the main pane. Right click the *Switch name* in the main pane, select *View*, click the *PM Stats* tab at the top and then *GMSC* near the bottom. Click Refresh to update the data.

To initialize a single register, right-click the register name and click *Init Register*.

To initialize a multiple registers, hold the Ctrl or Shift key and click the register name. Right-click to see the *Init Register* block and then click *Init Register*.

Make the required changes. See [Figure 2](#).

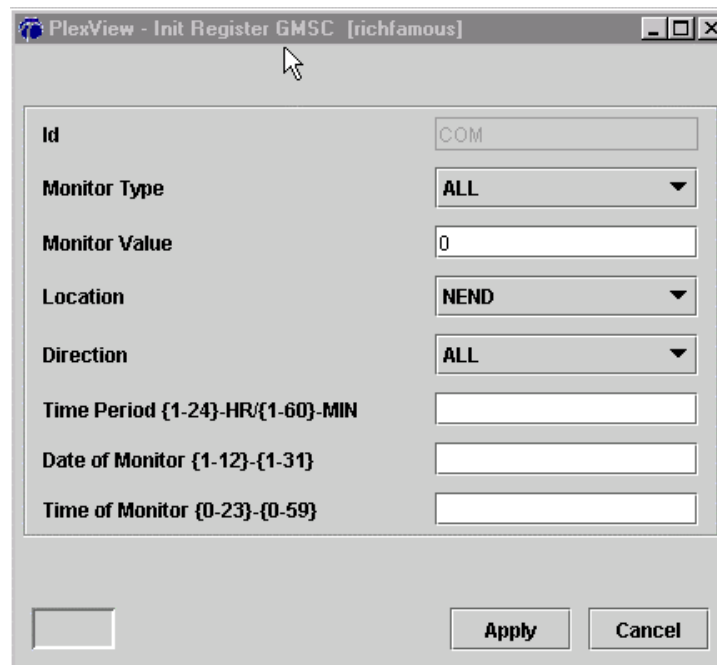


**Figure 2. Initialization of GMSC Registers**

7. Do you want to initialize other registers?  
If **YES**, then go to [Step 6](#)  
If **NO**, then go to [Step 2](#).
8. Select your task from the following and go to the indicated step.
  - Retrieve GMSC PM data..... [Step 10](#)
  - Reset GMSC registers ..... [Step 12](#)
  - Finished, no other task in the above list ..... continue to the next step.

9.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** Performance monitoring must be allowed. Reference DLP-561 to allow if necessary.

10. Retrieve the cumulative statistics for GMSC handled wireless calls using the RTRV-PM-GMSC command.

Command Syntax: RTRV-PM-GMSC:[TID]:[<src>]:[CTAG]::  
[<montype>],[<monlev>],[<locn>],  
[<dirn>],[<tmper>],[<mondatt>],  
[<montm>];

**Input Parameters:**

|         |                                                                                                                                                                                                                                                                                                                    |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| src     | = COM – Aid for the Plexus.                                                                                                                                                                                                                                                                                        |
| montype | Type of monitored parameter.<br>= ANSICALLSFWDDED<br>= ANSICALLSREDIRECTED<br>= ANSICALLSTRANSFERED<br>= ANSIVMAILFWDDED<br>= CACHEDCALLS<br>= DUALDIPCALLS<br>= FAILEDMTCALLS<br>= GSMCALLSFWDDED<br>= GSMCALLSREDIRECTED<br>= GSMVMAILFWDDED<br>= MSRNCALLS<br>= SUCCESSMTCALLS<br>= TLDNCALLS<br>= TOTALMTCALLS |
| monlev  | - Null. Currently not used.                                                                                                                                                                                                                                                                                        |
| locn    | = Null. Currently not used.                                                                                                                                                                                                                                                                                        |
| dirn    | = Null. Currently not used.                                                                                                                                                                                                                                                                                        |
| tmper   | = Null. Currently not used.                                                                                                                                                                                                                                                                                        |
| mondatt | = Null. Currently not used.                                                                                                                                                                                                                                                                                        |
| montm   | = Null. Currently not used.                                                                                                                                                                                                                                                                                        |

Command Example: RTRV-PM-GMSC;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<montype>,<monval>,[<vldty>],[<locn>],
 [<dirn>],[<tmper>],[<mondatt>],[<montm>]"
;
```

**Output Parameters:**

Refer to Input Parameters for all except the following.

monval = {1 . . . 9999} - Monitored value.



**Output Example:**

```
telica 2003-08-29 14:35:47
M 0 COMPLD
"COM:TOTALMTCALLS,134,,,,,"
"COM:SUCCESSMTCALLS,74,,,,,"
"COM:FAILEDDMTCALLS,46,,,,,"
"COM:DUALDIPCALLS,0,,,,,"
"COM:TLDNCALLS,67,,,,,"
"COM:MSRNCALLS,23,,,,,"
"COM:ANSICALLSFWDDED,22,,,,,"
"COM:GSMCALLSFWDDED,31,,,,,"
"COM:CACHEDCALLS,0,,,,,"
"COM:ANSICALLSREDIRECTED,0,,,,,"
"COM:GSMCALLSREDIRECTED,0,,,,,"
"COM:ANSIVMAILFWDDED,0,,,,,"
"COM:GSMVMAILFWDDED,0,,,,,"
"COM:ANSICALLSTRANSFERED,0,,,,,"
/* RTRV-PM-GMSC */
;
```

11. Do you want to retrieve PM data for another?

If **YES**, then go to [Step 10](#).

If **NO**, then go to [Step 8](#).

12. Reset the selected GMSC counters using the INIT-REG-GMSC command.

Command Syntax: INIT-REG-GMSC:[TID]:[<src>]:[CTAG]::  
[<montype>],[<monval>],[<locn>],  
[<dirn>],[<tmper>],[<mondatt>],  
[<montm>];

**Input Parameters:**

|         |                                |
|---------|--------------------------------|
| src     | = COM – Aid for the Plexus     |
| montype | = Type of monitored parameter. |
|         | = ALL                          |
|         | = ANSICALLSFWDDED              |
|         | = ANSICALLSREDIRECTED          |
|         | = ANSICALLSTRANSFERED          |
|         | = ANSIVMAILFWDDED              |
|         | = CACHEDCALLS                  |
|         | = DUALDIPCALLS                 |
|         | = FAILEDDMTCALLS               |
|         | = GSMCALLSFWDDED               |
|         | = GSMCALLSREDIRECTED           |
|         | = GSMVMAILFWDDED               |
|         | = MSRNCALLS                    |

|         |                             |
|---------|-----------------------------|
|         | = SUCCESSMTCALLS            |
|         | = TLDNCALLS                 |
|         | = TOTALMTCALLS              |
| monval  | = Null. Currently not used. |
| locn    | = Null. Currently not used. |
| dirn    | = Null. Currently not used. |
| tmper   | = Null. Currently not used. |
| mondatt | = Null. Currently not used. |
| montm   | = Null. Currently not used. |

Command Example: INIT-REG-GMSC;

**13.** Do you want to initialize other registers?

If **YES**, then go to [Step 12](#)

If **NO**, then go to [Step 8](#).

## DLP-667 - REPLACE A NETWORK ACCESS OR VOICE SERVER IOM

**SUMMARY:** This procedure provides steps to remove and replace a faulted ATM Network Access (ANA), Packet Network Access (PNA), Ethernet Network Access (ENA) or Voice Server (VS) module. You will be directed to call Telica Technical Services at 888-440-8354 or 888-440-TELI to find out if you can update the IOM software using the CPY-MEM command or if Technical Services must assist you in performing upgrade.

If you will be using the Element Management System (EMS), you should have knowledge of using the EMS. This procedure assumes you are already logged into EMS.

If you will be using TL1, you should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.



**DANGER:** *Circuit cards can be damaged by electrostatic discharge. An anti-static wrist strap should be worn at all times when you are handling circuit cards. A wrist strap and cord were included in Accessory Kit box that was shipped with the chassis.*



**Caution:** *If a rear IOM is disconnected or removed from the midplane, it must be replaced or reconnected and then the front IOM must be disconnected from the midplane and then reconnected. If this is not done in this sequence, the IOM will not be rebooted.*



**Note:** If using the Element Management System (EMS), some screens may differ from those illustrated depending upon software version of the switch.

1. Familiarize yourself with the installation and removal of circuit cards.

Reference: **DLP-514**

2. If you are not logged into the Plexus, connect a craft terminal or telnet to the Plexus 9000 and log in or use EMS.

Reference: **DLP-516** – Connect the Plexus 9000 to a Craft Terminal

Reference: **DLP-504** - Establish a Telnet Session

3. Look at the Plexus and identify which modules have FLT LEDs illuminated.
4. Is the faulted IOM a protected IOM?  
  
If **YES**, then continue to the next step.  
If **NO**, the IOM is not protected, then go to [Step 8](#).
5. Compare the part numbers (next to upper ejector handle) of the protection module for the IOM that is faulted and the module that will be used for replacement. Is the part number of the **protection** module equal to or greater than the part number of the replacement module?  
  
If **YES**, then go to [Step 8](#).  
If **NO**, then continue to the next step.
6. The part number of the protection module must be equal to or greater than the part number of the replacement module. You have determined that the replacement part number is greater than the part number of the protection module. You must locate a replacement module that is equal or less than the part number of the installed IOM before continuing.
7.  **YOU HAVE COMPLETED THIS PROCEDURE.**
8. Select your task from the following and go to the indicated step.
  - Replace a faulted ANA, PNA or front ENA module ..... [Step 10](#)
  - Replace a faulted rear ENA module..... [Step 29](#)
  - Replace a faulted voice server (VS) module ..... [Step 41](#)
  - There are FLT LEDs on other IOMs, then go to..... **DLP-535**
  - Finished, no other task in the above list ..... continue to the next step.
9.  **YOU HAVE COMPLETED THIS PROCEDURE.**



**Note:** The following steps will replace an ATM Network Access (ANA), Packet Network Access (PNA) or Ethernet Network Access (ENA)

10. Remove the faulted IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 12](#).

Command Syntax: RMV-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RMV-EQPT::IOM-8;**

11. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select Yes to remove the module. See [Figure 1](#).

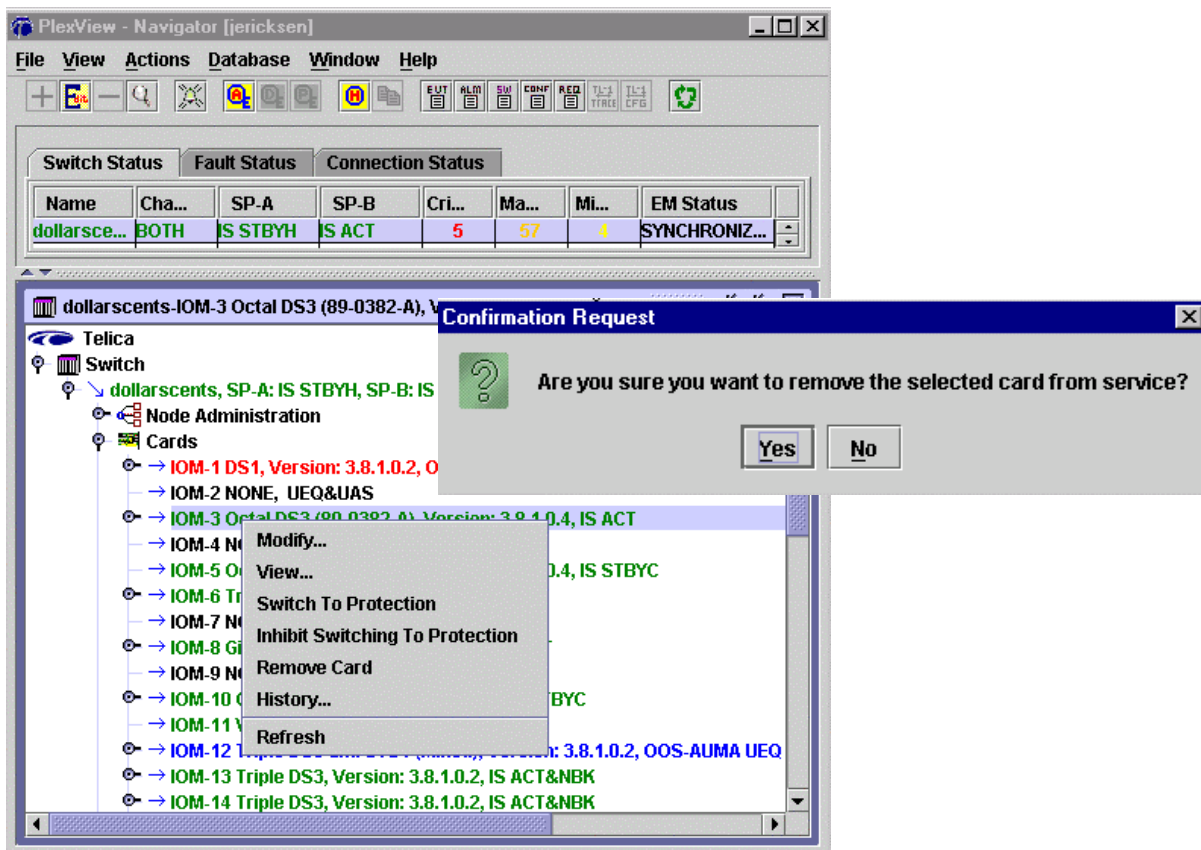


**Figure 1. Removing a Module**

12. Are you replacing a PNA, ANA or a front ENA module?

If **PNA or ANA**, then disconnect the fiber optic cables from the front of the faulted module.

If **ENA**, then continue to the next step.

13. Loosen the top and bottom screws and using the ejector handles, remove the faulted module.
14. Install the replacement ATM Network Access module (89-0388) or Packet Network Access Module (89-0393) and tighten screws.

Comment: The IOM will enter its power-up and initialization routines. This will take several minutes. If the replacement IOM has the same software revision level, the protection IOM will switch back to the working IOM.

15. Did you replace a PNA, ANA or ENA module?

If a **PNA or ANA**, then reconnect the fiber optic cables to the front of the replaced module.

If an **ENA**, then continue to the next step.

16. Wait for the module to complete initialization. This can take several minutes.
17. Retrieve information about the IOM and note the CLEI and software version.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-INFO-EQPT command and go to [Step 19](#).

Command Example: **RTRV-INFO-EQPT::IOM-8;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,
<portCount>,<externalFaults>,<internalFaults>,
<inService>:<memFree>,<memUsed>,<nvMemFree>,
<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],
[<rearHwVersion>],[<rearSerialNumber>],[<prtg>"
;
```

Comment: The *prtg* parameter is not available in all software versions.

18. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Oper. Info*. Note the CLEI and software version. Refer to [Figure 2](#).
19. Retrieve provisioned information about the IOM and note CLEI and software version.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RTRV-EQPT command and go to [Step 21](#).

Command Example: **RTRV-EQPT::IOM-3;**

20. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and *Configuration*. Note the CLEI and software version. Refer to [Figure 3](#).

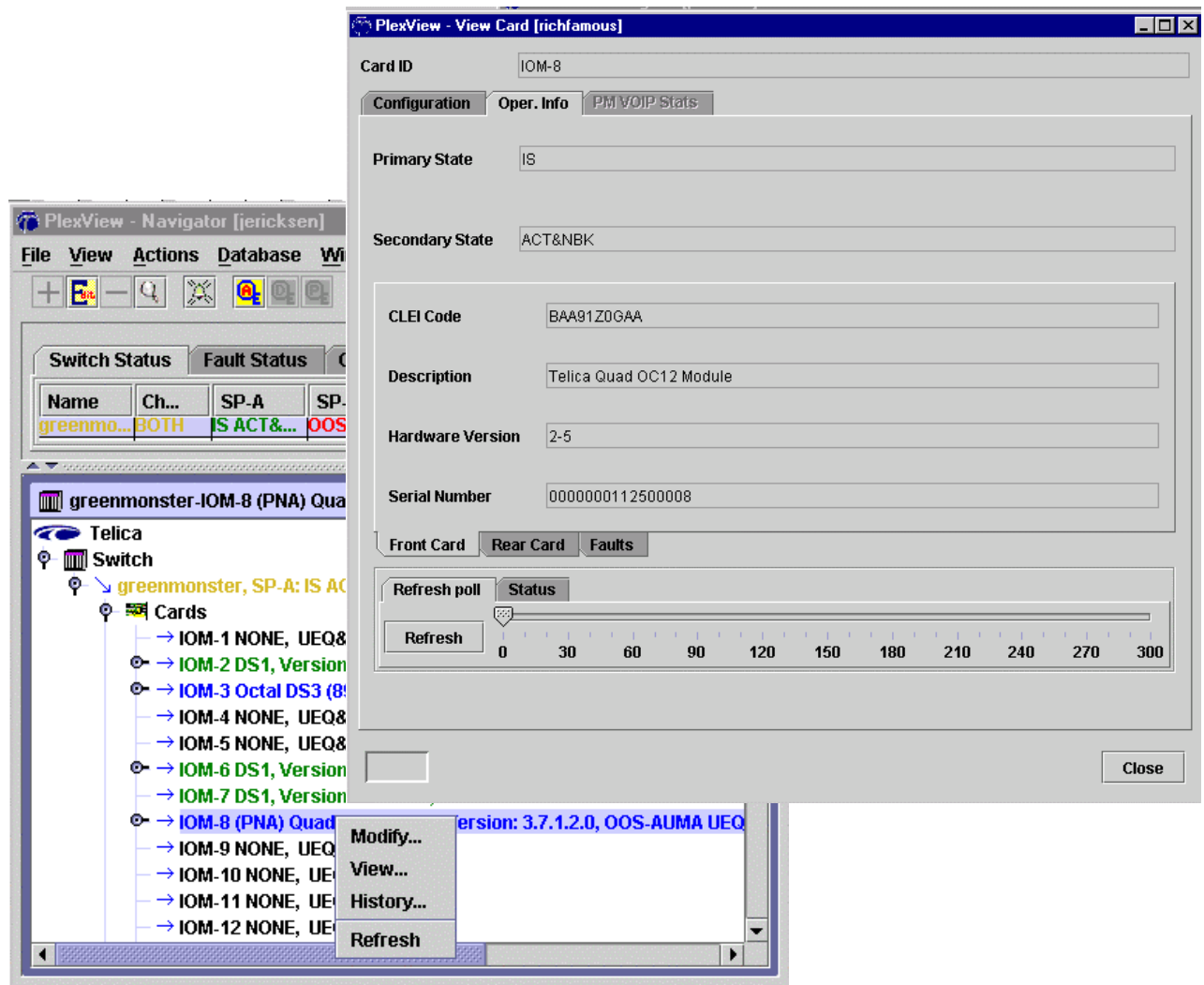


Figure 2. Operational Information

21. Are the CLEI and/or software versions different?

If they are the **same**, then go to [Step 24](#).

If **only** CLEI codes are different, then continue to the next step

If the **software version** or **software version and CLEI codes** are different, then go to **DLP-621** to correct before continuing to [Step 24](#).

22. Change the provisioned CLEI to the module CLEI using the ED-EQPT command.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the ED-EQPT command and go to [Step 24](#)

Command Syntax: ED-EQPT::IOM-{1. . . 17}:[CTAG]::  
IOMODULETYPE=<ioModuleType>;

Command Example: ED-EQPT::IOM-1:::  
IOMODULETYPE=BA9IX70AAB;

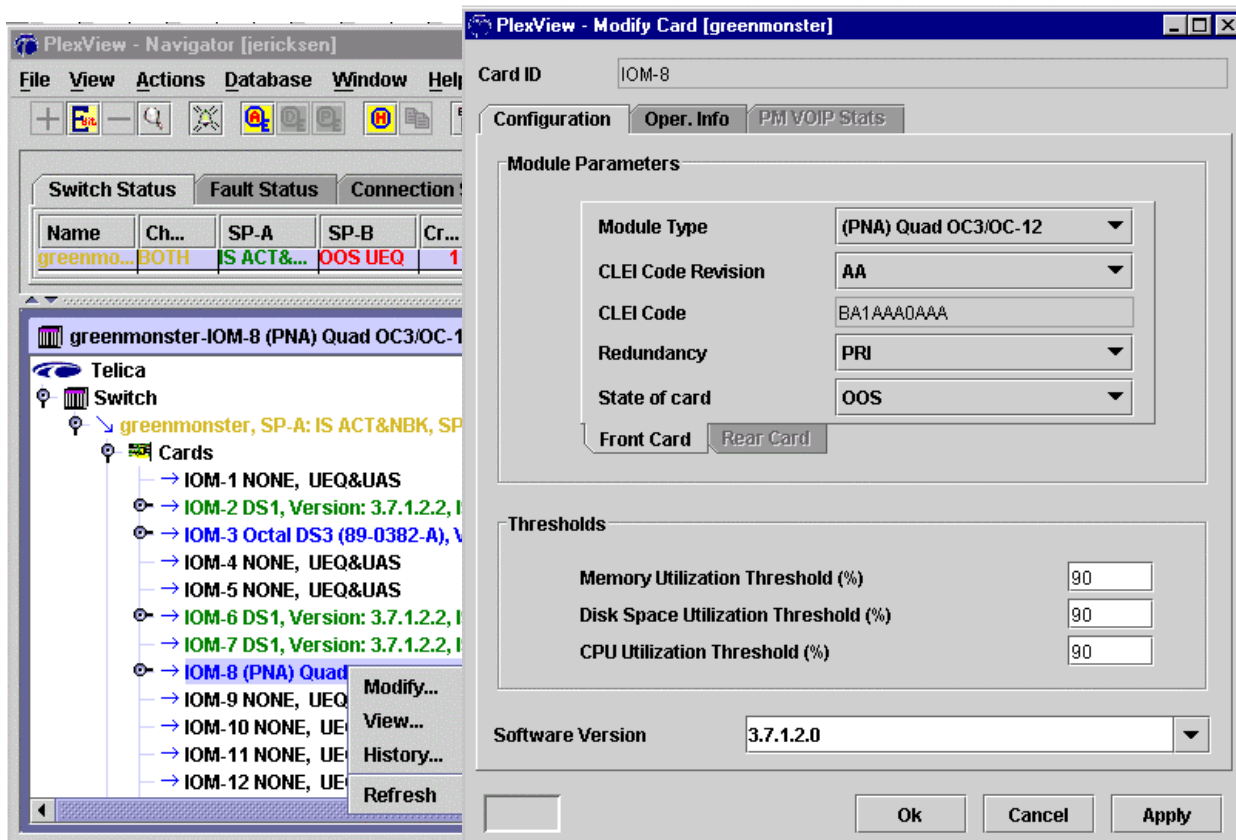


Figure 3. Configuration

23. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Modify*. Change the CLEI and then select *Ok* or *Apply*. Refer to [Figure 3](#).
24. Check status of the module.

If using **EMS**, then retrieve IOM information. Refer to [Step 20](#) and [Figure 3](#).

If using **TL1**, then execute the using the RTRV-EQPT command.



25. Restore the replaced IOM to service if it has not restored to service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RST-EQPT command and go to [Step 27](#).

Command Syntax: RST-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RST-EQPT::IOM-1;**

26. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module.

27. Check status of card using the RTRV-EQPT command.

If using **EMS**, then refer to [Step 20](#) and [Figure 3](#).

If using **TL1**, then execute the RTRV-EQPT command

Command Syntax: RTRV-EQPT:[TID]:[<src>]:[CTAG];

Command Example: **RTRV-EQPT;**

28. Is the module still faulted?

If **YES**, then go to [Step 59](#).

If **NO**, then go to [Step 58](#).



**Caution:** Replacing a rear ENA IOM will disrupt traffic if the ENA is not protected.



**Caution:** If a rear IOM is disconnected or removed from the midplane, it must be replaced or reconnected and then the front IOM must be disconnected from the midplane and then reconnected. If this is not done in this sequence, the IOM will not be rebooted.



**Note:** The following steps will replace a rear ENA IOM.

29. Remove the faulted IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RMV-EQPT command and go to [Step 31](#).

Command Syntax: RMV-EQPT:[TID]:<equipmentId>:[CTAG];

Command Example: **RMV-EQPT::IOM-8;**

30. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. See [Figure 1](#).

31. Disconnect the Ethernet cables (fiber optic or the RJ-45) from the faulted rear module.
32. Loosen the top and bottom screws and using the ejector handles, remove the faulted rear IOM.
33. Install the replacement rear IOM and tighten screws. Refer to [Table B](#) for part numbers and CLEI codes.
34. Reconnect the Ethernet cables (fiber optic or the RJ-45) to the replaced rear module.
35. Loosen screws and disconnect the corresponding **front** IOM module from the midplane, reseal it, tighten screws.
36. Wait for the card to initialize. This can take several minutes.
37. Check status of card using the RTRV-EQPT command.

If using **EMS**, then refer to [Step 17](#) and [Figure 2](#).

If using **TL1**, then execute the RTRV-EQPT command

Command Syntax: RTRV-EQPT : [TID] : [<src>] : [CTAG] ;

Command Example: **RTRV-EQPT ;**

38. Restore the replaced IOM to service if it has not restored to service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the RST-EQPT command.

Command Syntax: RST-EQPT : [TID] : <equipmentId> : [CTAG] ;

Command Example: **RST-EQPT : : IOM-8 ;**

39. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module. See [Figure 1](#).
40. Is there still a FLT LED illuminated on the front module of the corresponding rear module that you replaced?
  - If **YES**, then go to [Step 59](#).
  - If **NO**, then go to [Step 58](#).



**Note:** The following steps will replace a Voice Server Module.

41. Remove the faulted IOM from service.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the **RMV-EQPT** command and go to [Step 12](#).

Command Syntax: **RMV-EQPT:[TID]:<equipmentId>:[CTAG];**

Command Example: **RMV-EQPT::IOM-15;**

42. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Remove Card*. A confirmation screen will appear. Select *Yes* to remove the module. See [Figure 1](#).

43. Loosen the top and bottom screws and using the ejector handles, remove the faulted module.

44. Install the replacement module and tighten screws.

Comment: The IOM will enter its power-up and initialization routines. This will take several minutes. If the replacement IOM has the same software revision level, the protection IOM will switch back to the working IOM.

45. Wait for the module to complete initialization. This can take several minutes.

46. Retrieve information about the IOM and note the CLEI and software version.

If using **EMS**, then continue to the next step.

If using **TL1**, then execute the **RTRV-INFO-EQPT** command and go to [Step 48](#).

Command Example: **RTRV-INFO-EQPT::IOM-15;**

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<src>:<clei>,<desc>,<swVersion>,<hwVersion>,
<serialNumber>,<selfTestStatus>,<portType>,
<portCount>,<externalFaults>,<internalFaults>,
<inService>:<memFree>,<memUsed>,<nvMemFree>,
<nvMemUsed>,<spAveBusy>:[<rearClei>],[<rearDesc>],
[<rearHwVersion>],[<rearSerialNumber>],[<prtg>"
;
```

Comment: The *prtg* parameter is not available in all software versions.

47. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and then *Oper. Info*. Note the CLEI and software version. Refer to [Figure 2](#).

48. Retrieve provisioned information about the IOM and note CLEI and software version.  
  
If using **EMS**, then continue to the next step.  
If using **TL1**, then execute the RTRV-EQPT command and go to [Step 50](#).  
  
Command Example: **RTRV-EQPT::IOM-3;**
49. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *View* and *Configuration*. Note the CLEI and software version. Refer to [Figure 3](#).
50. Are the CLEI and/or software versions different?  
  
If they are the **same**, then go to [Step 53](#)  
If **only** CLEI codes are different, then continue to the next step  
If the **software version** or **software version and CLEI codes** are different, then go to **DLP-621** to correct before continuing to [Step 53](#).
51. Change the provisioned CLEI to the module CLEI using the ED-EQPT command.  
  
If using **EMS**, then continue to the next step.  
If using **TL1**, then execute the ED-EQPT command and go to [Step 53](#).  
  
Command Syntax: ED-EQPT::IOM-{1. . . 17}: [CTAG]::  
IOMODULETYPE=<ioModuleType>;  
  
Command Example: ED-EQPT::IOM-1:::  
IOMODULETYPE=BA9IX70AAB;
52. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Modify*. Change the CLEI and then select *Ok* or *Apply*. Refer to [Figure 3](#).
53. Check status of the module.  
  
If using **EMS**, then retrieve IOM information. Refer to [Step 20](#) and [Figure 3](#).  
If using **TL1**, then execute the using the RTRV-EQPT command.
54. Restore the replaced IOM to service if it has not restored to service.  
  
If using **EMS**, then continue to the next step.  
If using **TL1**, then execute the RST-EQPT command and go to [Step 56](#).  
  
Command Syntax: RST-EQPT: [TID]: <equipmentId>: [CTAG];  
  
Command Example: **RST-EQPT::IOM-15;**
55. Double-click the switch to select it for the main panel and then double-click *Cards*. Right-click the desired IOM and then select *Restore Card*. A confirmation screen will appear. Select *Yes* to restore the module.

56. Check status of card using the RTRV-EQPT command.

If using **EMS**, then refer to [Step 20](#) and [Figure 3](#).

If using **TL1**, then execute the RTRV-EQPT command

Command Syntax: RTRV-EQPT : [TID] : [<src>] : [CTAG] ;

Command Example: **RTRV-EQPT ;**

57. Is the module still faulted?

If **YES**, then go to [Step 59](#).

If **NO**, then go to [Step 58](#).

58. Are there other IOMs with FLT LEDs illuminated?

If **YES**, then go to [Step 8](#).

If **NO**, then continue to next step

59. Call Telica Technical Services at 888-440-8354 or 888-440-TELI.

60.  **YOU HAVE COMPLETED THIS PROCEDURE.**

**Table A. CLEI CODES OF FRONT MODULES**

| <b>Part Number</b> | <b>Name</b>                                    | <b>CLEI Code</b> |
|--------------------|------------------------------------------------|------------------|
| 89-0360-A          | DS1 Front Module                               | BA9IAA0AAA       |
| 89-0363-A          | Switch Fabric Front Module                     | BAC7W30JAA       |
| 89-0363-B          |                                                | BAC7W3UJAA       |
| 89-0363-C          |                                                | BAC7W3YJAA       |
| 89-0363-D          |                                                | BAC7W3YJAB       |
| 89-0365-A          | DS3 Front Module                               | BA9IX70AAA       |
| 89-0365-B          | (See Note 3.)                                  | BA9IX70AAB       |
| 89-0365-C          | DS3 Front Module with STS<br>(See Note 3.)     | BA9IX72AAA       |
| 89-0366-A          | SP/TMG Front Module                            | BAC7X40JAA       |
| 89-0366-B          |                                                | BAC7X40JAB       |
| 89-0382-A          | Octal DS3/STS-1 Front Module<br>(See Note 2.)  | BAA9UV0GAA       |
| 89-0382-B          |                                                | BAA9UVZGAA       |
| 89-0384-A          | Voice Server                                   | BAA9Z20GAA       |
| 89-0388-A          | ATM Network Access (OC-12)                     | BAA91Z0GAA       |
| 89-0388-B          | ANA (OC-3/12/STM-1/4)                          | BAA91Z0GAB       |
| 89-0388-C          |                                                | BAA91Z0GAC       |
| 89-0389-A          | Dual SP/TMG 2 Front Module                     | BAC9CD0AAA       |
| 89-0389-B          |                                                | BAC9CD0AAB       |
| 89-0390-A          | 10/100/1000 Ethernet Network<br>Access Module  | BA2A30TGAA       |
| 89-0393-A          | Packet Network Access                          | BA1AAA0AAA       |
| 89-0393-B          |                                                | BA1AAA0AAB       |
| 89-0395-A          | 2688 Channel Voice Server                      | BA1AX60AAA       |
| 89-0395-B          |                                                | BA1AX60AAB       |
| 89-0397-A          | Triple DS3/STS-1 Front<br>Module (See Note 3.) | BA9IX04AAA       |
| 89-0398-A          | Octal DS3/STS-1 Front Module                   | BA9UVXGAA        |
| 89-0400-A          | Channelized Network Access<br>Module           | BA4AW60FAA       |
| 89-0406-A          | SP/TMG 3 Front Module                          | BA1CUV0HAA       |
| 89-0409-A          | Octal DS3 ATM Network<br>Access                | BA5AAE0CAA       |
| 89-0410-A          | Triple DS3/STS-1 with Tone<br>Detect           | BA4A60ZFAA       |
| 89-0411-A          | Octal DS3/STS-1 with Tone<br>Detect            | BA4A701FAA       |
| 89-0414-A          | DS1/J1/E1 Front Module                         | BA7ATP0FAA       |

| Part Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Name | CLEI Code |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| <p><b>Note 1:</b> Usage of some modules is determined by the version of the system software, the chassis (i.e., 85-3004/3007), or the application (i.e., VoIP and VToA).</p> <p><b>Note 2:</b> If the primary Octal DS3 front module is revision B, then the front protection module MUST be revision B. If the primary Octal DS3 front module is revision A, then the front protection module can be revision A or B.</p> <p><b>Note 3:</b> After a transition period, rear triple DS3 modules will be replaced with rear octal DS3 modules but only three ports will be used.</p> |      |           |
| T38-D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |           |

**Table B. CLEI CODES of REAR MODULES**

| Part Number | Name                                              | CLEI Code   |
|-------------|---------------------------------------------------|-------------|
| 89-0361-A   | Triple DS3/STS-1 Rear Module<br>(See Note 3.)     | BA9IB80AAA  |
| 89-0362-A   | DS1 Rear Module                                   | BA9IBC0AAA  |
| 89-0362-B   |                                                   | BA9IBC0AAB  |
| 89-0364-A   | Switch Fabric A Rear Module                       | BAC7Z30JAA  |
| 89-0367-A   | SP/TMG Rear Module                                | BAC7Y50JAA  |
| 89-0367-B   |                                                   | BAC7Y50JAB  |
| 89-0367-C   |                                                   | BAC7Y50JAC  |
| 89-0368-A   | DS1 Rear Protection Module                        | BA9IBB0AAA  |
| 89-0369-A   | DS3/STS-1 Rear Protection<br>Module (See Note 3.) | BA9IB90AAA  |
| 89-0375-A   | Switch Fabric B Rear<br>Protection Module         | BAC7160JAA  |
| 89-0383-A   | Octal DS3/STS-1 Rear Module                       | BAA9TW0GAA  |
| 89-0386-A   | Octal DS3/STS-1 Rear<br>Protection Module         | BAA9TU0GAA  |
| 89-0391-A   | Quad 1000 Ethernet Network<br>Access Module       | BA2A20SGAA  |
| 89-0399-A   | Quad 1000BASE-SX SM<br>GBIC Rear I/O              | BAA9TZYGAA  |
| 89-0399-B   |                                                   | BAA9TZYGAB  |
| 89-0401-A   | Channelized Network Access<br>OC-12 Rear Module   | BA4A40VF AA |
| 89-0402-A   | Channelized Network Access<br>OC-3 Rear Module    | BA4A50VF AA |

| <b>Part Number</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Name</b>                                   | <b>CLEI Code</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------|
| 89-0361-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Triple DS3/STS-1 Rear Module<br>(See Note 3.) | BA9IB80AAA       |
| 89-0407-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SP/TMG 3 Rear Module with<br>A-Links          | BA1CVW0HAA       |
| 89-0415-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DS1/J1/E1 Rear Module                         | BA7A1P0FAA       |
| 89-0416-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | DS1/J1/E1 A-Link Rear<br>Module               | BA7A1X0FAA       |
| 89-0417-A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SP/TMG 3 Rear Module                          | BA1C1W0HAA       |
| 89-0421                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Rear Quad 1000BASE-SX MM<br>GBIC ENET IOM     | To be supplied   |
| <p><b>Note 1:</b> Usage of some modules is determined by the version of the system software, the chassis (i.e., 85-3004), or the application (i.e., VoIP and VToA).</p> <p><b>Note 2:</b> Octal DS3 modules cannot be installed in the original 85-3000 chassis. If using DS3 modules in the 85-3004/3007 chassis, the rear protection Module must be an Octal protection Module regardless of the DS3's primary module type.</p> <p><b>Note 3:</b> After a transition period, rear triple DS3 modules will be replaced with rear octal DS3 modules but only three ports will be used.</p> |                                               |                  |
| T39-D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |                  |



## DLP-670 - RETRIEVE PM DATA AND INITIALIZE REGISTERS FOR VOICE MAIL SYSTEM

**SUMMARY:** This procedure provides steps to retrieve the performance monitoring data and initialize register for a Voice Mail System (VMS).

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. The following information is required in order to complete this procedure:
  - SMDI (Simplified Message Desk Interface) data link
2. Select your task from the following and go to the indicated step.
  - Retrieve PM data of a VMS link..... [Step 4](#)
  - Initialize registers for a VMS link..... [Step 6](#)
  - Finished, no other task in the above list..... continue to the next step.

3.  **YOU HAVE COMPLETED THIS PROCEDURE.**

4. Retrieve current and historical performance data gathered for a for a voice mail system using the RTRV-PM-VMSLNK command.

Command Syntax: RTRV-PM-VMSLNK:[TID]:<smdiLnkId>:  
[CTAG]::[<montype>],[<monlev>],[<locn>],  
[<dirn>],[<tmper>],[<mondatt>],[<montm>];

**Input Parameters:**

smdiLnkId = {1 . . . 8} – SMDI data link between a generic Message Storage and Retrieval (MSR) system in a VMS and the Plexus 9000

montype = **ALL** - All statistics counters.  
= CALLHSTMSGTX - Number of call history messages sent to the VMS.  
= CALLHSTBYTETX - Number of call history bytes sent to the VMS.  
= CALLHSTMSGDSC - the number of discarded call history messages.

|         |                                                                                                                 |
|---------|-----------------------------------------------------------------------------------------------------------------|
|         | = MWIBLKMSGTX - Number of BLK messages sent to the VMS.                                                         |
|         | = MWIBLKBYTETX - Number of BLK bytes sent to the VMS.                                                           |
|         | = MWIINVMSGTX - Number of INV messages sent to the VMS.                                                         |
|         | = MWIINVBYTETX - Number of INV bytes sent to the VMS.                                                           |
|         | = MWIVLDMSGRX - Number of valid MWI messages.                                                                   |
|         | = MWIVLDBYTERX - Number of valid MWI message bytes received from the VMS.                                       |
|         | = MSGDSCOVFLW - Number of incoming messages dropped due to overflow.                                            |
|         | = INVMSGRX - Number of invalid messages received from the VMS.                                                  |
|         | = MAXQBYTERX - Maximum number of bytes in the incoming message queue.                                           |
|         | = MAXQBYTETX - Maximum number of bytes in the outgoing message queue                                            |
|         | = MAXQMSGRX - Maximum number of messages in the incoming message queue.                                         |
|         | = MAXQMSGTX - Timeouts: the maximum number of messages in the outgoing message queue.                           |
| monval  | = {0 . . . 9999} – Monitored value. Not currently supported.                                                    |
| monlev  | = {1 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                         |
| vldty   | = ADJ - Data manually adjusted or initialized                                                                   |
|         | = COMPL - Data accumulated over the entire time period                                                          |
|         | = LONG - Data accumulated over greater than the entire time period                                              |
|         | = NA - Data not available                                                                                       |
|         | = PRTL - Data accumulated over a portion of the time period                                                     |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                            |
| dirn    | = <b>BTH</b> – Both directions                                                                                  |
|         | = RCV – Receive direction                                                                                       |
|         | = TRMT – Transmit direction                                                                                     |
| tmper   | = {1}- Day – Interval of one day                                                                                |
|         | = {1 . . . 24}-HR - Interval of one to 24 hours.                                                                |
|         | = {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.                                                |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank. |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank. |

Command Example: RTRV-PM-VMSLNK : : 4 ;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<smdiLnkId>:<montype>,<monval>,<vldty>,<locn>,<dirn>,<tmper>,<mondatt>,<montm>"
;
```

**Output Example:**

```
telica 2002-11-07 16:00:34
M 0 COMPLD
 "4:CALLHSTMSGTX,998"
 "4:CALLHSTBYTETX,12756"
 /* RTRV-PM-VMSLNK */
;
```

5. Do you want to retrieve PM data of another VMS link?

If **YES**, then go to [Step 4](#).

If **NO**, then go to [Step 2](#).

6. Initialize VMS link registers using the INIT-REG-VMSLNK command.

Command Syntax: INIT-REG-VMSLNK:[TID]:<smdiLnkId>:  
[CTAG]::<montype>,<monval>,<vldty>,<locn>,<dirn>,<tmper>,<mondatt>,<montm>;

Refer to [Step 4](#) for parameter descriptions.

Command Example: INIT-REG-VMSLNK::1;

7. Do you want to initialize another VMS link or other parameters?

If **YES**, then go to [Step 6](#).

If **NO**, then go to [Step 2](#).

**NOTES:**

## DLP-671 - RETRIEVE PM DATA AND INITIALIZE REGISTERS FOR RELEASE CAUSES

**SUMMARY:** This procedure provides steps to retrieve the performance monitoring data and initialize register for release causes (RC).

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. Select your task from the following and go to the indicated step.

- Retrieve PM data of a VMS link..... [Step 3](#)
- Initialize registers for a VMS link..... [Step 5](#)
- Finished, no other task in the above list..... continue to the next step.

2.  **YOU HAVE COMPLETED THIS PROCEDURE.**

3. Retrieve the number of times release cause types have been transmitted or received since the counters were last initialized using the RTRV-PM-RC command.

Command Syntax: RTRV-PM-RC: [TID]: [<com>]: [CTAG]: :  
[<montype>], [<monlev>], [<locn>], [<dirn>],  
[<tmper>], [<mondatt>], [<montm>];

**Input Parameters:**

|         |                                                       |
|---------|-------------------------------------------------------|
| com     | = Aid for Plexus                                      |
| montype | = ALL - All release causes                            |
|         | = BCAPNOTAUTH - Bearer Capability Not Authorized      |
|         | = BCAPNOTIMPL - Bearer Capability Not Implemented     |
|         | = BCAPUNAVAIL - Bearer Capability Not Available       |
|         | = CALLREJ - Call Rejected                             |
|         | = CHATYPNOTIMPL - Channel Type Not Implemented        |
|         | = DESTNOTCOMP - Destination Not Compatible            |
|         | = DESTOUTORD - Destination Out of Order               |
|         | = INFOELNOTIMPL - Information Element Not Implemented |
|         | = INVCALLREF - Invalid Call Reference                 |
|         | = INVCAUSEVAL - Invalid Cause Value (proprietary)     |
|         | = INVINFOELEM - Invalid Information Element           |

|         |                                                                                                                 |
|---------|-----------------------------------------------------------------------------------------------------------------|
|         | = INVMSG - Invalid Message, unspecified                                                                         |
|         | = INVNMBFORM - Invalid Number Format                                                                            |
|         | = IVRCASE - Interactive Voice Response case                                                                     |
|         | = MSGTYPNOTIMPL - Message Type Not Implemented                                                                  |
|         | = NETOUTORD - Network Out of Order                                                                              |
|         | = NMBCHANGED - Number Changed                                                                                   |
|         | = NOCKTAVAIL - No Circuit Available                                                                             |
|         | = NOROUTDEST - No Route to Destination                                                                          |
|         | = NOROUTTRANSNET - No Route to Transit Network                                                                  |
|         | = NORRELEASE - Normal Release                                                                                   |
|         | = NOUSERRESP - No User Response                                                                                 |
|         | = NRMLUNSPEC - Normal Unspecified                                                                               |
|         | = ONLYRDIGBCAVL - Only Restricted Digital Information Bearer Capability Available                               |
|         | = OPTELEMERR - Optional Information Element Content Error (non-std)                                             |
|         | = PROTOCOLERR - Protocol Error, unspecified                                                                     |
|         | = PRXONEERR - Prefix "1" Dialed Erroneously                                                                     |
|         | = PRXONENOTDLD - Prefix "1" Not Dialed                                                                          |
|         | = PRXZEROERR - Prefix "0" Dialed Erroneously                                                                    |
|         | = RESUNAVAIL - Resources Unavailable, unspecified                                                               |
|         | = SNDSITTONE - Send SIT Tone                                                                                    |
|         | = SRVUNAVAIL - Service or option Unavailable                                                                    |
|         | = SWTCHCONGN - Switch Congestion                                                                                |
|         | = TMPFAIL - Temporary Failure                                                                                   |
|         | = UNALLOCNMB - Unallocated (unassigned) Number                                                                  |
|         | = USERBUSY - User Busy                                                                                          |
|         | = VACANTCODE - Vacant Code                                                                                      |
| monval  | = {0 . . . 2147483647} – Monitored value. Not currently supported.                                              |
| monlev  | = {1 . . . 255}-{UP DOWN} - Level of the requested monitored parameter.                                         |
| vldty   | = ADJ - Data manually adjusted or initialized                                                                   |
|         | = COMPL - Data accumulated over the entire time period                                                          |
|         | = LONG - Data accumulated over greater than the entire time period                                              |
|         | = NA - Data not available                                                                                       |
|         | = PRTL - Data accumulated over a portion of the time period                                                     |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                            |
|         | = FEND - Far end counters to be initialized                                                                     |
| dirn    | = <b>BTH</b> – Both directions                                                                                  |
|         | = RCV – Receive direction                                                                                       |
|         | = TRMT – Transmit direction                                                                                     |
| tmper   | = {1}- Day – Interval of one day                                                                                |
|         | = {1 . . . 24}-HR - Interval of one to 24 hours.                                                                |
|         | = {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.                                                |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank. |

montm           = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank.

Command Example: RTRV-PM-RC;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<com>:<montype>,<monval>,[<vldty>],[<locn>],
 [<dirn>],[<tmper>],[<mondatt>],[<montm>]"
;
```

**Output Example:**

```
telica 2004-05-21 16:00:34
M 0 COMPLD
 "COM:ALL,0"
 "COM:ALL,0"
 "COM:NOROUTTRANSNET,0"
 "COM:ALL,0"
 "COM:ALL,0"
 "COM:ALL,0"
 "COM:ALL,288270624"
 "COM:ALL,0"
 "COM:NMBCHNG,0"
 "COM:DSTOUTORD,0"
 "COM:INVNMBFORM,558586640"
 "COM:ALL,569203644"
 "COM:ALL,1495"
 "COM:ALL,2080074044"
 "COM:ALL,569203644"
 "COM:ALL,0"
 "COM:ALL,0"
 "COM:NOROUTDST,537909980"
 "COM:ALL,537814212"
 "COM:ALL,2080074076"
 "COM:ALL,2080074172"
 "COM:ALL,286402024"
 "COM:ALL,0"
 "COM:ALL,0"
 "COM:ALL,0"
 "COM:ALL,567284920"
 "COM:ALL,558761360"
 "COM:ALL,567284940"
 /* RTRV-PM-RC */
;
```

4. Do you want to retrieve PM data of another release cause?

If **YES**, then go to [Step 3](#).

If **NO**, then go to [Step 1](#).

5. Initialize release cause registers using the INIT-REG-RC command.

Command Syntax:   INIT-REG-RC:[TID]:[<com>]:[CTAG]::  
                          [<montype>],[<monval>],[<locn>],  
                          [<dirn>],[<tmper>],[<mondatt>],  
                          [<montm>];

Refer to [Step 3](#) for parameter descriptions.

Command Example:   INIT-REG-RC;

6. Do you want to initialize another release cause register or other parameters?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 1](#).



## DLP-672 - RETRIEVE FAILURE CONDITIONS OR FRAUD CALL DETAILS, RELEASE A CALL AND VERIFY A TRANSLATION PLAN

**SUMMARY:** This procedure provides steps to retrieve failure conditions or details about calls that have been marked as potentially fraudulent by a fraud trap profile. It also provides steps to manually force the release of a call (possibly a fraud call) and verify translation plans in the call router and check the routing decision and modifications.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. Select your task from the following and go to the indicated step.
  - Retrieve failure conditions ..... [Step 3](#)
  - Retrieve details of fraud calls..... [Step 5](#)
  - Release a call ..... [Step 7](#)
  - Verify translation plans ..... [Step 9](#)
  - Finished, no other task in the above list..... continue to the next step.

2.  **YOU HAVE COMPLETED THIS PROCEDURE.**

3. Retrieve failure conditions using the RTRV-FAILCND command.

Command Syntax: RTRV-FAILCND: [TID]: [<cnd>]:CTAG;

**Input Parameters:**

cnd = {up to 21 alphanumeric characters} – Name of failure condition.

Command Example: RTRV-FAILCND;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<cnd>:DESC=<desc>"
;
```

**Output Example:**

```
telica 2003-08-18 15:57:37
M 0 COMPLD
"CALL_BLOCK:DESC=call blocked"
"BCAPNOTIMPL:DESC=bearer capability notimplemented"
"SUBIF_NOT_PROV:DESC=sub if not provisioned"
"NOCKTAVAIL:DESC=NoCircuit available"
"LM_INITIATED_REL:DESC=Layer Mgr initiated release"
"ANS_SUPER_REL:DESC=Answer supervision timer
expiry"
"AUTH_FAILURE:DESC=Auth/Account code entry failure"
"UNALLOC_NUMBER:DESC=unallocated numbers"
/* RTRV-FAILCND */
;
```

4. Do you want to retrieve other failure conditions?

If **YES**, then go to [Step 3](#).

If **NO**, then go to [Step 1](#).

5. Retrieve details about calls that have been marked as potentially fraudulent by a fraud trap profile using the RTRV-FRAUDCALLS command.

Command Syntax: RTRV-FRAUDCALLS:[TID]:[<callAid>]:  
[CTAG]:: [COUNT=<count>];

**Input Parameters:**

callAid = {2-FFFFFF} in hex - Fraud call record in the CDR.

count = {1 . . . 100} - Number of entries to display.

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
"<com>:FRAUDCALLINFO=<fraudCallInfo>,
CFINFO=<cfinfo>,ASSOCCALLINFO=<assocCallInfo>,
NMBRREC=<nmbrrRec>"
;
```

**Output Parameters:**

com = AID for the Plexus 90000.

count = {1 . . . 100} - Number of entries to display in output.

fraudCallInfo = <callAid>-<icIfType>-<icIfId>-<ogIfType>-<ogIfId>-<cgpn>-<cdpn> - Fraud call detail information (the recorded call leg details) where *callAid* is name of a fraud call record in the CDR, *icIfType* is the incoming interface type, *icIfId* is the incoming interface, *ogIfType* is the outgoing interface type, *ogIfId* is the outgoing interface, *cgpn* is the calling party number to be matched, and *cdpn* is the called party number to be matched.

| callAid         | icIfType                                                          | icIfId  | ogIfType                                                          | ogIfId  | cgpn           | cdpn           |
|-----------------|-------------------------------------------------------------------|---------|-------------------------------------------------------------------|---------|----------------|----------------|
| 2-FFFFFF<br>hex | BICC<br>CASIF<br>CASTRK<br>GR303<br>ISDNIF<br>ISUP<br>MGCP<br>SIP | 0-65535 | BICC<br>CASIF<br>CASTRK<br>GR303<br>ISDNIF<br>ISUP<br>MGCP<br>SIP | 0-65535 | 1-31<br>digits | 1-31<br>digits |

cfInfo = <OCN>-<ORR>-<RN>-<RR>-<RC> - call forwarding detail associated with the fraud call record, where *OCN* is the Originating Called party Number in the CDR, *ORR* is the Originating Redirecting Reason in the CDR, *RN* is the Redirecting Number in the CDR, *RR* is the Redirecting Reason in the CDR. and *RC* identifies the Redirecting Counter in the CDR.

| OCN                 | ORR                         | RN                     | RR                             | RC          |
|---------------------|-----------------------------|------------------------|--------------------------------|-------------|
| 1-31 digits<br>NULL | alphanumeric string<br>NULL | 1-31<br>digits<br>NULL | alphanumeric<br>string<br>NULL | 0-<br>65535 |

assocCallInfo = <callAid>-<icIfType>-<icIfId>-<ogIfType>-<ogIfId>-<cgpn>-<cdpn>, - Fraud call detail information (the recorded call leg details) for third party involvement in the call where *callAid* is the name of a fraud call record in the CDR, *icIfType* is the incoming interface type, *icIfId* is the incoming interface, *ogIfType* is the outgoing interface type, *ogIfId* is the outgoing interface, *cgpn* is the calling party number to be matched, and *cdpn* is the called party number to be matched.

| callAid      | icIfType                                                          | icIfId  | ogIfType                                                          | ogIfId  | cgpn           | cdpn           |
|--------------|-------------------------------------------------------------------|---------|-------------------------------------------------------------------|---------|----------------|----------------|
| 2-FFFFFF hex | BICC<br>CASIF<br>CASTRK<br>GR303<br>ISDNIF<br>ISUP<br>MGCP<br>SIP | 0-65535 | BICC<br>CASIF<br>CASTRK<br>GR303<br>ISDNIF<br>ISUP<br>MGCP<br>SIP | 0-65535 | 1-31<br>digits | 1-31<br>digits |

nmbrRec = {1 . . . 65535} - Total number of fraud call records in the database..

### Output Example:

```
telica 2003-10-28 14:37:49
M 0 COMPLD
"com:FRAUDCALLINFO=3F-ISUP-1-ISUP-2-5088048202-
5084900909, CFINFO=5088048202-
1, ASSOCCALLINFO=NULL, NMBREC=1"
/* RTRV-FRAUDCALLS */
;
```

6. Do you want to retrieve other fraud traps?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 1](#).

7. Manually force the release of a call using the RLS-CALL command.

Command Syntax: `RLS-CALL:[TID]:<callAid>:CTAG;`

**Parameters:**

`callAid` = {1 . . . FFFFFFFF} in hexadecimal – Fraud call record in the CDR.

Command Example: `RLS-CALL::3F;`

8. Do you want to retrieve release another call?

If **YES**, then go to [Step 7](#).

If **NO**, then go to [Step 1](#).



**Note:** You must first configure the router to run this command. TEST-TRANS has the following limitations:

- SCP interactions (tollfree, LNP, other general AIN triggers) are not validated (or even detected).
- No simulation occurs when the value of the first part of *actnInfoAnlz* in TRANS-PLAN is “SUB”; that is, the primary digit-screening key “SUBSTATUS” for an action performed at the InfoAnalyzed PIC prior to AIN trigger analysis is not validated.
- Limited support for the digit-modification/screening primary key CALLTYPE in DIGIT-SCREEN, DIGITMOD-DN/GEN/PARAM/TNS, and ROUTE, unless a call type associated with a trunk group is specified in PRFL-PARAMDEFAULTS or is specified by the parameter *callType* in this command. The actual call type associated with the simulated call based on number analysis of calling and called party number is not available to this feature.
- Announcements resulting from a treatment specified in a failure condition profile required by a translation plan are denoted in the TEST-TRANS output solely by their ID numbers, without reporting their applicable arguments.

9. Verify translation plans in the call router and check the routing decision and modifications to the keys using the TEST - TRANS command.

Command Syntax: `TEST-TRANS:[TID]:[<src>]:CTAG::  
[BGN=<bgn>],[CDPN=<cdpn>],[CGPN=<cgpn>],  
[CHRGN=<chrgn>],[GAP=<gap>],[  
GENDGTS=<gendgts>],[TNS=<tns>],  
[LATAID=<lataId>],[OLI=<oli>],[CPC=<cpc>],  
[CIP=<cip>],[JIP=<jip>],[CSI=<csi>],  
[CALLTYPE=<callType>],  
[AUTHCODE=<authCode>],[TOD=<tod>],  
[SUBSTATUS=<substatus>],[FMTOPT=<fmtopt>];`

**Parameters:**

src = COM - AID as a Plexus 9000.

bgn = {<intfcType>-<idx>} - Bearer group where *intfcType* identifies the type of interface applicable to the bearer group and *idx* identifies the trunk group or interface index.

| intfcType | idx          |
|-----------|--------------|
| CASIF     | 1-2147483645 |
| GR303     | 1-32767      |
| ISDNIF    | 1-32767      |
| MGCP      | 1-100000     |
| TGN       | 1-9999       |
| NULL      |              |

cdpn = {<cdnai>-<nmb>} - Called party number where *cdnai* identifies the called party number nature of address indicator and *nmb* identifies the called party number with a numeric string of up to 31 digits

| cdnai        | nmb                       |
|--------------|---------------------------|
| ABBREVPVT    | string of up to 31 digits |
| INTNATNUM    |                           |
| INTNATOPREQ  |                           |
| NATNUM       |                           |
| NATOPREQ     |                           |
| NONUMCUTTHRU |                           |
| NONUMOPREQ   |                           |
| SUBOPREQ     |                           |
| SUBSNUM      |                           |
| TESTLINE     |                           |
| UNKNOWN      |                           |
| NULL         |                           |

cdpn = {<cdnai>-<nmb>} - Called party number where *cdnai* identifies the called party number nature of address indicator and *nmb* identifies the called party number with a numeric string of up to 31 digits.

| cdnai        | nmb                       |
|--------------|---------------------------|
| ABBREVPVT    | string of up to 31 digits |
| INTNATNUM    |                           |
| INTNATOPREQ  |                           |
| NATNUM       |                           |
| NATOPREQ     |                           |
| NONUMCUTTHRU |                           |
| NONUMOPREQ   |                           |
| SUBOPREQ     |                           |
| SUBSNUM      |                           |
| TESTLINE     |                           |
| UNKNOWN      |                           |
| NULL         |                           |

chrgn = {<chrgnnai>-<nmb>} - Charge number where *chrgnnai* identifies the charge number nature of address indicator and *nmb* identifies the charge number with a numeric string of up to 31 digits.

| chrgnnai   | nmb                       |
|------------|---------------------------|
| CDPNATNUM  | string of up to 31 digits |
| CDPSUBSNUM |                           |
| CDPUNAVAIL |                           |
| CGPNATNUM  |                           |
| CGPSUBSNUM |                           |
| UNAVAIL    |                           |
| NULL       |                           |

gap = {<gap>[&<gap>[&<gap>[&<gap>[&<gap>]]]]} - Up to five Generic Address Parameters separated by ampersands (&) where *gap* has the form <primKey>-<secKey> *primKey* identifies the type of GAP with an integer from 0-255, and *secKey* identifies the starting digits with a string of one to 31 digits or "DEFAULT" or "NOTPRSNT"

tns = {<tnsVal>-<0ZZcode>} - Transit Network Selection (TNS) parameter . where  
*tnsVal* = {0-9999} - Carrier code  
*0ZZcode* = {0-255} - ISUP circuit code a string of 1-3 digits

lataId = {200-99999} - Local Access & Transport Area.

= NULL - Default value

oli = {00-FF} in hexadecimal - Originating Line Information

= NULL - Default value

cpc = {00-FF} in hexadecimal - Calling Party Category parameter.

= NULL - Default value

cip = {0-9999} - Carrier Information Parameter (for ISUP only).

= NULL - Default value

jip = {200000-999999} - Jurisdiction Information Parameter (NPANXX).

= NULL - Default value

csi = PRESUBDIAL = presubscribed and input by calling party

= PRESUBNOTDIAL = presubscribed and not input by calling party

= PRESUBUNKNOWN = presubscribed, input by calling party undetermined

= NOTPRESUB = not presubscribed and input by calling party

= UNKNOWN = no indication

= NULL - Default value

callType = CUTTHRU

= DIR\_ASSISTANCE

= EMERGENCY

= INTERLATA

= INTERLATAOPREQ

= INTNATNUM

= INTNATOPREQ  
= INTRALATA  
= INTRALATAOPREQ  
= LOCALNUMBER  
= LOCALOPREQ  
= N11  
= NATNUM  
= NONUMOPREQ  
= TOLLFREE  
= **NULL** - Default value  
authCode = {up to 8 digits} - Authorization code provided by the caller.  
= **NULL** - Default value  
**tod** = {MM-DD-HH} - Time of day in month-day-hour format.  
= **NULL** - Default value  
substatus = ACTIVE - In Service (subscriber is present in the CL4SUB  
table and active)  
= INACTIVE = Out Of Service (subscriber is present in the  
CL4SUB table and inactive)  
= NOTINDB = Not in database (subscriber is not in the CL4SUB  
table)  
= **NULL** - Default value  
fmtopt = {Y|N} - Use (Y) or do not use (N) alternate output formatting  
for decoding in the Plexview® EMS. This parameter is for use  
by Telica personnel; leave it blank.  
text = {ASCII characters} - Output, descriptions of translation plans,  
routing decisions, and key modifications in the call router,.

Command Example: TEST-TRANS::::BGN=TGN-1,  
CDPN=NATNUM-908,TNS=111;

#### Output Format:

```
SID DATE TIME
M CTAG COMPLD
 "<COM>:<text>"
;
```

#### Output Example:

```
telica 2004-05-14 14:37:49
M 0 COMPLD
 "COM:0:TrkGrp-1::TransPlan-TP1"
 "COM:1:type=Transplan, label=TP1, type=Normal,
action=infoColl, type=Screen, label=DS1"
 "COM:2:type=Screen, label=DS1, key=TNS, rule=TNS-0111,
match=0111, action=Pass"
 "COM:3:type=Transplan, label=TP1, type=Normal,
type=Router, label=RD1"
```

```
"COM:4:type=Router, label=RD1, key=CDPN,
rule=CDPN-NATIONAL-DEFAULT, match=NATIONAL-908,
action=RtList, label=RL1"
"COM:5:type=Routelist, label=RL1, hunt=Circ, index=1,
intfc=TrkGrp-1001"
"COM:6:type=Intfc, label=TrkGrp-1001"
;
```

**10.** Do you want to verify another translation plan?

If **YES**, then go to [Step 9](#).

If **NO**, then go to [Step 1](#).



## DLP-673 - RETRIEVE PM DATA AND INITIALIZE REGISTERS FOR LAPD MESSAGE STATISTICS

**SUMMARY:** This procedure provides steps to retrieve the performance for LAPD (Link Access Protocol – D channel) message statistics.

You should have knowledge of entering TL1 commands and of their usage. You can find more information about TL1 command syntax, system responses, and an explanation of error messages in the *TL1 Command Reference Guide*.

1. Select your task from the following and go to the indicated step.
  - Retrieve PM data for LAPD..... [Step 3](#)
  - Initialize registers for LAPD ..... [Step 5](#)
  - Finished, no other task in the above list..... continue to the next step.

2.  **YOU HAVE COMPLETED THIS PROCEDURE.**

3. Retrieve the number of times LAPD message types have been transmitted or received since the counters were last initialized using the RTRV-PM-LAPD command.

Command Syntax: RTRV-PM-LAPD:[TID]:<lapdAid>:[CTAG]::  
[<montype>],[<monlev>],[<locn>],[<dirn>],  
[<tmper>],[<mondatt>],[<montm>];

**Input Parameters:**

|         |                                                       |
|---------|-------------------------------------------------------|
| lapdAid | = LAPD interface and link.                            |
|         | = GR303EOC-{1-32767}-{1-28}                           |
|         | = GR303TMC-{1-32767}-{1-32767}                        |
|         | = ISDN-{1-32767}-{1-32767}                            |
|         | = IUA-IOM-{1-17}-PORT-{1-28}                          |
|         | = IUA-IOM-{1-17}-STS1-{1-8}-PORT-{1-28}               |
|         | = IUA-IOM-{1-17}-T3-{1-8}-PORT-{1-28}                 |
| montype | = ALL - All types                                     |
|         | = DISCRX - Number of disconnect frames received       |
|         | = DISCTX - Number of disconnect frames transmitted    |
|         | = DMRX - Number of disconnect mode frames received    |
|         | = DMTX - Number of disconnect mode frames transmitted |
|         | = FRMR - Number of frame reject errors                |

|         |                                                                                                                 |
|---------|-----------------------------------------------------------------------------------------------------------------|
|         | = FRMRRX - Number of frame reject errors received                                                               |
|         | = FRMRTX - Number of frame reject frames transmitted                                                            |
|         | = INVRX - Number of invalid frames received                                                                     |
|         | = IRX - Number of information frames received                                                                   |
|         | = ITX - Number of information frames transmitted                                                                |
|         | = REJRX - Number of reject frames received                                                                      |
|         | = REJTX - Number of reject frames transmitted                                                                   |
|         | = RNR RX - Number of receive not ready frames received                                                          |
|         | = RNR TX - Number of receive not ready frames transmitted                                                       |
|         | = RRRX - Number of receive ready frames received                                                                |
|         | = RRTX - Number of receive ready frames transmitted                                                             |
|         | = SABMERR - Number of set asynchronous balanced mode errors                                                     |
|         | = SABMRX - Number of set asynchronous balanced mode frames received                                             |
|         | = SABMTX - Number of set asynch balanced mode frames transmitted                                                |
|         | = UARX - Number of unnumbered acknowledge frames received                                                       |
|         | = UATX - Number of unnumbered acknowledge frames transmitted                                                    |
|         | = UIRX - Number of unnumbered information frames received                                                       |
|         | = UITX - Number of unnumbered information frames transmitted                                                    |
|         | = XIDRX - Number of exchange ID frames received                                                                 |
|         | = XIDTX - Number of exchange ID frames transmitted                                                              |
| monval  | = {0 . . . 2147483647} – Monitored value. Not currently supported.                                              |
| monlev  | = {1 . . . 255}-{ <b>UP</b>  DOWN} - Level of the requested monitored parameter.                                |
| vldty   | = ADJ - Data manually adjusted or initialized                                                                   |
|         | = COMPL - Data accumulated over the entire time period                                                          |
|         | = LONG - Data accumulated over greater than the entire time period                                              |
|         | = NA - Data not available                                                                                       |
|         | = PRTL - Data accumulated over a portion of the time period                                                     |
| locn    | = <b>NEND</b> - Near end counters to be initialized.                                                            |
|         | = <b>FEND</b> - Far end counters to be initialized                                                              |
| dirn    | = <b>BTH</b> – Both directions                                                                                  |
|         | = RCV – Receive direction                                                                                       |
|         | = TRMT – Transmit direction                                                                                     |
| tmper   | = {1}- Day – Interval of one day                                                                                |
|         | = {1 . . . 24}-HR - Interval of one to 24 hours.                                                                |
|         | = {1 . . . 15 . . . 1440}-MIN - Interval of one to 1440 minutes.                                                |
| mondatt | = {1-12}-{1-31} - Monitored date in format of MM-DD. This parameter is presently not supported; leave it blank. |
| montm   | = {0-23}-{0-59} - Monitored time in format of HH-MM. This parameter is presently not supported; leave it blank. |

Command Example: RTRV-PM-LAPD::ISDN-1-1;

**Output Format:**

```
SID DATE TIME
M CTAG COMPLD
 "<lapdAid>:<montype>,<monval>,<vldty>,<locn>,<dirn>,<tmper>,<mondatt>,<montm>"
;
```

**Output Example:**

```
telica 2004-05-21 16:00:34
M 0 COMPLD
 "ISDN-1-1:ITX,187363"
 "ISDN-1-1:RRTX,140547"
 "ISDN-1-1:RNRTX,0"
 "ISDN-1-1:REJTX,23"
 "ISDN-1-1:SABMTX,2"
 "ISDN-1-1:DISCTX,0"
 "ISDN-1-1:UATX,1"
 "ISDN-1-1:DMTX,0"
 "ISDN-1-1:FRMRTX,0"
 "ISDN-1-1:XIDTX,0"
 "ISDN-1-1:UITX,0"
 "ISDN-1-1:IRX,140554"
 "ISDN-1-1:RRRX,187357"
 "ISDN-1-1:RNRRX,0"
 "ISDN-1-1:REJRX,6"
 "ISDN-1-1:SABMRX,1"
 "ISDN-1-1:DISCRX,0"
 "ISDN-1-1:UARX,1"
 "ISDN-1-1:DMRX,0"
 "ISDN-1-1:FRMRRX,0"
 "ISDN-1-1:XIDRX,0"
 "ISDN-1-1:UIRX,0"
 "ISDN-1-1:INVRX,0"
 "ISDN-1-1:SABMERR,0"
 "ISDN-1-1:FRMRERR,0"
 /* RTRV-PM-LAPD */
;
```

4. Do you want to retrieve PM data of other LAPD messages?

If **YES**, then go to [Step 3](#).

If **NO**, then go to [Step 1](#).

5. Initialize LAPD registers using the INIT-REG-LAPD command.

Command Syntax:   INIT-REG-LAPD:[TID]:<lapdAid>:[CTAG]::  
                          [<montype>],[<monval>],[<locn>],[<dirn>],  
                          [<tmper>],[<mondatt>],[<montm>];

Refer to [Step 3](#) for parameter descriptions.

Command Example:   INIT-REG-LAPD;

6. Do you want to initialize another LAPD register or other parameters?

If **YES**, then go to [Step 5](#).

If **NO**, then go to [Step 1](#).

## PROCEDURES CHECKLIST

| NUMBER      | TITLE NAME                                                         | ISSUE & DATE |
|-------------|--------------------------------------------------------------------|--------------|
| MLP-IXL-001 | Maintenance Task Index List                                        | 1, 05/28/04  |
| TAP-IXL-001 | Trouble Clearing Task Index List                                   | 4, 05/28/04  |
|             |                                                                    |              |
| MLP-700     | Periodic Maintenance                                               | 1, 01/16/04  |
| MLP-701     | Check Call Control Information                                     | 1, 01/16/04  |
| MLP-702     | Check ISDN Message Information                                     | 1, 01/16/04  |
| MLP-703     | Check ISUP Message Information                                     | 1, 01/16/04  |
| MLP-704     | Check SS7 Signaling Information                                    | 1, 01/16/04  |
| MLP-705     | Check PM Data for Signaling Link Layer 2/3                         | 1, 01/16/04  |
| MLP-706     | Check ISDN Status                                                  | 1, 01/16/04  |
| MLP-707     | Check GR303 Status                                                 | 1, 01/16/04  |
| MLP-708     | Check PM Data and Initialize Registers for SIP Messages            | 1, 01/16/04  |
| MLP-709     | Check PM Data and Initialize Registers for T1 and T3               | 1, 01/16/04  |
| MLP-710     | Switch or Schedule A Switch To Protection                          | 1, 05/28/04  |
|             |                                                                    |              |
| TAP-101     | Clear IOM Alarms                                                   | 2, 05/28/04  |
| TAP-102     | Clear Module Alarms                                                | 1, 07/25/03  |
| TAP-103     | Clear System Processor Alarms                                      | 2, 05/28/04  |
| TAP-104     | Clear BITS Alarms                                                  | 1, 07/25/03  |
| TAP-105     | Clear Fan Alarms                                                   | 1, 07/25/03  |
| TAP-106     | Clear Miscellaneous Alarms                                         | 2, 05/28/04  |
|             |                                                                    |              |
| DLP-504     | Establish a Telnet Session                                         | 1, 07/25/03  |
| DLP-507     | Replace a Fan Shelf                                                | 1, 07/25/03  |
| DLP-508     | Replace the Fan Filter                                             | 1, 07/25/03  |
| DLP-511     | Upgrade an I/O Module                                              | 1, 05/28/04  |
| DLP-512     | Replace/Upgrade a System Processor                                 | 2, 04/02/04  |
| DLP-513     | Replace Switch Fabric Module                                       | 1, 07/25/03  |
| DLP-514     | Module Installation or Removal                                     | 1, 07/25/03  |
| DLP-515     | Replace a Faulted DS1 or DS3 IOM                                   | 2, 05/28/04  |
| DLP-516     | Connect the Plexus 9000 to a Craft Terminal                        | 1, 07/25/03  |
| DLP-532     | Perform Loopbacks                                                  | 1, 07/25/03  |
| DLP-534     | Retrieve Stats, PM Data and Initialize Registers for ISDN Messages | 1, 07/25/03  |
| DLP-535     | Replace a Module, Fan or Fan Filter                                | 2, 01/09/04  |
| DLP-536     | Retrieve Stats, PM Data and Initialize Registers for ISUP Messages | 1, 07/25/03  |

| <b>NUMBER</b> | <b>TITLE NAME</b>                                                                           | <b>ISSUE &amp; DATE</b> |
|---------------|---------------------------------------------------------------------------------------------|-------------------------|
| DLP-537       | Provision T1 Registers and Thresholds and Retrieve PM Data                                  | 1, 07/25/03             |
| DLP-538       | Provision T3 Registers and Thresholds and Retrieve PM Data                                  | 1, 07/25/03             |
| DLP-544       | Provision or Check IP Addresses                                                             | 4, 05/28/04             |
| DLP-554       | Remove or Restore Modules From/To Service                                                   | 2, 01/06/04             |
| DLP-555       | Log Commands                                                                                | 1, 05/28/04             |
| DLP-556       | Allow or Inhibit Loopbacks                                                                  | 2, 09/05/03             |
| DLP-560       | Save or Restore System Configuration File                                                   | 4, 09/05/03             |
| DLP-561       | Provision PM Day                                                                            | 2, 09/05/03             |
| DLP-568       | Retrieve Alarms or Conditions                                                               | 1, 07/25/03             |
| DLP-569       | Test Using the Monitor Test Jacks                                                           | 2, 09/05/03             |
| DLP-571       | Retrieve Stats, PM Data and Initialize Registers for Call Control                           | 1, 07/25/03             |
| DLP-595       | Edit States of ISDN B Channel, Interface, SS7 link set or Signaling Link                    | 1, 07/25/03             |
| DLP-596       | Retrieve Status of SS7 Linkset, Retrieve PM Data of Linkset Or Initialize Linkset Registers | 1, 07/25/03             |
| DLP-606       | Capturing Signaling                                                                         | 1, 07/25/03             |
| DLP-609       | Retrieve or Delete Alarm Queue                                                              | 1, 05/28/04             |
| DLP-610       | Provision and Schedule System Backup                                                        | 1, 05/28/04             |
| DLP-611       | Allow, Inhibit or Schedule Failovers                                                        | 1, 04/09/04             |
| DLP-612       | Operate a Circuit Query or Validation Test                                                  | 1, 05/28/04             |
| DLP-613       | Switch ISDN D Channel to Protection                                                         | 1, 05/28/04             |
| DLP-614       | Trace Call                                                                                  | 1, 01/17/03             |
| DLP-615       | Capturing Calls                                                                             | 1, 05/07/04             |
| DLP-616       | Generate or Retrieve SECULOG                                                                | 1, 03/18/02             |
| DLP-621       | Change I/O Module Software Version                                                          | 2, 05/28/04             |
| DLP-624       | Retrieve Status of Media Gateway and Voice Server IOMs                                      | 1, 07/25/03             |
| DLP-626       | Retrieve COT or CFV for a Subscriber                                                        | 1, 05/28/04             |
| DLP-631       | Retrieve RDT Layer 2 and 3 timers                                                           | 1, 05/28/04             |
| DLP-635       | Retrieve Signaling Layer2/3 Status, PM Data and Initialize Registers                        | 1, 05/28/04             |
| DLP-636       | Retrieve PM Data For SS7 Route and Initialize Registers                                     | 1, 07/25/03             |
| DLP-640       | Retrieve SS7 Route Status and PM Data and Initialize SS7 Route Registers                    | 1, 07/25/03             |
| DLP-641       | Retrieve Point Code Status and DPC PM Data and Initialize DPC Registers                     | 1, 07/25/03             |
| DLP-642       | Retrieve Signaling Link Status and PM Data and Initialize Registers                         | 1, 07/25/03             |
| DLP-643       | Retrieve Status of GR303 Interface Group and CRV                                            | 1, 07/25/03             |

| NUMBER  | TITLE NAME                                                                                      | ISSUE &<br>DATE |
|---------|-------------------------------------------------------------------------------------------------|-----------------|
| DLP-644 | Retrieve PM Data of SIP Messages                                                                | 1, 07/25/03     |
| DLP-645 | Retrieve Status for TDM, ATM and Packet Terminations                                            | 1, 07/25/03     |
| DLP-647 | Retrieve ISDN Status                                                                            | 1, 07/25/03     |
| DLP-652 | Retrieve ENET Stats                                                                             | 1, 07/25/03     |
| DLP-653 | Retrieve PM Data and Set/Retrieve Thresholds for VCC                                            | 1, 05/28/04     |
| DLP-654 | Retrieve PM Data and Set/Retrieve Thresholds for Voice Processors                               | 1, 05/28/04     |
| DLP-666 | Provision GMSC Registers and Retrieve PM Data                                                   | 1, 09/05/03     |
| DLP-667 | Replace a Network Access or Voice Server IOM                                                    | 1, 01/09/04     |
| DLP-670 | Retrieve PM Data and Initialize registers for Voice Mail System                                 | 1, 05/28/04     |
| DLP571  | Retrieve PM Data and Initialize registers for Release Causes                                    | 1, 05/28/04     |
| DLP-572 | Retrieve Failure Conditions or Fraud Call Details, Release a Call and Verify a Translation Plan | 1, 05/28/04     |
| DLP-573 | Retrieve PM Data and Initialize registers for LAPD Message Statistics                           | 1, 05/28/04     |
|         |                                                                                                 |                 |

**NOTES:**



## Appendix A. Messages

This appendix contains the following tables that list alarms and messages that are generated by the Plexus 9000. Alarms and Messages are listed in numeric order according to the Alarm ID number.

[Table A-A. Critical Alarms](#)

[Table A-B. Major Alarms](#)

[Table A-C. Critical/ Major Alarms](#)

[Table A-D. Minor Alarms](#)

[Table A-E. Informational Messages](#)

[Table A-F. Normal Messages](#)

[Table A-G. Obsolete Alarms and Messages](#)

The alarms in the Major/Critical Alarm table could be critical or major alarms depending whether a protection module is available for use. If no protection module is available, the alarm will be a critical alarm. If the IOM has switched to protection, the alarm will be a major alarm.

**Table A-A. Critical Alarms**

| <b>Alarm ID</b> | <b>Critical Alarm REPT String</b>                                 | <b>CondType</b> | <b>Aid</b>     | <b>Entity Type</b> |
|-----------------|-------------------------------------------------------------------|-----------------|----------------|--------------------|
| 73              | Module in slot %d failed to failover to slot %d                   | INTERR          | IOM-%d         | EQPT               |
| 75              | Module in slot %d - not operational but provisioned as in-service | INTERR          | IOM-%d         | EQPT               |
| 201             | %s Loss of Signal                                                 | LOS             | IOM-%d-T3-%d   | T3                 |
| 203             | %s Loss of Frame                                                  | LOF             | IOM-%d-T3-%d   | T3                 |
| 205             | %s Alarm Indication Signal                                        | AIS             | IOM-%d-T3-%d   | T3                 |
| 207             | %s Remote Alarm Indication                                        | RAI             | IOM-%d-T3-%d   | T3                 |
| 219             | %s Loss of Signal                                                 | LOS             | IOM-%d-STS1-%d | STS1               |
| 221             | %s Loss of Frame                                                  | LOF             | IOM-%d-STS1-%d | STS1               |
| 223             | %s Alarm Indication Signal (Path)                                 | AIS-P           | IOM-%d-STS1-%d | STS1               |
| 225             | %s Remote Defect Indication (Path)                                | RDI-P           | IOM-%d-STS1-%d | STS1               |
| 227             | %s Alarm Indication Signal (Line)                                 | AIS-L           | IOM-%d-STS1-%d | STS1               |
| 229             | %s Remote Defect Indication (Line)                                | RDI-L           | IOM-%d-STS1-%d | STS1               |
| 231             | %s Loss of Pointer (Path)                                         | LOP-P           | IOM-%d-STS1-%d | STS1               |
| 233             | %s Unequipped (Path)                                              | UNEQ-P          | IOM-%d-STS1-%d | STS1               |
| 235             | %s Payload Mismatch (Path)                                        | PLM-P           | IOM-%d-STS1-%d | STS1               |
| 237             | %s Remote Failure Indication (Path)                               | RFI-P           | IOM-%d-STS1-%d | STS1               |
| 239             | %s Remote Failure Indication (Line)                               | RFI-L           | IOM-%d-STS1-%d | STS1               |

| Alarm ID | Critical Alarm REPT String                                                 | CondType  | Aid                                   | Entity Type |
|----------|----------------------------------------------------------------------------|-----------|---------------------------------------|-------------|
| 241      | %s Trace Id Mismatch cleared                                               | TIM       | IOM-%d-STs1-%d                        | STS1        |
| 243      | %s Payload Defect Indication (Path)                                        | PDI-P     | IOM-%d-STs1-%d                        | STS1        |
| 245      | %s Parity Error                                                            | EXT       | IOM-%d-STs1-%d                        | STS1        |
| 266      | %s Loss of Pointer (Vt)                                                    | LOP-V     | IOM-%d-%s-PORT-%d                     | T1          |
| 268      | %s Unequipped (Vt)                                                         | UNEQ-V    | IOM-%d-%s-PORT-%d                     | T1          |
| 270      | %s Payload Mismatch (Vt)                                                   | PLM-V     | IOM-%d-%s-PORT-%d                     | T1          |
| 272      | %s Remote Defect Indication (Vt)                                           | RDI-V     | IOM-%d-%s-PORT-%d                     | T1          |
| 274      | %s Paylod Defect Indication (Vt)                                           | PDI-V     | IOM-%d-%s-PORT-%d                     | T1          |
| 300      | All BITS Inputs have failed                                                | SYNCOOS   | TMG-%c                                | T1          |
| 302      | No BITS Inputs are provisioned In Service                                  | PRCDRERR  | CHASSIS                               | EQPT        |
| 420      | MTP3 - PAUSE - PC %s                                                       | CCSNETIRR | PC-%s                                 | COM         |
| 648      | IOM-%d-%s Loss of Signal                                                   | LOS       | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 650      | IOM-%d-%s Loss of Frame                                                    | LOF       | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 652      | IOM-%d-%s Alarm Indication Signal                                          | AIS       | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 654      | IOM-%d-%s Remote Defect Indication                                         | RDI       | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 656      | IOM-%d-%s Loss of Pointer                                                  | LOP       | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 658      | IOM-%d-%s Unequipped                                                       | UNEQ-P    | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 660      | IOM-%d-%s Payload Mismatch                                                 | PLM-P     | IOM-%d-OC3-%d<br>or<br>IOM-%d-OC12-%d | OC          |
| 674      | STATS - SP-%c error encountered opening record buffer or buffer maint file | PROGFLT   | SP-%c                                 | COM         |
| 675      | STATS - SP-%c error encountered reading or writing record buffer file      | PROGFLT   | SP-%c                                 | COM         |

| Alarm ID | Critical Alarm REPT String                                                          | CondType  | Aid                             | Entity Type |
|----------|-------------------------------------------------------------------------------------|-----------|---------------------------------|-------------|
| 676      | STATS - SP-%c error record buffer or buffer maint of incorrect length               | PROGFLT   | SP-%c                           | COM         |
| 677      | STATS - SP-%c error encountered reading or writing buffer maint file                | PROGFLT   | SP-%c                           | COM         |
| 681      | STATS - SP-%c error %d - stats init failure creating or attaching shared memory     | PROGFLT   | SP-%c                           | COM         |
| 686      | BILLING - SP-%c error encountered opening record buffer or buffer maint file        | PROGFLT   | SP-%c                           | COM         |
| 687      | BILLING - SP-%c error encountered reading or writing record buffer file             | PROGFLT   | SP-%c                           | COM         |
| 688      | BILLING - SP-%c error record buffer or buffer maint of incorrect length             | PROGFLT   | SP-%c                           | COM         |
| 689      | BILLING - SP-%c error encountered reading or writing buffer maint file              | PROGFLT   | SP-%c                           | COM         |
| 693      | BILLING - SP-%c error %d - billing init failure creating or attaching shared memory | PROGFLT   | SP-%c                           | COM         |
| 702      | Failed to Initialize H.248 - No Signaling IP provisioned                            | PRCDRERR  | COM                             | COM         |
| 704      | Service change with MGC - %s failed                                                 | GP        | COM                             | COM         |
| 850      | Restore performed - INIT-SYS required for correct operation                         | PRCDRERR  | SP-%c                           | COM         |
| 862      | %s Loss of Signal                                                                   | LOS       | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 864      | %s Loss of Frame                                                                    | LOF       | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 866      | %s Alarm Indication Signal (line)                                                   | AIS-L     | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 868      | %s Remote Defect Indication (line)                                                  | RDI-L     | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 891      | IOM-%d-ENET-%d Loss of Signal                                                       | LOS       | IOM-%d-ENET-%d                  | ENET        |
| 893      | IOM-%d-ENET-%d Loss of IP connectivity                                              | EXT       | IOM-%d-ENET-%d                  | ENET        |
| 895      | IOM-%d-ENET-%d No ARP response from Far End                                         | EXT       | IOM-%d-ENET-%d                  | ENET        |
| 907      | M3UA - PAUSE - PC %s                                                                | CCSNETIRR | PC-%s                           | COM         |
| 931      | SP-%c Incorrect Times Ten schema version                                            | SFT       | SP-%c                           | COM         |
| 932      | SP-%c Persistent database Main daemon halted                                        | SFT       | SP-%c                           | COM         |
| 933      | SP-%c Persistent database Main daemon exited                                        | SFT       | SP-%c                           | COM         |
| 934      | SP-%c Persistent database Replication daemon exited                                 | SFT       | SP-%c                           | COM         |
| 976      | IOM-%d-%s Loss of IP Connectivity                                                   | LOF       | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |

| Alarm ID | Critical Alarm REPT String                                        | CondType | Aid                             | Entity Type |
|----------|-------------------------------------------------------------------|----------|---------------------------------|-------------|
| 1066     | IOM-%d-%s No Inverse ARP from the Far End                         | EXT      | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 1073     | IOM-%d-%s Inverse ARP: Remote Peer IP %s mismatch                 | EXT      | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 1082     | SP-%c Lost hardware mastership                                    | CONTEQPT | EQPT                            | SP-%c       |
| 1088     | IOM-%d APC-%d Receiving Switch Fabric Violations from both SFs    | PAINTGRT | SF-%c or IOM-%d                 | EQPT        |
| 1089     | IOM-%d APC-%d Receiving Switch Fabric Violations from SF-%c       | PAINTGRT | SF-%c or IOM-%d                 | EQPT        |
| 1090     | IOM-%d APC-%d Receiving Switch Fabric Parity Errors from both SFs | PAINTGRT | SF-%c or IOM-%d                 | EQPT        |
| 1091     | IOM-%d APC-%d Receiving Switch Fabric Parity Errors from SF-%c    | PAINTGRT | SF-%c or IOM-%d                 | EQPT        |
| 1093     | SP-%d failed to takeover during the Administrative failover       | PROGFLT  | SP-%c                           | EQPT        |
| 1104     | SF-%c Redundant hardware mastership logic mismatch 0x%x           | CONTEQPT | SF-%c                           | EQPT        |
| 1110     | %s - Remote Failure Indication (Line)                             | RFI-V    | IOM-%d-%s-VT1-%d                | T1          |
| 1112     | %s - Alarm Indication Signal (Line)                               | AIS-V    | IOM-%d-%s-VT1-%d                | T1          |
| 1114     | %s - Remote Failure Indication Server (Path)                      | RFIS-V   | IOM-%d-%s-VT1-%d                | T1          |
| 1116     | %s - Remote Failure Indication Connectivity (Path)                | RFIC-V   | IOM-%d-%s-VT1-%d                | T1          |
| 1118     | %s - Remote Failure Indication Payload (Path)                     | RFIP-V   | IOM-%d-%s-VT1-%d                | T1          |
| 1120     | %s - Remote Failure Indication (Line)                             | RFI-T    | IOM-%d-STM1-%d-TU12-%d          | E1          |
| 1122     | %s - Alarm Indication Signal (Line)                               | AIS-T    | IOM-%d-STM1-%d-TU12-%d          | E1          |
| 1124     | %s - Remote Failure Indication Server (Path)                      | RFIS-T   | IOM-%d-STM1-%d-TU12-%d          | E1          |
| 1126     | %s - Remote Failure Indication Connectivity (Path)                | RFIC-T   | IOM-%d-STM1-%d-TU12-%d          | E1          |
| 1128     | %s - Remote Failure Indication Payload (Path)                     | RFIP-T   | IOM-%d-STM1-%d-TU12-%d          | E1          |
| 1130     | %s Loss of Multiframe (Path)                                      | LOM-P    | IOM-%d-STS1-%d                  | STS1        |
| 1132     | %s Remote Failure Indication Server (Path)                        | RFIS-P   | IOM-%d-STS1-%d                  | STS1        |
| 1134     | %s Remote Failure Indication Connectivity (Path)                  | RFIC-P   | IOM-%d-STS1-%d                  | STS1        |
| 1136     | %s Remote Failure Indication Payload (Path)                       | RFIP-P   | IOM-%d-STS1-%d                  | STS1        |
| 1140     | SP-%c IP Connectivity Fault - Active %d Partner %d                | CONTCOM  | SP-A/B                          | COM         |
| 1142     | MGC-MG MEGACO Down %s Port %d to Port %d - IP %s - Cause %s       | GP       | CHASSIS                         | COM         |

| Alarm ID | Critical Alarm REPT String                                          | CondType | Aid     | Entity Type |
|----------|---------------------------------------------------------------------|----------|---------|-------------|
| 1158     | SG-MGC M3UA Down SP-%c to MGCID %d - Port %d - IP %s                | EXT      | CHASSIS | COM         |
| 1160     | MGC-SG M3UA Down <MgName,DIST>-<PRI,SEC> Port %d to Port %d - IP %s | EXT      | CHASSIS | COM         |
| 1162     | MG-MGC MEGACO Down SP-%c to MGCID %d - Port %d - IP %s              | GP       | CHASSIS | COM         |
| 1166     | MGC-MG IUA Down <MgName>-<PRI,SEC> Port %d to Port %d - IP %s       | EXT      | CHASSIS | COM         |
| 1168     | MG-MGC IUA Down SP-%c to Port %d - IP %s                            | EXT      | CHASSIS | COM         |
| 1181     | Signaling Access Interface not up                                   | PRCDRERR | COM     | COM         |
| 1190     | MGCP - congestion threshold 3 exceeded                              | EXTERR   | COM     | COM         |
| 1192     | SIP - congestion threshold 3 exceeded                               | EXTERR   | COM     | COM         |

Table A-B. Major Alarms

| Alarm ID | Major Alarm REPT String                                                   | CondType     | Aid             | Entity Type |
|----------|---------------------------------------------------------------------------|--------------|-----------------|-------------|
| 1        | SP-%c disk controller failure                                             | BKUPMEMP     | SP-%c           | EQPT        |
| 2        | SP-%c nonvolatile memory read or write failure                            | BKUPMEMP     | SP-%c           | EQPT        |
| 5        | SP-%c bus error at address 0x%x                                           | BUERR        | SP-%c           | EQPT        |
| 6        | SP-%c kernel fault                                                        | PROGFLT      | SP-%c           | EQPT        |
| 8        | SP-%c RS232 craft interface failure                                       | IOTERM       | SP-%c           | EQPT        |
| 9        | SP-%c 100baseT loss of carrier on SP to SP interface                      | CONTCOM      | SP-%c           | PLK         |
| 11       | SP-%c 100baseT internal fault on SP to SP interface                       | CONTCOM      | SP-%c           | EQPT        |
| 12       | SP-%c 100baseT loss of carrier on signaling interface                     | CSC          | SP-%c           | PLK         |
| 14       | SP-%c 100baseT internal fault on signaling interface                      | CONTCOM      | SP-%c           | EQPT        |
| 15       | SP-%c 100baseT loss of carrier on management interface                    | OSLINK       | SP-%c           | PLK         |
| 17       | SP-%c 100baseT internal fault on management interface                     | CONTCOM      | SP-%c           | EQPT        |
| 35       | Protection SP-%c failed to go ready in time                               | INTERR       | SP-%c           | EQPT        |
| 36       | Protection SP-%c failed to sync in time                                   | INTERR       | SP-%c           | EQPT        |
| 37       | Failed to read SP-%c id prom                                              | INTERR       | SP-%c           | EQPT        |
| 48       | Fan unit or fuse fault                                                    | INT          | Fan             | EQPT        |
| 50       | Chassis over temperature fault                                            | INT          | Fan             | EQPT        |
| 52       | Fan unit has been removed                                                 | REPLUNITMISS | Fan             | EQPT        |
| 62       | SF-%c removed                                                             | REPLUNITMISS | SF-%c           | EQPT        |
| 64       | SP-%c removed                                                             | REPLUNITMISS | SP-%c           | EQPT        |
| 67       | SF-%c rear module removed                                                 | REPLUNITMISS | SF-%c-REAR      | EQPT        |
| 69       | SP-%c rear removed                                                        | REPLUNITMISS | SP-%c           | EQPT        |
| 81       | SF-%c CLEI %s is not compatible with chassis type %s                      | PRCDRERR     | SF-%c           | EQPT        |
| 82       | IOM-%d Failed to burn prom partition %s error %d                          | INTERR       | IOM-%d          | EQPT        |
| 84       | IOM-%d Prom burn timeout                                                  | INTERR       | IOM-%d          | EQPT        |
| 103      | SP-%c %s Failure - %s                                                     | PROGFLT      | SP-%c           | COM         |
| 105      | SP-%c Process %s timed-out waiting for ready during boot                  | PROGFLT      | SP-%c           | COM         |
| 106      | SP-%c Process %s timed-out waiting for synchronization with protection SP | PROGFLT      | SP-%c           | COM         |
| 107      | SP-%c Process %s timed-out during recovery after failed protection SP     | PROGFLT      | SP-%c           | COM         |
| 108      | SP-%c Process %s timed-out during recovery after SP failover              | PROGFLT      | SP-%c           | COM         |
| 109      | SP-%c lost heartbeat with SP-%c on %s interface                           | CONTCOM      | SP-%c           | COM         |
| 110      | SP-%c %s                                                                  | DATAFLT      | SP-%c           | COM         |
| 111      | SP-%c %s                                                                  | PROGFLT      | SP-%c           | COM         |
| 117      | IOM-%d lost heartbeat with SP-%c                                          | CONTCOM      | IOM-%d or SP-%c | EQPT        |
| 118      | SP-%c is out of sync                                                      | PROGFLT      | SP-%c           | EQPT        |
| 120      | IOM-%d failed to connect to the Sby SP-%c                                 | CONTCOM      | IOM-%d          | EQPT        |
| 135      | The TL1 Agent failed to create a TCP socket                               | PROGFLT      | SP-%c           | COM         |

| Alarm ID | Major Alarm REPT String                                                              | CondType | Aid             | Entity Type |
|----------|--------------------------------------------------------------------------------------|----------|-----------------|-------------|
| 136      | SF-%c failed to initialize - %s                                                      | EQPT     | SF-%c           | EQPT        |
| 137      | SF-%c APC failed - %s                                                                | EQPT     | SF-%c           | EQPT        |
| 138      | SF-%c failed to initialize - %s                                                      | EQPT     | SF-%c           | EQPT        |
| 139      | SF-%c ACE failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 140      | SF-%c ACE failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 141      | SF-%c ASX failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 142      | SF-%c ASX failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 143      | SF-%c ASX failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 144      | SF-%c ASX failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 145      | SF-%c ASX failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 146      | SF-%c ASX failed - %s                                                                | PAINTGRT | SF-%c           | EQPT        |
| 147      | SF-%c from APC on SF-%c Input Port Parity Error Detected by the ATM Switch(ASX)      | PAINTGRT | SF-%c           | EQPT        |
| 148      | SF-%c from APC on SF-%c Input Port Overrun Err threshold exceeded by ATM Switch(ASX) | PAINTGRT | SF-%c           | EQPT        |
| 149      | SF-%c receiving errored signal from SF-%c                                            | PAINTGRT | SF-%c           | EQPT        |
| 150      | SF-%c receiving errored signal from IOM-%d                                           | PAINTGRT | SF-%c or IOM-%d | EQPT        |
| 151      | IOM-%d transmitting comm errors to SF(s)                                             | PAINTGRT | IOM-%d          | EQPT        |
| 152      | SF-%c receiving ATM CRC error from SF-%c                                             | PAINTGRT | SF-%c           | EQPT        |
| 153      | SF-%c receiving ATM CRC error from IOM-%d                                            | PAINTGRT | SF-%c or IOM-%d | EQPT        |
| 154      | IOM-%d transmitting ATM CRC errors to SF(s)                                          | PAINTGRT | IOM-%d          | EQPT        |
| 155      | SF-%c to IOM-%d CRC Error                                                            | PAINTGRT | SF-%c           | EQPT        |
| 156      | SF-%c to IOM-%d Decode Error                                                         | PAINTGRT | SF-%c           | EQPT        |
| 157      | SF-%c to IOM-%d Missing Sync Error                                                   | PAINTGRT | SF-%c           | EQPT        |
| 159      | %s - error in SF-%c to IOM-%d signal                                                 | CONTBUS  | SF-%c or IOM-%d | EQPT        |
| 160      | %s - IOM-%d is not driving parity to SF-%c                                           | CONTBUS  | SF-%c or IOM-%d | EQPT        |
| 161      | IOM-%d to SF-%c maintenance link data transfer error                                 | CONTBUS  | IOM-%d          | EQPT        |
| 162      | IOM-%d to SF-%c maintenance link timeout                                             | CONTBUS  | IOM-%d          | EQPT        |
| 163      | error in SF-%c to SP TMG-%c signal                                                   | CONTBUS  | SF-%c           | EQPT        |
| 164      | SP TMG-%c is not driving parity to SF-%c                                             | CONTBUS  | SF-%c           | EQPT        |
| 165      | SP TMG-%c to SF-%c maintenance link data transfer error                              | CONTBUS  | SF-%c           | EQPT        |
| 166      | SP TMG-%c to SF-%c maintenance link timeout                                          | CONTBUS  | SF-%c           | EQPT        |
| 171      | IOM-%d-PORT-%d Loss of Signal                                                        | LOS      | IOM-%d-PORT-%d  | T1          |
| 173      | IOM-%d-PORT-%d Loss of Frame                                                         | LOF      | IOM-%d-PORT-%d  | T1          |
| 175      | IOM-%d-PORT-%d Alarm Indication Signal                                               | AIS      | IOM-%d-PORT-%d  | T1          |

| Alarm ID | Major Alarm REPT String                                                   | CondType  | Aid               | Entity Type |
|----------|---------------------------------------------------------------------------|-----------|-------------------|-------------|
| 177      | IOM-%d-PORT-%d Remote Alarm Indication                                    | RAI       | IOM-%d-PORT-%d    | T1          |
| 184      | Signaling is not responding                                               | INTMSGERR | SP-%c             | COM         |
| 197      | Signaling is not responding to DS3 Driver                                 | INTMSGERR | SP-%c             | COM         |
| 254      | %s Loss of Signal                                                         | LOS       | IOM-%d-%s-PORT-%d | T1          |
| 256      | %s Loss of Frame                                                          | LOF       | IOM-%d-%s-PORT-%d | T1          |
| 258      | %s Alarm Indication Signal                                                | AIS       | IOM-%d-%s-PORT-%d | T1          |
| 260      | %s Remote Alarm Indication                                                | RAI       | IOM-%d-%s-PORT-%d | T1          |
| 262      | %s Alarm Indication Signal (Vt)                                           | AIS-V     | IOM-%d-%s-PORT-%d | T1          |
| 264      | %s Remote Defect Indication (Vt)                                          | RDI-V     | IOM-%d-%s-PORT-%d | T1          |
| 285      | IOM-%d - BITS incorrect clock source                                      | INTERR    | IOM-%d            | EQPT        |
| 306      | TMG-%c - Maintenance Link Error(%d)                                       | FACTERM   | SP-%c             | EQPT        |
| 309      | TMG-%c - Hardware failure                                                 | INTERR    | SP-%c             | EQPT        |
| 311      | SP-%c Sys-Mngr GOACT failed - cause %d                                    | PROGFLT   | SP-%c             | COM         |
| 312      | SP-%c Sys-Mngr GOSTBY failed - cause %d                                   | PROGFLT   | SP-%c             | COM         |
| 313      | SP-%c Sys-Mngr warm start failed - cause %d                               | PROGFLT   | SP-%c             | COM         |
| 314      | SP-%c Sys-Mngr PEERSYNC failed - cause %d                                 | PROGFLT   | SP-%c             | COM         |
| 315      | SP-%c Sys-Mngr disable peer SAP failed - cause %d                         | PROGFLT   | SP-%c             | COM         |
| 316      | SP-%c Sys-Mngr ABORT failed - cause %d                                    | PROGFLT   | SP-%c             | COM         |
| 317      | SP-%c Sys-Mngr peer update failed - cause %d                              | PROGFLT   | SP-%c             | COM         |
| 319      | SP-%c Sys-Mngr Node Op %d failed on Trans %d - cause %d                   | PROGFLT   | SP-%c             | COM         |
| 320      | %s signaling process timeout on state change for entity %d on transact %d | PROGFLT   | SP-%c or IOM-%d   | COM         |
| 321      | %s signaling process failed on state change for entity %d on transact %d  | PROGFLT   | SP-%c or IOM-%d   | COM         |
| 323      | %s signaling msg router memory pool alloc failed - cause %d               | PROGFLT   | SP-%c or IOM-%d   | COM         |
| 328      | SP-%c PSF %d update sequence error - cause %d                             | PROGFLT   | SP-%c             | COM         |
| 329      | SP-%c PSF %d memory failure - cause %d                                    | PROGFLT   | SP-%c             | COM         |
| 331      | Update failure on the Stby SP-%c                                          | PROGFLT   | SP-%c             | COM         |
| 332      | SP-%c to %s relay channel %d communication error - cause %d               | PROGFLT   | SP-%c             | COM         |
| 372      | MTP3 - link entered cong - linkId %d CongLvl %d on %s                     | SLCR      | SLK-%d            | SLK         |
| 422      | MTP3 - PC %s congested                                                    | SLCR      | PC-%s             | COM         |
| 540      | More than %d percent of the trunks to DPC %s are OOS                      | TRKGRPLIM | PC-%d-%d-%d       | TRK         |
| 556      | More than %d percent of the trunks or lines in route %s are OOS           | TRKGRPLIM | RT-%s             | TRK         |



| Alarm ID | Major Alarm REPT String                                                        | CondType | Aid                                  | Entity Type |
|----------|--------------------------------------------------------------------------------|----------|--------------------------------------|-------------|
| 603      | Q931 - Config request failed - IntfcId %d linkId %d on %s                      | SFT      | COM                                  | ISDNL3      |
| 625      | TSMC - Error synchronizing standby                                             | SYNCEQPT | SP-%c                                | COM         |
| 631      | %s UNI down                                                                    | UNIERR   | UNI-IOM-%d-OC-%d or UNI-IOM-%d-T3-%d | PLK         |
| 638      | SVCID %s Endpoint Out Of Service Cause %s                                      | INTERR   | SVC-%d-%d-%d-%d                      | PLK         |
| 639      | SVCID %s Endpoint Out Of Service Cause %s                                      | EXT      | SVC-%d-%d-%d-%d                      | PLK         |
| 643      | PVCID %s-%d Out Of Service Cause %s                                            | INT      | PVC-%d-%d-%d-%d                      | PLK         |
| 644      | PVCID %s-%d Out Of Service Cause %s                                            | EXT      | PVC-%d-%d-%d-%d                      | PLK         |
| 664      | LM - The database is not available                                             | PROGFLT  | COM                                  | COM         |
| 665      | LM - Failed to destroy database                                                | PROGFLT  | COM                                  | COM         |
| 666      | LM - Failed to copy active database                                            | PROGFLT  | COM                                  | COM         |
| 667      | LM - Schema upgrade failed                                                     | PROGFLT  | COM                                  | COM         |
| 668      | LM - The database is not active                                                | PROGFLT  | COM                                  | COM         |
| 669      | LM - Replication configuration failed                                          | PROGFLT  | COM                                  | COM         |
| 709      | SCCP - Bind with service provider failed - suId %d                             | PROGFLT  | SP-%c                                | COM         |
| 711      | SCCP - User out of service - switch %d spId %d PC %s ssn %d                    | PROGFLT  | PC-%d-%d-%d-%d-SSN-%d                | COM         |
| 713      | SCCP - Invalid UI event - protocol layer not active - prmtv %d spId %d         | PROGFLT  | SP-%c                                | COM         |
| 716      | SCCP - Invalid LI event - protocol layer not active - prmtv %d suId %d         | PROGFLT  | SP-%c                                | COM         |
| 722      | TCAP - Illegal or inopportune event received - upper SAP is not configured     | PROGFLT  | SP-%c                                | COM         |
| 724      | TCAP - Illegal or inopportune event received - upper protocol layer not active | PROGFLT  | SP-%c                                | COM         |
| 725      | TCAP - Illegal or inopportune event received - lower SAP is not configured     | PROGFLT  | SP-%c                                | COM         |
| 727      | TCAP - Illegal or inopportune event received - lower protocol layer not active | PROGFLT  | SP-%c                                | COM         |
| 737      | TCAP - Lower layer bind NACKed or timed out                                    | PROGFLT  | SP-%c                                | COM         |
| 740      | INAP - Memory allocation for INSAP failed - sapId %d                           | PROGFLT  | SP-%c                                | COM         |
| 741      | INAP - Hash initialization for INSAP failed - sapId %d                         | PROGFLT  | SP-%c                                | COM         |
| 742      | INAP - Memory allocation for bit map failed - sapId %d                         | PROGFLT  | SP-%c                                | COM         |
| 743      | INAP - Memory allocation for TCSAP failed - sapId %d                           | PROGFLT  | SP-%c                                | COM         |
| 750      | INAP - Memory allocation for INSAP list failed                                 | PROGFLT  | SP-%c                                | COM         |
| 751      | INAP - Memory allocation for TCSAP list failed                                 | PROGFLT  | SP-%c                                | COM         |
| 767      | INAP - SAP configuration before general - sapId %d                             | PROGFLT  | SP-%c                                | COM         |
| 769      | INAP - TCSAP configuration before general - sapId %d                           | PROGFLT  | SP-%c                                | COM         |

| Alarm ID | Major Alarm REPT String                                                         | CondType  | Aid                                        | Entity Type |
|----------|---------------------------------------------------------------------------------|-----------|--------------------------------------------|-------------|
| 783      | LMIC - Received a NACK or timed out when configuring INAP TCAP or SCCP          | PROGFLT   | SP-%c                                      | COM         |
| 784      | LMIC - Received a NACK or timed out when binding INAP TCAP or SCCP              | PROGFLT   | SP-%c                                      | COM         |
| 793      | IOM-%d-%s Cell transmission failure - APC to TADM                               | PAINTGRT  | IOM-%d-OC-%d                               | EQPT        |
| 799      | IS-41 - sapId %d cannot be bound to TCAP                                        | PROGFLT   | SP-%c                                      | COM         |
| 826      | IS-41 - Memory alloc for sapId %d with size %d failed                           | PROGFLT   | SP-%c                                      | COM         |
| 827      | IS-41 - Dialog hash list init with %d bins failed for sapId %d                  | DATAFLT   | SP-%c                                      | COM         |
| 828      | IS-41 - Memory alloc for bitmap of size %d failed for sapId %d                  | DATAFLT   | SP-%c                                      | COM         |
| 829      | IS-41 - Invoke hash list init with %d bins failed for sapId %d                  | DATAFLT   | SP-%c                                      | COM         |
| 838      | SP-%c 100baseT signaling interface did not restore in time                      | CSC       | SP-%c                                      | PLK         |
| 843      | Slot 11 in use - Interface 4 on slot 8 or 10 cannot be used                     | PRCDRERR  | IOM-%d                                     | EQPT        |
| 845      | SP-%c software version mismatch - prov %s running %s                            | PRCDRERR  | SP-%c                                      | EQPT        |
| 848      | SP-%c 100baseT management interface did not restore in time                     | OSLINK    | SP-%c                                      | PLK         |
| 851      | SP-%c Invalid input characters on RS232 TL1 craft port                          | DATAFLT   | SP-%c                                      | COM         |
| 855      | SAR on SF-%c Device error                                                       | CONTCOM   | SF-%c                                      | EQPT        |
| 856      | SAR on SF-%c PCI parity - abort fault                                           | CONTBUS   | SF-%c                                      | EQPT        |
| 919      | More than %d percent of trunks in TrkGrp %d are OOS                             | TRKGRPLIM | TGRP-%d                                    | TRK         |
| 923      | ISUP ACC Congestion Level 2                                                     | EXTERR    | COM                                        | COM         |
| 938      | GR303 TMC channel down - IfGrpNum-%d                                            | LAPDIRR   | 303IF-%d                                   | ISDNL<br>2  |
| 940      | GR303 EOC channel down - IfGrpNum-%d                                            | LAPDIRR   | 303IF-%d                                   | ISDNL<br>2  |
| 951      | IOM-%d VOIP PVC-%d endpoint down                                                | GP        | IOM-%d-PVC-%d                              | PLK         |
| 958      | SP-%c lost heartbeat with %s-%d-SP-%c                                           | GP        | MGC-%d-SP-%c<br>or<br>SG-%d-SP-%c          | COM         |
| 960      | SP-%c failover due to IP connectivity fault - SP-%c has %d conns - SP-%c has %d | GP        | MGC-%d-SP-%c<br>or<br>SG-%d-SP-%c          | COM         |
| 961      | SP-%c faulted with status - %s(%d)                                              | INTERR    | SP-%c                                      | EQPT        |
| 969      | MGCP - unable to connect to DNS server                                          | EXT       | COM                                        | COM         |
| 971      | MGCP - SP-%c failed to replicate data type %s - value %s                        | SFT       | SP-%c                                      | COM         |
| 982      | %s Device Error                                                                 | FRMR      | IOM-%d-E1-%d<br>or<br>IOM-%d-STM1-%d-E1-%d | EQPT        |
| 983      | %s Loss of Signal                                                               | LOS       | IOM-%d-E1-%d<br>IOM-%d-STM1-%d-E1-%d       | E1          |

| Alarm ID | Major Alarm REPT String                                                                  | CondType  | Aid                                       | Entity Type |
|----------|------------------------------------------------------------------------------------------|-----------|-------------------------------------------|-------------|
| 985      | %s Loss of Frame                                                                         | LOF       | IOM-%d-E1-%d,<br>IOM-%d-STM1-<br>%d-E1-%d | E1          |
| 987      | %s Alarm Indication Signal                                                               | AIS       | IOM-%d-E1-%d,<br>IOM-%d-STM1-<br>%d-E1-%d | E1          |
| 989      | %s Remote Defect Indication                                                              | RDI       | IOM-%d-E1-%d,<br>IOM-%d-STM1-<br>%d-E1-%d | E1          |
| 991      | %s Alarm Indication Signal (Tu)                                                          | AIS-T     | IOM-%d-STM1-<br>%d-E1-%d                  | E1          |
| 993      | %s Remote Failure Indication (Tu)                                                        | RFI-T     | IOM-%d-STM1-<br>%d-E1-%d                  | E1          |
| 995      | %s Loss of Pointer (Tu)                                                                  | LOP-T     | IOM-%d-STM1-<br>%d-E1-%d                  | E1          |
| 997      | %s Unequipped (Tu)                                                                       | UNEQ-T    | IOM-%d-STM1-<br>%d-E1-%d                  | E1          |
| 999      | %s Loss of Multiframe (Tu)                                                               | LOF       | IOM-%d-STM1-<br>%d-E1-%d                  | E1          |
| 1008     | signaling entity %s did not acknowledge Heartbeat in %d seconds                          | PROGFLT   | SP-%c                                     | COM         |
| 1028     | ISDN - More than %d percent of B-Channels in IntfcId %d are OOS                          | TRKGRPLIM | ISDNIF-%d                                 | ISDNL3      |
| 1032     | CAS - More than %d percent of lines on IntfcId %d are OOS                                | TRKGRPLIM | CAS-IF-%d                                 | PLK         |
| 1037     | MGCP - More than %d percent of lines on IntfcId %d are OOS                               | TRKGRPLIM | MGCP-IF-%d                                | PLK         |
| 1043     | SP-%c Permanent database space threshold exceeded                                        | SFT       | SP-%c                                     | COM         |
| 1045     | SP-%c lost heartbeat with PC-%d-%d-%d-SP-%c                                              | GP        | BOTH-PC-%d-<br>%d-%d                      | COM         |
| 1072     | SP-%c lost local heartbeat on %s interface                                               | CONTCOM   | SP-%c                                     | COM         |
| 1077     | SP-%c Permanent database space threshold low                                             | SFT       | SP-%c                                     | COM         |
| 1081     | SP-%c Terminated                                                                         | MAN       | SP-%c                                     | EQPT        |
| 1083     | IOM-%d-ENET-%d Source IP Address %s is the same as the Mate IP Address                   | MAN       | IOM-%d-ENET-<br>%d                        | ENET        |
| 1092     | Protection SP-%c failed to boot in time                                                  | INTERR    | SP-%c                                     | EQPT        |
| 1094     | Protection SP-%c failed to acknowledge the role negotiation message                      | INTERR    | SP-%c                                     | COM         |
| 1095     | SP-%c lost communication with SP-%c                                                      | CONTCOM   | SP-%c                                     | COM         |
| 1096     | SP-%c failed to receive SP Init message                                                  | INTERR    | SP-%c                                     | COM         |
| 1097     | SP-%c failed to negotiate roles in time                                                  | INTERR    | SP-%c                                     | EQPT        |
| 1105     | %s Payload Mismatch (Tu)                                                                 | PLM       | IOM-%d-STM1-<br>%d-TU12-%d                | E1          |
| 1108     | Operator initiated backup failure                                                        | DBMEMTRF  | COM                                       | COM         |
| 1109     | Scheduled backup failure                                                                 | DBMEMTRF  | COM                                       | COM         |
| 1144     | MGC-MG MEGACO excessive retransmissions %s Port %d to Port %d - IP %s - %d in %d seconds | GP        | CHASSIS                                   | COM         |

| <b>Alarm ID</b> | <b>Major Alarm REPT String</b>                                    | <b>CondType</b> | <b>Aid</b> | <b>Entity Type</b> |
|-----------------|-------------------------------------------------------------------|-----------------|------------|--------------------|
| 1155            | IOM-%d over temperature fault                                     | INT             | IOM-%d     |                    |
| 1172            | SIP - TrkGrp %d Feature Server unavailable %s                     | GP              | COM        | COM                |
| 1175            | SIP - congestion threshold 2 exceeded                             | EXTERR          | COM        | COM                |
| 1176            | IOM-%d database failure using script %s - reason %s -status %d    | INTSFT          | IOM-%d     | EQPT               |
| 1177            | SP-%c 100baseT loss of carrier on signaling access interface      | CSC             | SP-%c      | COM                |
| 1179            | SP-%c 100baseT signaling access interface did not restore in time | CSC             | SP-%c      | COM                |
| 1183            | SLAM - Error synchronizing standby                                | SYNCEQPT        | SP-%c      | EQPT               |
| 1188            | CC - congestion threshold 2 exceeded                              | EXTERR          | COM        | COM                |
| 1196            | ISDN - congestion threshold 2 exceeded                            | EXTERR          | COM        | COM                |

The alarms in the following table could be critical or major alarms depending whether a protection module is available for use. If no protection module is available, the alarm will be a critical alarm. If the IOM has switched to protection, the alarm will be a major alarm.

**Table A-C. Critical/ Major Alarms**

| <b>Alarm ID</b> | <b>Critical/Major Alarm REPT String</b>                          | <b>CondType</b> | <b>Aid</b>     | <b>Entity Type</b> |
|-----------------|------------------------------------------------------------------|-----------------|----------------|--------------------|
| 21              | The Maintenance Link to the module in slot %d failed to go ready | CONTBUS         | IOM-%d         | EQPT               |
| 23              | Module in slot %d timed out while booting                        | INTERR          | IOM-%d         | EQPT               |
| 24              | Module in slot %d failed selftest - Status - %d                  | INTERR          | IOM-%d         | EQPT               |
| 27              | IOM-%d Module CLEI %s does not match provisioned CLEI %s         | PRCDRERR        | IOM-%d         | EQPT               |
| 28              | IOM-%d Module SW Rev %s does not match provisioned SW Rev %s     | PRCDRERR        | IOM-%d         | EQPT               |
| 29              | Module in slot %d failed to read id prom                         | INTERR          | IOM-%d         | EQPT               |
| 30              | Module in slot %d timeout waiting for id prom read               | INTERR          | IOM-%d         | EQPT               |
| 38              | IOM-%d rear module does not match front module                   | PRCDRERR        | IOM-%d-REAR    | EQPT               |
| 45              | Module in slot %d has a TSU or FSU Fault                         | CONTCOM         | IOM-%d         | EQPT               |
| 46              | Module in slot %d has a TSU or FSU MLBA Parity Error             | CONTCOM         | IOM-%d         | EQPT               |
| 47              | Module in slot %d has a MLINK Fault                              | CONTBUS         | IOM-%d         | EQPT               |
| 54              | Module in slot %d failed to go ready                             | CONTCOM         | IOM-%d         | EQPT               |
| 56              | Module in slot %d failed to restore to service                   | CONTCOM         | IOM-%d         | EQPT               |
| 57              | IOM-%d rear module missing                                       | REPLUNITMISS    | IOM-%d-REAR    | EQPT               |
| 58              | Slot %d rear module has been removed                             | REPLUNITMISS    | IOM-%d-REAR    | EQPT               |
| 59              | IOM-%d rear module missing                                       | REPLUNITMISS    | IOM-%d         | EQPT               |
| 60              | Slot %d rear module has been removed                             | REPLUNITMISS    | IOM-%d         | EQPT               |
| 74              | Module in slot %d faulted - %s(%d)                               | INTERR          | IOM-%d         | EQPT               |
| 77              | Module in slot %d timeout while adding                           | INTERR          | IOM-%d         | EQPT               |
| 104             | SP-%c lost heartbeat to %s                                       | PROGFLT         | SP-%c          | COM                |
| 116             | Lost heartbeat with IOM-%d                                       | CONTCOM         | IOM-%d         | EQPT               |
| 127             | IOM-%d is not responding to messages                             | PROGFLT         | IOM-%d         | EQPT               |
| 158             | IOM-%d Receiving Errors from both SFs                            | PAINTGRT        | IOM-%d         | EQPT               |
| 167             | IOM-%d-PORT-%d Device Error                                      | FRMR            | IOM-%d-PORT-%d | EQPT               |
| 170             | IOM-%d - not responding to messages from SP                      | INTMSGERR       | IOM-%d         | COM                |
| 194             | IOM-%d faulted - %s                                              | SFT             | IOM-%d         | EQPT               |
| 195             | IOM-%d Device Error                                              | FRMR            | IOM-%d         | EQPT               |
| 196             | IOM-%d - not responding to messages from SP                      | INTMSGERR       | IOM-%d         | COM                |
| 200             | %s Device Error                                                  | FRMR            | IOM-%d-T3-%d   | EQPT               |
| 218             | %s Device Error                                                  | FRMR            | IOM-%d-STS1-%d | EQPT               |

| Alarm ID | Critical/Major AlarmREPT String                     | CondType | Aid                             | Entity Type |
|----------|-----------------------------------------------------|----------|---------------------------------|-------------|
| 253      | %s Device Error                                     | FRMR     | IOM-%d-%s-PORT-%d               | EQPT        |
| 831      | Module in slot %d timed out during audio download   | INTERR   | IOM-%d                          | EQPT        |
| 832      | Module in slot %d failed during audio download      | INTERR   | IOM-%d                          | EQPT        |
| 834      | Module in slot %d has an IFE or EFE Fault           | CONTCOM  | IOM-%d                          | EQPT        |
| 844      | IOM-%d SwVer-%s is incompatible with SP-%c SwVer-%s | PRCDRERR | IOM-%d                          | EQPT        |
| 870      | %s Device Error                                     | FRMR     | IOM-%d-OC3-%d or IOM-%d-OC12-%d | EQPT        |
| 897      | IOM-%d-ENET-%d Device Error %d                      | FRMR     | IOM-%d-ENET-%d                  | EQPT        |
| 1085     | IOM-%d TSU %s Error -%s                             | CONTCOM  | IOM-%d                          | COM         |
| 1146     | IOM-%d NFS mount of %s disk failed                  | NET      | IOM-%d                          | EQPT        |
| 1148     | IOM-%d CPU-A lost heartbeat to CPU-%c               | PROGFLT  | IOM-%d                          | EQPT        |
| 1149     | %s terminated - status %d                           | PROGFLT  | IOM-%d                          | EQPT        |
| 1150     | %s failed to start                                  | INTERR   | IOM-%d                          | EQPT        |
| 1152     | %s failed to restart                                | INTERR   | IOM-%d                          | EQPT        |
| 1154     | %s not restarted, limit has been exceeded           | INTERR   | IOM-%d                          | EQPT        |
|          |                                                     |          |                                 |             |

Table A-D. Minor Alarms

| Alarm ID | Minor Alarm REPT String                                            | CondType   | Aid                                    | Entity Type |
|----------|--------------------------------------------------------------------|------------|----------------------------------------|-------------|
| 7        | SP-%c 100baseT craft interface failure                             | IOTERM     | SP-%c                                  | EQPT        |
| 39       | Power Source %c lost voltage                                       | PWR        | Power-%c                               | EQPT        |
| 40       | Power Source %c on %s lost voltage                                 | PWR        | Power-%c                               | EQPT        |
| 76       | Module in slot %d - not operational but provisioned as in-service  | INTERR     | IOM-%d                                 | EQPT        |
| 79       | Module in Slot %d present but not provisioned                      | PRCDRERR   | IOM-%d                                 | EQPT        |
| 92       | SP-%c disk space threshold crossed on %s - Usage %.2f              | PROCROVLD  | SP-%c                                  | COM         |
| 180      | IOM-%d-PORT-%d Internal Loopback test failure                      | LOOPTERM   | IOM-%d-PORT-%d                         | T1          |
| 182      | IOM-%d-PORT-%d External Loopback test failure                      | EXT        | IOM-%d-PORT-%d                         | T1          |
| 287      | IOM-%d - BITS timing voting error                                  | INTERR     | IOM-%d                                 | EQPT        |
| 289      | TMG-%c - Loss of Signal to BITS Input %c                           | LOS        | TMG-%c                                 | T1          |
| 291      | TMG-%c - Loss of Frame to BITS Input %c                            | LOF        | TMG-%c                                 | T1          |
| 293      | TMG-%c - Alarm Indication Signal on BITS Input %c                  | AIS        | TMG-%c                                 | T1          |
| 296      | TMG-%c - Clock in Holdover                                         | HLDOVRSYNC | TMG-%c                                 | EQPT        |
| 298      | TMG-%c - Clock in FreeRun                                          | FRNGSYNC   | TMG-%c                                 | EQPT        |
| 326      | %s signaling msg router buffer alloc failed - cause %d             | PROGFLT    | SP-%c or IOM-%d                        | COM         |
| 330      | SP-%c PSF %d general alarm - cause %d                              | PROGFLT    |                                        | COM         |
| 335      | SP-%c to %s relay channel %d congestion overflow                   | PROGFLT    | SP-%c or IOM-%d                        | COM         |
| 353      | MTP3 - link failed - linkId %d on %s                               | CCSNETIRR  | SLK-%d                                 | SLK         |
| 367      | MTP3 - rmtly blkd LSSU - linkId %d on %s                           | CCSNETIRR  | SLK-%d                                 | SLK         |
| 469      | ISUP - number of call references exceeded                          | INTSFT     | COM                                    | COM         |
| 470      | ISUP - unable to allocate memory for a conn cntrl blk              | INTSFT     | COM                                    | COM         |
| 539      | More than %d percent of the trunks to DPC %s are OOS               | TRKGRPLIM  | PC-%d-%d-%d                            | TRK         |
| 555      | More than %d percent of the trunks or lines in route %s are OOS    | TRKGRPLIM  | RT-%s                                  | TRK         |
| 567      | LAPD - Link down - IntfcId %d linkId %d on %s                      | LAPDIRR    | ISDNIF-%d-LNK-%d                       | ISDNL2      |
| 635      | %s ILMI down                                                       | ILMIERR    | ILMI-IOM-%d-OC-%d or ILMI-IOM-%d-T3-%d | PLK         |
| 672      | STATS - SP-%c connection failed - %s                               | OSLINK     | SP-%c                                  | PLK         |
| 678      | STATS - SP-%c error no free space in record buffer file            | PROGFLT    | SP-%c                                  | COM         |
| 684      | BILLING - SP-%c connection failed - %s                             | AMATLINK   | SP-%c                                  | PLK         |
| 690      | BILLING - SP-%c error no free space in record buffer file          | PROGFLT    | SP-%c                                  | COM         |
| 791      | IOM-%d-%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded | INC        | IOM-%d-OC-%d                           | PLK         |

| Alarm ID | Minor Alarm REPT String                                                    | CondType   | Aid                             | Entity Type |
|----------|----------------------------------------------------------------------------|------------|---------------------------------|-------------|
| 839      | Module in slot %d is unprotected                                           | PROTNA     | IOM-%d                          | EQPT        |
| 846      | SP-%c software version %s not on disk                                      | PRCDRERR   | SP-%c                           | EQPT        |
| 847      | %s ECC single bit error threshold crossed                                  | DATAFLT    | SP-%c or IOM-%d                 | EQPT        |
| 849      | Standby SP-%c version-%s is incompatible with Active SP-%c                 | PRCDRERR   | SP-%c                           | EQPT        |
| 853      | SP-%c security log is 90 percent full                                      | SECBUFTHEX | SP-%c                           | SECU        |
| 857      | SAR on SF-%c Parity error on Port to SAR bus                               | CONTBUS    | SF-%c                           | EQPT        |
| 858      | SAR on SF-%c Synchronization error on Port to SAR bus                      | CONTBUS    | SF-%c                           | EQPT        |
| 874      | %s Initializing                                                            | PROTNA     | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 881      | IOM-%d - Line Timing Out-of-Service                                        | SYNCOOS    | IOM-%d                          | T1          |
| 886      | IOM-%d-%s Initializing                                                     | PROTNA     | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 901      | MTP3 - link util for 1min period above thresh - linkId %d util %d percent  | SLCR       | SLK-%d                          | SLK         |
| 903      | MTP3 - link util for 5min period above thresh - linkId %d util %d percent  | SLCR       | SLK-%d                          | SLK         |
| 905      | MTP3 - link util for 15min period above thresh - linkId %d util %d percent | SLCR       | SLK-%d                          | SLK         |
| 918      | More than %d percent of trunks in TrkGrp %d are OOS                        | TRKGRPLIM  | TGRP-%d                         | TRK         |
| 922      | ISUP ACC Congestion Level 1                                                | EXTERR     | COM                             | COM         |
| 928      | PVCID %s-%d receiving T1 AIS sending AIS on %s                             | AIS        | PVC-%d-%d-%d-%d-%d              | PLK         |
| 929      | PVCID %s-%d receiving T1 RAI sending RAI on %s                             | RAI        | PVC-%d-%d-%d-%d-%d              | PLK         |
| 935      | SP-%c Temporary database space threshold exceeded                          | SFT        | SP-%c                           | COM         |
| 942      | GR303 TMC protection channel down - IfGrpNum-%d                            | LAPDIRR    | 303IF-%d                        | ISDNL2      |
| 944      | GR303 EOC protection channel down - IfGrpNum-%d                            | LAPDIRR    | 303IF-%d                        | ISDNL2      |
| 956      | MG overload detected CPU usage %d                                          | EXT        | COM                             | COM         |
| 962      | SP-%c resource %s usage threshold - %d used of %d                          | SFT        | SP-%c                           | COM         |
| 965      | TMG-%c clock drift condition                                               | INTERR     | SP-%c                           | EQPT        |
| 967      | Chassis not synchronized with NTP Server %s or %s                          | EXT        | COM                             | COM         |
| 972      | MGCP - gateway %s IP %s unreachable                                        | EXT        | COM                             | COM         |
| 974      | %s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded                | INC        | IOM-%d-T3-%d                    | T3          |
| 1024     | IOM-%d-PVC-%d bandwidth exceeded                                           | GP         | IOM-%d-PVC-%d                   | PLK         |
| 1026     | ISDN - More than %d percent of B-Channels in IntfcId %d are OOS            | TRKGRPLIM  | ISDNIF-%d                       | ISDNL3      |



| Alarm ID | Minor Alarm REPT String                                    | CondType  | Aid            | Entity Type |
|----------|------------------------------------------------------------|-----------|----------------|-------------|
| 1030     | CAS - More than %d percent of lines on IntfcId %d are OOS  | TRKGRPLIM | CAS-IF-%d      | PLK         |
| 1035     | MGCP - More than %d percent of lines on IntfcId %d are OOS | TRKGRPLIM | MGCP-IF-%d     | PLK         |
| 1049     | SMDI - Voice Mail Link Down - MSRID %d smdiLnkId %d - %s   | REMLINK   | SMDI-LNK-%d-%d | LINK        |
| 1053     | IOM-%d - Line Timing Out-of-Service                        | SYNCOOS   | IOM-%d         | E1          |
| 1060     | TMG-%c - Loss of Signal to BITS Input %c                   | LOS       | TMG-%c         | E1          |
| 1062     | TMG-%c - Loss of Frame to BITS Input %c                    | LOF       | TMG-%c         | E1          |
| 1064     | TMG-%c - Alarm Indication Signal on BITS Input %c          | AIS       | TMG-%c         | E1          |
| 1071     | %s - IP-%s is unreachable                                  | GP        | COM            | COM         |
| 1075     | SP-%c Temporary database space threshold low               | SFT       | SP-%c          | COM         |
| 1079     | SF-%c ASX-%d FAC Threshold Crossed %d Min FAC %d           | T-FAC     | SF-%c          | EQPT        |
| 1086     | SP-%c - EMS connectivity failure - IP-%s                   | EXT       | SP-%c          | COM         |
| 1174     | SIP - congestion threshold 1 exceeded                      | EXTERR    | COM            | COM         |
| 1195     | ISDN - congestion threshold 1 exceeded                     | EXTERR    | COM            | COM         |

Table A-E. Informational Messages

| Alarm ID | Information Message REPT String                         | CondType | Aid            | Entity Type |
|----------|---------------------------------------------------------|----------|----------------|-------------|
| 10       | SP-%c 100baseT carrier restored on SP to SP interface   | NORMAL   | SP-%c          | PLK         |
| 13       | SP-%c 100baseT carrier restored on signaling interface  | NORMAL   | SP-%c          | PLK         |
| 16       | SP-%c 100baseT carrier restored on management interface | NORMAL   | SP-%c          | PLK         |
| 42       | Power Source %c voltage restored                        | NORMAL   | Power-%c       | EQPT        |
| 43       | Power Source %c on %s voltage restored                  | NORMAL   | Power-%c       | EQPT        |
| 49       | Fan unit or fuse fault has been cleared                 | NORMAL   | Fan            | EQPT        |
| 51       | Chassis over temperature fault cleared                  | NORMAL   | Fan            | EQPT        |
| 89       | SP-%c cpu threshold alarm cleared                       | NORMAL   | SP-%c          | COM         |
| 91       | SP-%c memory threshold alarm cleared                    | NORMAL   | SP-%c          | COM         |
| 93       | SP-%c disk space threshold alarm cleared on %s          | NORMAL   | SP-%c          | COM         |
| 99       | All processes are synchronized to the Protection SP     | NORMAL   | SP-%c          | COM         |
| 122      | IOM-%d cpu threshold cleared                            | NORMAL   | IOM-%d         | EQPT        |
| 124      | IOM-%d memory threshold cleared                         | NORMAL   | IOM-%d         | EQPT        |
| 126      | IOM-%d RAM disk threshold cleared on %s                 | NORMAL   | IOM-%d         | EQPT        |
| 129      | The TL1 Agent had a problem parsing a message           | DATAFLT  | SP-%c          | COM         |
| 130      | The TL1 Agent had a formatting error                    | DATAFLT  | SP-%c          | COM         |
| 133      | The Incoming data buffer is too big for the TL1 Agent   | DATAFLT  | SP-%c          | COM         |
| 168      | IOM-%d-PORT-%d Edited Out-of-Service                    | MAN      | IOM-%d-PORT-%d | T1          |
| 172      | IOM-%d-PORT-%d Loss of Signal cleared                   | NORMAL   | IOM-%d-PORT-%d | T1          |
| 174      | IOM-%d-PORT-%d Loss of Frame cleared                    | NORMAL   | IOM-%d-PORT-%d | T1          |
| 176      | IOM-%d-PORT-%d Alarm Indication Signal cleared          | NORMAL   | IOM-%d-PORT-%d | T1          |
| 178      | IOM-%d-PORT-%d Remote Alarm Indication cleared          | NORMAL   | IOM-%d-PORT-%d | T1          |
| 181      | IOM-%d-PORT-%d Internal Loopback test failure cleared   | NORMAL   | IOM-%d-PORT-%d | T1          |
| 183      | IOM-%d-PORT-%d External Loopback test failure cleared   | NORMAL   | IOM-%d-PORT-%d | T1          |
| 189      | IOM-%d-Port-%d Loopback Uninhibited                     | NORMAL   | IOM-%d-PORT-%d | T1          |
| 198      | %s Edited Out-of-Service                                | MAN      | IOM-%d-T3-%d   | T3          |
| 199      | %s Deleted                                              | MAN      | IOM-%d-T3-%d   | T3          |
| 202      | %s Loss of Signal cleared                               | NORMAL   | IOM-%d-T3-%d   | T3          |
| 204      | %s Loss of Frame cleared                                | NORMAL   | IOM-%d-T3-%d   | T3          |
| 206      | %s Alarm Indication Signal cleared                      | NORMAL   | IOM-%d-T3-%d   | T3          |
| 208      | %s Remote Alarm Indication cleared                      | NORMAL   | IOM-%d-T3-%d   | T3          |
| 214      | %s Loopback Uninhibited                                 | NORMAL   | IOM-%d-T3-%d   | T3          |

| Alarm ID | Information Message REPT String             | CondType | Aid               | Entity Type |
|----------|---------------------------------------------|----------|-------------------|-------------|
| 216      | %s Edited Out-of-Service                    | MAN      | IOM-%d-STs1-%d    | STs1        |
| 217      | %s Deleted                                  | MAN      | IOM-%d-STs1-%d    | STs1        |
| 220      | %s Loss of Signal cleared                   | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 222      | %s Loss of Frame cleared                    | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 224      | %s Alarm Indication Signal (Path) cleared   | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 226      | %s Remote Defect Indication (Path) cleared  | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 228      | %s Alarm Indication Signal (Line) cleared   | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 230      | %s Remote Defect Indication (Line) cleared  | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 232      | %s Loss of Pointer (Path) cleared           | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 234      | %s Unequipped cleared (Path)                | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 236      | %s Payload Mismatch (Path) cleared          | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 238      | %s Remote Failure Indication (Path) cleared | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 240      | %s Remote Failure Indication (Line) cleared | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 242      | %s Trace Id Mismatch cleared                | Normal   | IOM-%d-STs1-%d    | STs1        |
| 244      | %s Payload Defect Indication (Path) cleared | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 246      | %s Parity Error cleared                     | NORMAL   | IOM-%d-STs1-%d    | STs1        |
| 251      | %s Edited Out-of-Service                    | MAN      | IOM-%d-%s-PORT-%d | T1          |
| 252      | %s Deleted                                  | MAN      | IOM-%d-%s-PORT-%d | T1          |
| 255      | %s Loss of Signal cleared                   | NORMAL   | IOM-%d-%s-PORT-%d | T1          |
| 257      | %s Loss of Frame cleared                    | NORMAL   | IOM-%d-%s-PORT-%d | T1          |
| 259      | %s Alarm Indication Signal cleared          | NORMAL   | IOM-%d-%s-PORT-%d | T1          |
| 261      | %s Remote Alarm Indication cleared          | NORMAL   | IOM-%d-%s-PORT-%d | T1          |
| 263      | %s Alarm Indication Signal (Vt) cleared     | NORMAL   | IOM-%d-%s-PORT-%d | T1          |

| Alarm ID | Information Message REPT String                              | CondType  | Aid               | Entity Type |
|----------|--------------------------------------------------------------|-----------|-------------------|-------------|
| 265      | %s Remote Defect Indication (Vt) cleared                     | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 267      | %s Loss of Pointer (Vt) cleared                              | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 269      | %s Unequipped (Vt) cleared                                   | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 271      | %s Payload Mismatch (Vt) cleared                             | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 273      | %s Remote Defect Indication (Vt) cleared                     | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 275      | %s Paylod Defect Indication (Vt) cleared                     | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 283      | %s Loopback Uninhibited                                      | NORMAL    | IOM-%d-%s-PORT-%d | T1          |
| 286      | IOM-%d - BITS incorrect clock source cleared                 | NORMAL    | IOM-%d            | EQPT        |
| 288      | IOM-%d - BITS timing voting error cleared                    | NORMAL    | IOM-%d            | EQPT        |
| 290      | TMG-%c - Loss of Signal to BITS Input %c cleared             | NORMAL    | TMG-%c            | T1          |
| 292      | TMG-%c - Loss of Frame to BITS Input %c cleared              | NORMAL    | TMG-%c            | T1          |
| 294      | TMG-%c - Alarm Indication Signal on BITS Input %c cleared    | NORMAL    | TMG-%c            | T1          |
| 297      | TMG-%c - Clock in Holdover cleared                           | NORMAL    | TMG-%c            | EQPT        |
| 299      | TMG-%c - Clock in FreeRun cleared                            | NORMAL    | TMG-%c            | EQPT        |
| 301      | All BITS Inputs have failed cleared                          | NORMAL    | TMG-%c            | T1          |
| 303      | No BITS Inputs are provisioned cleared                       | NORMAL    |                   | EQPT        |
| 308      | TMG-%c - Clock state changed from %s to %s                   | NORMAL    | TMG-%c            | EQPT        |
| 310      | TMG-%c - Hardware failure cleared                            | NORMAL    | SP-%c             | EQPT        |
| 318      | SP-%c Sys-Mngr duplicate command - cause %d                  | PROGFLT   | SP-%c             | COM         |
| 322      | %s signaling msg router received invalid event - cause %d    | INTMSGERR | SP-%c or IOM-%d   | COM         |
| 324      | %s signaling msg router received invalid procid - cause %d   | PROGFLT   | SP-%c or IOM-%d   | COM         |
| 325      | %s signaling msg router received timer resolution - cause %d | PROGFLT   | SP-%c or IOM-%d   | COM         |
| 327      | SP-%c PSF %d invalid timer expire - cause %d                 | PROGFLT   | SP-%c             | COM         |
| 334      | SP-%c to %s relay channel %d congestion detected             | PROGFLT   | SP-%c or IOM-%d   | COM         |
| 337      | SP-%c to %s relay channel %d congestion clear                | NORMAL    | SP-%c             | COM         |
| 338      | SP-%c to %s relay channel %d processor up                    | NORMAL    | SP-%c or IOM-%d   | COM         |
| 339      | MTP2 - mgmt init - disabling layer 1 - linkId %d on %s       | MAN       | SLK-%d            | SLK         |
| 340      | MTP2 - disconnect on layer 1 - linkId %d on %s               | INT       | SLK-%d            | SLK         |
| 341      | MTP2 - rcvd data cfm from MAC lyr - linkId %d on %s          | INT       | SLK-%d            | SLK         |
| 342      | MTP2 - link alignment lost - linkId %d on %s                 | CCSNETIRR | SLK-%d            | SLK         |
| 343      | MTP2 - link aligned - linkId %d on %s                        | NORMAL    | SLK-%d            | SLK         |

| Alarm ID | Information Message REPT String                                | CondType  | Aid          | Entity Type |
|----------|----------------------------------------------------------------|-----------|--------------|-------------|
| 344      | MTP2 - mgmt init - entered cong - linkId %d on %s              | MAN       | SLK-%d       | SLK         |
| 345      | MTP2 - entered cong - linkId %d on %s                          | SLCR      | SLK-%d       | SLK         |
| 346      | MTP2 - mgmt init - ending cong - linkId %d on %s               | MAN       | SLK-%d       | SLK         |
| 347      | MTP2 - cong ended - linkId %d on %s                            | NORMAL    | SLK-%d       | SLK         |
| 348      | MTP2 - retransmit queue full condition - linkId %d on %s       | SLCT      | SLK-%d       | SLK         |
| 349      | MTP2 - retransmit queue full condition over - linkId %d on %s  | NORMAL    | SLK-%d       | SLK         |
| 350      | MTP2 - rmt end cong started - linkId %d on %s                  | SLCR      | SLK-%d       | SLK         |
| 351      | MTP2 - rmt cong ended - linkId %d on %s                        | NORMAL    | SLK-%d       | SLK         |
| 352      | MTP3 - T17 exprd - align failure - reattempt - linkId %d on %s | CCSNETIRR | SLK-%d       | SLK         |
| 356      | MTP3 - bind fail - linkId %d on %s                             | PROGFLT   | SLK-%d       | SLK         |
| 370      | MTP3 - mgmt init - locally blkd - linkId %d on %s              | MAN       | SLK-%d       | SLK         |
| 371      | MTP3 - mgmt init - locally unblkd - linkId %d on %s            | MAN       | SLK-%d       | SLK         |
| 376      | MTP2 - discard due to cong - linkId %d on %s                   | SLCR      | SLK-%d       | SLK         |
| 377      | MTP2 - negative ack rcvd from rmt end - linkId %d on %s        | CCSNETIRR | SLK-%d       | SLK         |
| 378      | MTP2 - delayed data req ack rcvd - linkId %d on %s             | CCSNETIRR | SLK-%d       | SLK         |
| 379      | MTP2 - rmt processor outage rcvd - linkId %d on %s             | REMLINK   | SLK-%d       | SLK         |
| 396      | MTP3 - data dropped - inv msg len rcvd - linkId %d on %s       | CCSNETIRR | SLK-%d       | SLK         |
| 397      | MTP3 - data dropped - invalid msg frmt - linkId %d on %s       | CCSNETIRR | SLK-%d       | SLK         |
| 398      | MTP3 - data dropped - invalid msg len - linkId %d on %s        | CCSNETIRR | SLK-%d       | SLK         |
| 399      | MTP3 - data dropped - mgmt rcvd - unknown PC - linkId %d on %s | CCSNETIRR | SLK-%d       | SLK         |
| 401      | MTP3 - invalid SLC rcvd in SLTA msg - linkId %d on %s          | CCSNETIRR | SLK-%d       | SLK         |
| 405      | MTP2 - invalid upper intfc evnt - invalid SpId                 | MMR       | COM          | COM         |
| 406      | MTP2 - invalid upper intfc evnt - invalid state                | MMR       | COM          | COM         |
| 407      | MTP2 - invalid upper intfc evnt - invalid SuId                 | MMR       | COM          | COM         |
| 408      | MTP2 - MTP2 evnt rcvd for an unknown primitive                 | MMR       | COM          | COM         |
| 409      | MTP3 - unknown evnt rcvd at MTP3 intfc                         | MMR       | COM          | COM         |
| 412      | MTP3 - msg rcvd with invalid status - action field             | MMR       | COM          | COM         |
| 413      | MTP3 - msg rcvd - invalid SuId - non-existent SAP              | MMR       | COM          | COM         |
| 414      | MTP3 - not in buf rtrvl state                                  | BUFR      | COM          | COM         |
| 416      | MTP3 - unbound SAP - invalid SIO-SLS in msg                    | MMR       | COM          | COM         |
| 417      | MTP3 - invalid SpId - non-existent SAP in msg                  | MMR       | COM          | COM         |
| 418      | MTP3 - invalid parameter value received from user for service  | MMR       | COM          | COM         |
| 419      | MTP3 - PAUSE inv point code - PC %s                            | CCSNETIRR | COM          | COM         |
| 423      | MTP3 - user part unavailable at rmt - PC %s                    | EXT       | PC-%s        | COM         |
| 425      | ISUP - unblk rcvd in idle state - PC %s - CIC %d               | EXTERR    | PC-%s-CIC-%d | TRK         |
| 426      | ISUP - ckt state mismatch - PC %s - CIC %d                     | GP        | PC-%s-CIC-%d | TRK         |
| 427      | ISUP - CGU msg rcvd - reset awaited - PC %s - CIC %d           | GP        | PC-%s-CIC-%d | TRK         |
| 428      | ISUP - CGB msg rcvd with diff range - PC %s - CIC %d           | GP        | PC-%s-CIC-%d | TRK         |

| Alarm ID | Information Message REPT String                           | CondType  | Aid          | Entity Type |
|----------|-----------------------------------------------------------|-----------|--------------|-------------|
| 429      | ISUP - conn req rcvd on busy ckt - PC %s - CIC %d         | GP        | PC-%s-CIC-%d | TRK         |
| 430      | ISUP - evnt rcvd - ckt rmt blked - PC %s - CIC %d         | GP        | PC-%s-CIC-%d | TRK         |
| 431      | ISUP - evnt rcvd on ckt - no conn - PC %s - CIC %d        | GP        | PC-%s-CIC-%d | TRK         |
| 432      | ISUP - invalid evnt rcvd - PC %s - CIC %d                 | MMR       | PC-%s-CIC-%d | TRK         |
| 435      | ISUP - unexp ckt grp blk ack rcvd - PC %s - CIC %d        | GP        | PC-%s-CIC-%d | TRK         |
| 436      | ISUP - unexp ckt grp unblk ack rcvd - PC %s - CIC %d      | GP        | PC-%s-CIC-%d | TRK         |
| 437      | ISUP - invalid ckt grp blk req rcvd - PC %s - CIC %d      | GP        | PC-%s-CIC-%d | TRK         |
| 441      | ISUP - timer T12 inactive at rmt end - PC %s - CIC %d     | EXTERR    | PC-%s-CIC-%d | TRK         |
| 442      | ISUP - timer T14 inactive at rmt end - PC %s - CIC %d     | EXTERR    | PC-%s-CIC-%d | TRK         |
| 443      | ISUP - timer T16 inactive at rmt end - PC %s - CIC %d     | EXTERR    | PC-%s-CIC-%d | TRK         |
| 444      | ISUP - REL with auto cong lvl1 rcvd - PC %s - CIC %d      | GP        | PC-%s-CIC-%d | TRK         |
| 445      | ISUP - REL with auto cong lvl2 rcvd - PC %s - CIC %d      | GP        | PC-%s-CIC-%d | TRK         |
| 446      | ISUP - invalid range specified - PC %s - CIC %d           | EXTERR    | PC-%s-CIC-%d | TRK         |
| 453      | ISUP - req rcvd for an invalid SpId                       | INTMSGERR | PC-%s        | COM         |
| 455      | ISUP - ckt req rcvd with invalid addrs                    | INTMSGERR | PC-%s        | COM         |
| 456      | ISUP - suInstId mismatch                                  | INTMSGERR | PC-%s        | COM         |
| 457      | ISUP - connect req specified with no ckt specified        | INTMSGERR | PC-%s        | COM         |
| 458      | ISUP - msg rcvd on unequipped ckt - PC %s - CIC %d        | INTMSGERR | PC-%s        | COM         |
| 459      | ISUP - evnt rcvd on an upper SAP for an unbound lower SAP | INTSFT    | PC-%s        | COM         |
| 460      | ISUP - connect req rcvd for an unconfig intfc             | INTSFT    | PC-%s        | COM         |
| 461      | ISUP - unknown instance ID in user req                    | INTMSGERR | PC-%s        | COM         |
| 462      | ISUP - connect req rcvd for an unavail intfc              | INTMSGERR | PC-%s        | COM         |
| 463      | ISUP - msg rcvd from SCCP on an unconfigured SAP          | INTSFT    | PC-%s        | COM         |
| 464      | ISUP - invalid variant passed                             | INTSFT    | PC-%s        | COM         |
| 466      | ISUP - connect req with invalid cdpty                     | EXTERR    | PC-%s        | COM         |
| 467      | ISUP - connect req with invalid transit network selector  | EXTERR    | PC-%s        | COM         |
| 474      | IW - invalid SAP ID rcvd                                  | INTMSGERR | COM          | COM         |
| 475      | IW - invalid CID rcvd                                     | INTMSGERR | COM          | COM         |
| 476      | IW - invalid parm val rcvd                                | INTMSGERR | COM          | COM         |
| 477      | IW - invalid SAP ID rcvd                                  | INTMSGERR | COM          | COM         |
| 478      | IW - Bind failure                                         | INTSFT    | COM          | COM         |
| 483      | IW - invalid destn SAP for a proto lyr                    | INTMSGERR | COM          | COM         |
| 484      | IW - invalid SAP ID rcvd - RM                             | INTMSGERR | COM          | COM         |
| 485      | IW - unbound SAP ID rcvd - RT                             | INTMSGERR | COM          | COM         |
| 486      | IW - invalid SAP ID rcvd - SF                             | INTMSGERR | COM          | COM         |
| 488      | CC - REL timer for a conn exprd                           | GP        | COM          | COM         |
| 490      | CC - connID insertion failure into SuInst hash tbl        | INTSFT    | COM          | COM         |
| 491      | CC - connID insertion failure into SpInst hash tbl        | INTSFT    | COM          | COM         |
| 492      | CC - connID lookup failure into SuInst hash tbl           | INTSFT    | COM          | COM         |
| 493      | CC - connID lookup failure into SpInst hash tbl           | INTSFT    | COM          | COM         |

| Alarm ID | Information Message REPT String                               | CondType  | Aid          | Entity Type |
|----------|---------------------------------------------------------------|-----------|--------------|-------------|
| 494      | CC - lookup failure of intfc ID in the intfc hash tbl         | INTSFT    | COM          | COM         |
| 495      | CC - invalid RM SAP rcvd                                      | INTSFT    | COM          | COM         |
| 496      | CC - invalid RT SAP rcvd                                      | INTSFT    | COM          | COM         |
| 497      | CC - invalid SF SAP rcvd                                      | INTSFT    | COM          | COM         |
| 498      | CC - evnt map failure between 2 nrwband ISDN intfcs           | INTSFT    | COM          | COM         |
| 499      | CC - evnt map failure between 2 nrwband DSS1 intfcs           | INTSFT    | COM          | COM         |
| 500      | CC - evnt map failure from nrwband DSS1 to nrwband ISDN intfc | INTSFT    | COM          | COM         |
| 501      | CC - evnt map failure from nrwband ISDN to nrwband DSS1 intfc | INTSFT    | COM          | COM         |
| 502      | RT - invalid rter SAP rcvd in a bnd rte or mnt req            | INTSFT    | COM          | COM         |
| 503      | RT - mntstat or cntrl req rcvd for an invalid intfc           | INTSFT    | COM          | COM         |
| 504      | RT - rte or mtstat req rcvd for an invalid SAP                | INTSFT    | COM          | COM         |
| 506      | SF unconfigured SAP                                           | INTSFT    | COM          | COM         |
| 507      | SF unbound SAP                                                | INTSFT    | COM          | COM         |
| 508      | IW - REL rcvd for suConnid-spConnId is 0                      | INTMSGERR | COM          | COM         |
| 509      | IW - call control SAP not found for CID SWTCH and SSF         | INTSFT    | COM          | COM         |
| 510      | IW - rsrc for ISUP SAP unavail - invalid ISUP SAP             | INTSFT    | COM          | COM         |
| 511      | IW - rsrc for ISUP SAP unavail - invalid SAP                  | INTSFT    | COM          | COM         |
| 512      | IW - rsrc for ISUP SAP unavail - invalid SWTCH                | INTSFT    | COM          | COM         |
| 513      | IW - cntrl blk not found during group maint REL               | INTSFT    | COM          | COM         |
| 514      | IW - cntrl blk not found during group maint procedure         | INTSFT    | COM          | COM         |
| 515      | IW - SAP corrsp to suID from the ISUP intfc not found         | INTSFT    | COM          | COM         |
| 516      | IW - null connection ptr of a ckt cntrl blk                   | INTSFT    | COM          | COM         |
| 517      | IW - invalid suConnId rcvd from ISUP                          | INTSFT    | COM          | COM         |
| 518      | IW - invalid rsrc ptr rcvd in alloc cfm                       | INTSFT    | COM          | COM         |
| 519      | IW - alloc req to RM failed                                   | INTSFT    | COM          | COM         |
| 520      | IW - invalid ckt conn cntrl blk                               | INTSFT    | COM          | COM         |
| 521      | IW - invalid SAP cntrl blk to spId rcvd from CC intfc         | INTMSGERR | COM          | COM         |
| 522      | IW - invalid evnt rcvd in status req from CC user             | INTMSGERR | COM          | COM         |
| 523      | IW - primitive rcvd on an unbound CC SAP                      | INTMSGERR | COM          | COM         |
| 524      | IW - invalid CC ID                                            | INTSFT    | COM          | COM         |
| 525      | IW - invalid CC suConnId rcvd by CC user                      | INTMSGERR | COM          | COM         |
| 526      | IW - wrong intfc supplied in RM DPC %s                        | INTSFT    | PC-%s        | COM         |
| 527      | IW - failed search for a lower SAP for variant                | INTSFT    | COM          | COM         |
| 528      | IW - maint release timer expiry                               | INTSFT    | COM          | COM         |
| 530      | QW - invalid SAP ID                                           | INTMSGERR | COM          | COM         |
| 531      | QW - invalid D channel                                        | INTSFT    | COM          | COM         |
| 532      | QW - invalid call ID                                          | INTSFT    | COM          | COM         |
| 534      | ISUP - Timer T%d expired - PC %s - CIC %d                     | GP        | PC-%s-CIC-%d | TRK         |
| 535      | rcvd unknown UAC %d                                           | GP        | COM          | COM         |
| 541      | Less than %d percent of the trunks to DPC %s are OOS          | NORMAL    | PC-%d-%d-%d  | TRK         |

| Alarm ID | Information Message REPT String                                    | CondType | Aid                   | Entity Type |
|----------|--------------------------------------------------------------------|----------|-----------------------|-------------|
| 542      | Less than %d percent of the trunks to DPC %s are OOS               | NORMAL   | PC-%d-%d-%d           | TRK         |
| 543      | DPC %s - CIC %d locally blocked                                    | MAN      | PC-%d-%d-%d-CIC-%d    | TRK         |
| 544      | DPC %s - CIC %d remotely blocked                                   | MAN      | PC-%d-%d-%d-CIC-%d    | TRK         |
| 545      | DPC %s - CIC %d locally unblocked                                  | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 546      | DPC %s - CIC %d remotely unblocked                                 | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 547      | DPC %s - CIC %d - Range %d locally blocked                         | MAN      | PC-%d-%d-%d-CIC-%d    | TRK         |
| 548      | DPC %s - CIC %d - Range %d remotely blocked                        | MAN      | PC-%d-%d-%d-CIC-%d    | TRK         |
| 549      | DPC %s - CIC %d - Range %d locally unblocked                       | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 550      | DPC %s - CIC %d - Range %d remotely unblocked                      | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 551      | DPC %s - CIC %d locally reset                                      | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 552      | DPC %s - CIC %d remotely reset                                     | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 553      | DPC %s - CIC %d - Range %d locally reset                           | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 554      | DPC %s - CIC %d - Range %d remotely reset                          | NORMAL   | PC-%d-%d-%d-CIC-%d    | TRK         |
| 557      | Less than %d percent of the trunks or lines in route %s are OOS    | NORMAL   | RT-%s                 | TRK         |
| 565      | LAPD - Exiting congestion - IntfcId %d linkId %d on %s             | NORMAL   | ISDNIF-%d-LNK-%d      | ISDNL2      |
| 568      | LAPD - Protocol error - IntfcId %d linkId %d on %s                 | LAPDIRR  | ISDNIF-%d-LNK-%d      | ISDNL2      |
| 569      | LAPD - Invalid remove - IntfcId %d linkId %d on %s                 | PROGFLT  | ISDNIF-%d-LNK-%d      | ISDNL2      |
| 570      | LAPD - Sap is unbound - IntfcId %d linkId %d on %s                 | PROGFLT  | ISDNIF-%d-LNK-%d      | ISDNL2      |
| 571      | LAPD - Timer T200 expired N200 times - IntfcId %d linkId %d on %s  | LAPDIRR  | ISDNIF-%d-LNK-%d      | ISDNL2      |
| 574      | ISDN bearer channel up - IntfcId %d linkId %d chanId %d on %s      | NORMAL   | ISDNIF-%d-LNK-%d-B-%d | COM         |
| 575      | ISDN bearer channel down - IntfcId %d linkId %d chanId %d on %s    | GP       | ISDNIF-%d-LNK-%d-B-%d | COM         |
| 576      | ISDN bearer channel enable - IntfcId %d linkId %d chanId %d on %s  | NORMAL   | ISDNIF-%d-LNK-%d-B-%d | COM         |
| 577      | ISDN bearer channel disable - IntfcId %d linkId %d chanId %d on %s | GP       | ISDNIF-%d-LNK-%d-B-%d | COM         |



| Alarm ID | Information Message REPT String                                             | CondType  | Aid              | Entity Type |
|----------|-----------------------------------------------------------------------------|-----------|------------------|-------------|
| 578      | Q931 - Invalid connection endpoint - IntfcId %d linkId %d on %s             | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 579      | Q931 - Invalid connection endpoint state - IntfcId %d linkId %d on %s       | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 580      | Q931 - Invalid physical control block state - IntfcId %d linkId %d on %s    | PROGFLT   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 581      | Q931 - Invalid connection state - IntfcId %d linkId %d on %s                | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 582      | Q931 - Invalid service user id - IntfcId %d linkId %d on %s                 | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 583      | Q931 - Invalid link layer SAP - IntfcId %d linkId %d on %s                  | PROGFLT   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 584      | Q931 - Invalid call reference - IntfcId %d linkId %d on %s                  | DATAFLT   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 585      | Q931 - Invalid msg length - IntfcId %d linkId %d on %s                      | INTMSGERR | ISDNIF-%d-LNK-%d | ISDNL3      |
| 586      | Q931 - Variant not supported - IntfcId %d linkId %d on %s                   | Q931IRR   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 587      | Q931 - Bind failure - IntfcId %d linkId %d on %s                            | PROGFLT   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 588      | Q931 - Timer expiry - IntfcId %d linkId %d on %s                            | Q931IRR   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 590      | Q931 - Msg decode error - IntfcId %d linkId %d on %s                        | Q931IRR   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 591      | Q931 - Ignored a maint msg - IntfcId %d linkId %d on %s                     | Q931IRR   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 592      | Q931 - Invalid service user id - IntfcId %d linkId %d on %s                 | Q931IRR   | ISDNIF-%d-LNK-%d | ISDNL3      |
| 593      | Q931 - Invalid event connection endpoint state - IntfcId %d linkId %d on %s | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 594      | Q931 - Invalid event connection endpoint - IntfcId %d linkId %d on %s       | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 596      | Q931 - Invalid interface ID - IntfcId %d linkId %d on %s                    | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 604      | Q931 - Protocol layer not active                                            | PROGFLT   | COM              | ISDNL3      |
| 605      | Q931 - Bind enable req for DL layer failed                                  | PROGFLT   | COM              | ISDNL3      |
| 606      | Q931 - Unbind disable req for DLSAP failed                                  | PROGFLT   | COM              | ISDNL3      |
| 607      | Q931 - Unbind disable req for TSAP failed                                   | PROGFLT   | COM              | ISDNL3      |
| 608      | Q931 - CC layer not active                                                  | PROGFLT   | COM              | ISDNL3      |
| 609      | Q931 - Invalid SPID for CC layer                                            | PROGFLT   | COM              | ISDNL3      |
| 610      | Q931 - Invalid state for upper Intfc                                        | PROGFLT   | COM              | ISDNL3      |
| 611      | Q931 - Invalid parm at the upper intfc                                      | PROGFLT   | COM              | ISDNL3      |
| 612      | Q931 - Invalid D channel                                                    | PROGFLT   | COM              | ISDNL3      |
| 613      | Q931 - Invalid SAP for upper intfc                                          | PROGFLT   | COM              | ISDNL3      |
| 614      | Q931 - Invalid SAP                                                          | PROGFLT   | COM              | ISDNL3      |

| Alarm ID | Information Message REPT String                  | CondType | Aid                                       | Entity Type |
|----------|--------------------------------------------------|----------|-------------------------------------------|-------------|
| 627      | SS7 Point Code %s has been deleted               | MAN      | PC-%d-%d-%d                               | COM         |
| 628      | SS7 linkId %d on %s has been deleted             | MAN      | SLK-%d                                    | SLK         |
| 629      | ISDN IntfcId %d linkId %d on %s has been deleted | MAN      | ISDNIF-%d-LNK-%d                          | LINK        |
| 630      | %s UNI up                                        | NORMAL   | UNI-IOM-%d-OC-%d or<br>UNI-IOM-%d-T3-%d   | PLK         |
| 632      | %s UNI Edited Out-of-Service                     | MAN      | UNI-IOM-%d-OC-%d or<br>UNI-IOM-%d-T3-%d   | PLK         |
| 633      | %s UNI deleted                                   | MAN      | UNI-IOM-%d-OC-%d or<br>UNI-IOM-%d-T3-%d   | PLK         |
| 634      | %s ILMI up                                       | NORMAL   | ILMI-IOM-%d-OC-%d or<br>ILMI-IOM-%d-T3-%d | PLK         |
| 636      | %s ILMI Edited Out-of-Service                    | MAN      | ILMI-IOM-%d-OC-%d or<br>ILMI-IOM-%d-T3-%d | PLK         |
| 637      | %s ILMI deleted                                  | MAN      | ILMI-IOM-%d-OC-%d or<br>ILMI-IOM-%d-T3-%d | PLK         |
| 640      | SVCID %s Endpoint In Service                     | NORMAL   | SVC-%d-%d-%d-%d                           | PLK         |
| 641      | SVCID %s Endpoint Edited Out-of-Service          | MAN      | SVC-%d-%d-%d-%d                           | PLK         |
| 642      | SVCID %s Endpoint Deleted                        | MAN      | SVC-%d-%d-%d-%d                           | PLK         |
| 645      | PVCID %s-%d In Service                           | NORMAL   | PVC-%d-%d-%d-%d                           | PLK         |
| 646      | PVCID %s-%d Edited Out-of-Service                | MAN      | PVC-%d-%d-%d-%d                           | PLK         |
| 647      | PVCID %s-%d Deleted                              | MAN      | PVC-%d-%d-%d-%d                           | PLK         |
| 649      | IOM-%d-%s Loss of Signal cleared                 | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d        | OC          |
| 651      | IOM-%d-%s Loss of Frame cleared                  | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d        | OC          |

| Alarm ID | Information Message REPT String                                             | CondType | Aid                             | Entity Type |
|----------|-----------------------------------------------------------------------------|----------|---------------------------------|-------------|
| 653      | IOM-%d-%s Alarm Indication Signal cleared                                   | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 655      | IOM-%d-%s Remote Defect Indication cleared                                  | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 657      | IOM-%d-%s Loss of Pointer cleared                                           | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 659      | IOM-%d-%s Unequipped cleared                                                | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 661      | IOM-%d-%s Payload Mismatch cleared                                          | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 679      | STATS - SP-%c no free space error cleared                                   | NORMAL   | SP-%c                           | COM         |
| 680      | STATS - SP-%c error - %d records lost                                       | DATAFLT  | SP-%c                           | COM         |
| 682      | STATS - SP-%c error record too big MaxRecordSize %d                         | PROGFLT  | SP-%c                           | COM         |
| 683      | STATS - Edited Out-of-Service                                               | MAN      | COM                             | COM         |
| 691      | BILLING - SP-%c no free space error cleared                                 | NORMAL   | SP-%c                           | COM         |
| 692      | BILLING - SP-%c error - %d records lost                                     | DATAFLT  | SP-%c                           | COM         |
| 694      | BILLING - SP-%c error record too big MaxRecordSize %d                       | PROGFLT  | SP-%c                           | COM         |
| 695      | BILLING - Edited Out-of-Service                                             | MAN      | COM                             | COM         |
| 710      | SCCP - User in service - switch %d spId %d PC %s ssn %d                     | NORMAL   | PC-%d-%d-%d-SSN-%d              | COM         |
| 712      | SCCP - Routing error - Invalid route or route not available                 | GP       | COM                             | COM         |
| 714      | SCCP - Invalid UI event - Invalid spId - prmtv %d spId %d                   | PROGFLT  | SP-%c                           | COM         |
| 715      | SCCP - Invalid UI event - parameter out of range - prmtv %d spId %d         | PROGFLT  | SP-%c                           | COM         |
| 717      | SCCP - Invalid LI event - Invalid suId - prmtv %d suId %d                   | PROGFLT  | SP-%c                           | COM         |
| 718      | SCCP - Invalid LI event - parameter out of range - prmtv %d suId %d         | PROGFLT  | SP-%c                           | COM         |
| 719      | SCCP - Timer event when protocol layer not active                           | PROGFLT  | SP-%c                           | COM         |
| 720      | TCAP - Message buffer allocation-deallocation failed                        | PROGFLT  | SP-%c                           | COM         |
| 721      | TCAP - Static buffer allocation-deallocation failed - SAP is not configured | PROGFLT  | SP-%c                           | COM         |
| 723      | TCAP - Illegal or inopportune event received - spSAP id is out of range     | PROGFLT  | SP-%c                           | COM         |

| Alarm ID | Information Message REPT String                                                  | CondType | Aid          | Entity Type |
|----------|----------------------------------------------------------------------------------|----------|--------------|-------------|
| 726      | TCAP - Illegal or inopportune event received - service users SAP id out of range | PROGFLT  | SP-%c        | COM         |
| 728      | TCAP - Illegal or inopportune event received at the layer management interface   | PROGFLT  | SP-%c        | COM         |
| 729      | TCAP - Illegal or inopportune event received - spSAP id is out of range          | PROGFLT  | SP-%c        | COM         |
| 736      | TCAP - Illegal or inopportune timer expiry event received by TCAP layer          | PROGFLT  | SP-%c        | COM         |
| 739      | TCAP - Hash Table function failed                                                | PROGFLT  | SP-%c        | COM         |
| 758      | INAP - Invalid dialogue ID to be freed - sapId %d dlgId %d                       | PROGFLT  | SP-%c        | COM         |
| 759      | INAP - Duplicate invoke IDs - sapId %d dlgId %d invokeId %d                      | PROGFLT  | SP-%c        | COM         |
| 760      | INAP - Bad message type in configuration request - param %d                      | PROGFLT  | SP-%c        | COM         |
| 761      | INAP - Wrong entry ID - param %d                                                 | PROGFLT  | SP-%c        | COM         |
| 762      | INAP - Wrong instance ID - param %d                                              | PROGFLT  | SP-%c        | COM         |
| 763      | INAP - Wrong SAP ID in statistics request - sapId %d                             | PROGFLT  | SP-%c        | COM         |
| 764      | INAP - Wrong SAP ID in INSAP status request - sapId %d                           | PROGFLT  | SP-%c        | COM         |
| 765      | INAP - Wrong SAP ID in TCSAP status request - sapId %d                           | PROGFLT  | SP-%c        | COM         |
| 766      | INAP - General configuration already done                                        | GP       | SP-%c        | COM         |
| 768      | INAP - INSAP ID out of range in configuration request - sapId %d                 | PROGFLT  | SP-%c        | COM         |
| 770      | INAP - TCSAP ID out of range in configuration request - sapId %d                 | PROGFLT  | SP-%c        | COM         |
| 771      | INAP - Out of bounds INSAP ID - sapId %d                                         | PROGFLT  | SP-%c        | COM         |
| 772      | INAP - Unconfigured INSAP ID - sapId %d                                          | PROGFLT  | SP-%c        | COM         |
| 773      | INAP - Illegal state of INSAP Id - sapId %d state %d                             | PROGFLT  | SP-%c        | COM         |
| 774      | INAP - Out of bounds TCSAP ID - sapId %d                                         | PROGFLT  | SP-%c        | COM         |
| 775      | INAP - Unconfigured TCSAP Id - sapId %d                                          | PROGFLT  | SP-%c        | COM         |
| 776      | INAP - Illegal state of TCSAP ID - sapId %d state %d                             | PROGFLT  | SP-%c        | COM         |
| 779      | INAP - Bad dlgId for INSAP configuration - sapId %d dlgId %d state %d            | PROGFLT  | SP-%c        | COM         |
| 780      | INAP - General configuration successful                                          | NORMAL   | SP-%c        | COM         |
| 781      | INAP - INSAP configuration successful - sapId %d                                 | NORMAL   | SP-%c        | COM         |
| 782      | INAP - TCSAP confuration successful - sapId %d                                   | NORMAL   | SP-%c        | COM         |
| 786      | SCPI - Message timer expired                                                     | SFT      | SP-%c        | COM         |
| 787      | SCPI - Encoding error                                                            | DATAFLT  | SP-%c        | COM         |
| 788      | SCPI - Decoding error                                                            | DATAFLT  | SP-%c        | COM         |
| 789      | SCPI - Number %s call gapped                                                     | GP       | SP-%c        | COM         |
| 792      | IOM-%d-%s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded cleared       | NORMAL   | IOM-%d-OC-%d | PLK         |

| Alarm ID | Information Message REPT String                                           | CondType  | Aid                                       | Entity Type |
|----------|---------------------------------------------------------------------------|-----------|-------------------------------------------|-------------|
| 794      | IOM-%d-%s Cell transmission failure cleared - APC to TADM                 | NORMAL    | IOM-%d-OC-%d                              | EQPT        |
| 800      | IS-41 - Invalid dlgId %d to be freed for sapId %d                         | INTMSGERR | SP-%c                                     | COM         |
| 801      | IS-41 - Error adding Tag - sapId %d - dlgId %d - invokeId %d - oprCode %d | INTMSGERR | SP-%c                                     | COM         |
| 802      | IS-41 - sapId %d received is greater than max SAPs %d configured          | INTMSGERR | SP-%c                                     | COM         |
| 803      | IS-41 - The sapId %d received is invalid                                  | INTMSGERR | SP-%c                                     | COM         |
| 804      | IS-41 - sapId %d in invalid state %d for receiving messages               | INTMSGERR | SP-%c                                     | COM         |
| 805      | IS-41 - dlgId %d invokeId %d in oprCode %d missing for sapId %d           | INTMSGERR | SP-%c                                     | COM         |
| 806      | IS-41 - Incorrect TCAP message %d received in sapId %d in dlgId %d        | INTMSGERR | SP-%c                                     | COM         |
| 808      | IS-41 - Addition of msg failed for sapId %d - dlgId %d                    | DATAFLT   | SP-%c                                     | COM         |
| 809      | IS-41 - Msg in sapId %d uses invalid dlgId %d                             | INTMSGERR | SP-%c                                     | COM         |
| 810      | IS-41 - dlgId %d in sapId %d already in use                               | INTMSGERR | SP-%c                                     | COM         |
| 811      | IS-41 - dlgId %d in sapId %d in incorrect state %d to be closed           | INTMSGERR | SP-%c                                     | COM         |
| 814      | IS-41 - Correlation ID missing - sapId %d dlgId %d oprCode %d             | DATAFLT   | SP-%c                                     | COM         |
| 815      | IS-41 - Encoding of oprCode %d in sapId %d failed                         | DATAFLT   | SP-%c                                     | COM         |
| 816      | IS-41 - Unsupported linked TCAP operation - sapId %d oprCode %d           | PROGFLT   | SP-%c                                     | COM         |
| 817      | IS-41 - Invalid component type rcvd - sapId %d dlgId %d                   | INTMSGERR | SP-%c                                     | COM         |
| 818      | IS-41 - dlgId %d - invokeId %d in oprCode %d for sapId %d in use          | DATAFLT   | SP-%c                                     | COM         |
| 819      | IS-41 - Parameter extraction failed - dlgId %d oprCode %d sapId %d        | INTMSGERR | SP-%c                                     | COM         |
| 820      | IS-41 - Control request for sapId %d rcvd with bad data                   | INTMSGERR | SP-%c                                     | COM         |
| 821      | IS-41 - Stats request for sapId %d rcvd with bad data                     | INTMSGERR | SP-%c                                     | COM         |
| 822      | IS-41 - Unbinding of sapId %d not successful                              | PROGFLT   | SP-%c                                     | COM         |
| 823      | IS-41 - dlgId %d - invokeId %d for sapId %d not avail                     | PROGFLT   | SP-%c                                     | COM         |
| 824      | IS-41 - Invalid start dlgId %d provided in sapId %d config                | DATAFLT   | SP-%c                                     | COM         |
| 825      | IS-41 - Status request for sapId %d rcvd with bad data                    | INTMSGERR | SP-%c                                     | COM         |
| 830      | IS-41 - Insufficient number of bins %d configured for sapId %d            | PROGFLT   | SP-%c                                     | COM         |
| 852      | SP-%c Invalid input characters on RS232 TL1 craft port cleared            | NORMAL    | SP-%c                                     | COM         |
| 854      | SP-%c security log threshold cleared                                      | NORMAL    | SP-%c                                     | SECU        |
| 860      | %s Loopback Uninhibited                                                   | NORMAL    | IOM-%d-STs1-%d or<br>IOM-%d-OC-%d-STs1-%d | STs1        |

| Alarm ID | Information Message REPT String                | CondType | Aid                                | Entity Type |
|----------|------------------------------------------------|----------|------------------------------------|-------------|
| 863      | %s Loss of Signal cleared                      | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 865      | %s Loss of Frame cleared                       | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 867      | %s Alarm Indication Signal (line) cleared      | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 869      | %s Remote Defect Indication (line) cleared     | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 872      | %s Edited Out-of-Service                       | MAN      | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 873      | %s Deleted                                     | MAN      | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 875      | %s Done Initializing                           | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 878      | %s Loopback Uninhibited                        | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 882      | IOM-%d - Line Timing In Service                | NORMAL   | IOM-%d                             | T1          |
| 885      | IOM-%d-%s Edited Out-of-Service                | MAN      | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 887      | IOM-%d-%s Done Initializing                    | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 889      | IOM-%d-ENET-%d Edited Out-of-Service           | MAN      | IOM-%d-ENET-%d                     | ENET        |
| 890      | IOM-%d-ENET-%d Deleted                         | MAN      | IOM-%d-ENET-%d                     | ENET        |
| 892      | IOM-%d-ENET-%d Loss of Signal cleared          | NORMAL   | IOM-%d-ENET-%d                     | ENET        |
| 894      | IOM-%d-ENET-%d Loss of IP connectivity cleared | NORMAL   | IOM-%d-ENET-%d                     | ENET        |

| Alarm ID | Information Message REPT String                                     | CondType | Aid                                | Entity Type |
|----------|---------------------------------------------------------------------|----------|------------------------------------|-------------|
| 896      | IOM-%d-ENET-%d No ARP response from Far End cleared                 | NORMAL   | IOM-%d-ENET-%d                     | ENET        |
| 917      | ISUP - Timer TBLO expired - PC %s - CIC %d                          | GP       | PC-%s-CIC-%d                       | TRK         |
| 920      | Less than %d percent of trunks in TrkGrp %d are OOS                 | NORMAL   | TGRP-%d                            | TRK         |
| 930      | PVCID %s-%d stopped receiving AIS and RAI on %s                     | NORMAL   | PVC-%d-%d-%d-%d-%d                 | PLK         |
| 936      | GR303 interface down - IfGrpNum-%d                                  | LAPDIRR  | 303IF-%d                           | ISDNL2      |
| 939      | GR303 TMC channel up - IfGrpNum-%d                                  | NORMAL   | 303IF-%d                           | ISDNL2      |
| 941      | GR303 EOC channel up - IfGrpNum-%d                                  | NORMAL   | 303IF-%d                           | ISDNL2      |
| 943      | GR303 TMC protection channel up - IfGrpNum-%d                       | NORMAL   | 303IF-%d                           | ISDNL2      |
| 945      | GR303 EOC protection channel up - IfGrpNum-%d                       | NORMAL   | 303IF-%d                           | ISDNL2      |
| 954      | Initialized H.248                                                   | NORMAL   | COM                                | COM         |
| 959      | SP-%c lost heartbeat with %s-%d-SP-%c cleared                       | NORMAL   | MGC-%d-SP-%c or SG-%d-SP-%c        | COM         |
| 963      | SP-%c resource %s usage threshold cleared                           | NORMAL   | SP-%c                              | COM         |
| 966      | TMG-%c clock drift condition cleared                                | NORMAL   | SP-%c                              | EQPT        |
| 968      | Chassis synchronized with NTP Server %s or %s                       | NORMAL   | COM                                | COM         |
| 970      | MGCP - able to connect to DNS server                                | NORMAL   | COM                                | COM         |
| 973      | MGCP - able to reach provisioned gateway %s                         | NORMAL   | COM                                | COM         |
| 975      | %s VPI-%d-VCI-%d Unrecognized cell count threshold exceeded cleared | NORMAL   | IOM-%d-T3-%d                       | T3          |
| 977      | IOM-%d-%s Loss of IP Connectivity cleared                           | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d    | OC          |
| 980      | %s Edited Out-of-Service                                            | MAN      | IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d | E1          |
| 981      | %s Deleted                                                          | MAN      | IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d | E1          |
| 984      | %s Loss of Signal cleared                                           | NORMAL   | IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d | E1          |
| 986      | %s Loss of Frame cleared                                            | NORMAL   | IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d | E1          |
| 988      | %s Alarm Indication Signal cleared                                  | NORMAL   | IOM-%d-E1-%d, IOM-%d-STM1-%d-E1-%d | E1          |

| Alarm ID | Information Message REPT String                                      | CondType | Aid                                   | Entity Type |
|----------|----------------------------------------------------------------------|----------|---------------------------------------|-------------|
| 990      | %s Remote Defect Indication cleared                                  | NORMAL   | IOM-%d-E1-%d,<br>IOM-%d-STM1-%d-E1-%d | E1          |
| 992      | %s Alarm Indication Signal (Tu) cleared                              | NORMAL   | IOM-%d-STM1-%d-E1-%d                  | E1          |
| 994      | %s Remote Failure Indication (Tu) cleared                            | NORMAL   | IOM-%d-STM1-%d-E1-%d                  | E1          |
| 996      | %s Loss of Pointer (Tu) cleared                                      | NORMAL   | IOM-%d-STM1-%d-E1-%d                  | E1          |
| 998      | %s Unequiped (Tu) cleared                                            | NORMAL   | IOM-%d-STM1-%d-E1-%d                  | E1          |
| 1000     | %s Loss of Multiframe (Tu) cleared                                   | NORMAL   | IOM-%d-STM1-%d-E1-%d                  | E1          |
| 1007     | signaling entity %s did not acknowledge Heartbeat in %d seconds      | GP       | SP-%c                                 | COM         |
| 1025     | IOM-%d-PVC-%d bandwidth exceeded cleared                             | NORMAL   | IOM-%d-PVC-%d                         | PLK         |
| 1027     | ISDN - Less than %d percent of B-Channels IntfcId %d are OOS         | NORMAL   | ISDNIF-%d                             | ISDNL3      |
| 1029     | ISDN - Less than %d percent of B-Channels IntfcId %d are OOS         | NORMAL   | ISDNIF-%d                             | ISDNL3      |
| 1031     | CAS - Less than %d percent of lines on IntfcId %d are OOS            | NORMAL   | CAS-IF-%d                             | PLK         |
| 1033     | CAS - Less than %d percent of lines on IntfcId %d are OOS            | NORMAL   | CAS-IF-%d                             | PLK         |
| 1034     | CAS - IntfcId %d has been deleted                                    | NORMAL   | CAS-IF-%d                             | PLK         |
| 1036     | MGCP - Less than %d percent of lines on IntfcId %d are OOS           | NORMAL   | MGCP-IF-%d                            | PLK         |
| 1038     | MGCP - Less than %d percent of lines on IntfcId %d are OOS           | NORMAL   | MGCP-IF-%d                            | PLK         |
| 1039     | ISDN - IntfcId %d has been deleted                                   | NORMAL   | ISDNIF-%d                             | ISDNL3      |
| 1040     | TrkGrp %d has been deleted                                           | NORMAL   | TGRP-%d                               | TRK         |
| 1041     | MGCP - IntfcId %d has been deleted                                   | NORMAL   | MGCP-IF-%d                            | PLK         |
| 1042     | SP-%c Temporary database space threshold no longer exceeded          | NORMAL   | SP-%c                                 | COM         |
| 1044     | SP-%c Permanent database space threshold no longer exceeded          | NORMAL   | SP-%c                                 | COM         |
| 1046     | SP-%c lost heartbeat with PC-%d-%d-%d-SP-%c cleared                  | NORMAL   | BOTH-PC-%d-%d-%d                      | COM         |
| 1050     | SMDI - Voice Mail Link Edited Out-of-Service - MSRID %d smdiLnkId %d | MAN      | SMDI-LNK-%d-%d                        | LINK        |
| 1054     | IOM-%d - Line Timing In Service                                      | NORMAL   | IOM-%d                                | E1          |
| 1057     | SMDI - Voice Mail Link Deleted - MSRID %d smdiLnkId %d               | MAN      | SMDI-LNK-%d-%d                        | LINK        |
| 1061     | TMG-%c - Loss of Signal to BITS Input %c cleared                     | NORMAL   | TMG-%c                                | E1          |



| Alarm ID | Information Message REPT String                                                | CondType | Aid                                | Entity Type |
|----------|--------------------------------------------------------------------------------|----------|------------------------------------|-------------|
| 1063     | TMG-%c - Loss of Frame to BITS Input %c cleared                                | NORMAL   | TMG-%c                             | E1          |
| 1065     | TMG-%c - Alarm Indication Signal on BITS Input %c cleared                      | NORMAL   | TMG-%c                             | E1          |
| 1067     | IOM-%d-%s No Inverse ARP from the Far End Cleared                              | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 1074     | IOM-%d-%s Inverse ARP: Remote Peer IP %s mismatch cleared                      | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 1076     | SP-%c Temporary database space threshold no longer low                         | NORMAL   | SP-%c                              | COM         |
| 1078     | SP-%c Permanent database space threshold no longer low                         | NORMAL   | SP-%c                              | COM         |
| 1080     | SF-%c ASX-%d FAC Threshold cleared                                             | NORMAL   | SF-%c                              | EQPT        |
| 1084     | IOM-%d-ENET-%d Source IP Address %s is the same as the Mate IP Address Cleared | NORMAL   | IOM-%d-ENET-%d                     | ENET        |
| 1087     | SP-%c - EMS connectivity restored - IP-%s                                      | NORMAL   | SP-%c                              | COM         |
| 1106     | %s Payload Mismatch (Tu) cleared                                               | NORMAL   | IOM-%d-STM1-%d-TU12-%d             | E1          |
| 1107     | %s Trace Id Mismatch                                                           | NORMAL   | IOM-%d-%s-VT1-%d                   | T1          |
| 1111     | %s - Remote Failure Indication (Line) cleared                                  | NORMAL   | IOM-%d-%s-VT1-%d                   | T1          |
| 1113     | %s - Alarm Indication Signal (Line) cleared                                    | NORMAL   | IOM-%d-%s-VT1-%d                   | T1          |
| 1115     | %s - Remote Failure Indication Server (Path) cleared                           | NORMAL   | IOM-%d-%s-VT1-%d                   | T1          |
| 1117     | %s - Remote Failure Indication Connectivity (Path) cleared                     | NORMAL   | IOM-%d-%s-VT1-%d                   | T1          |
| 1119     | %s - Remote Failure Indication Payload (Path) cleared                          | NORMAL   | IOM-%d-%s-VT1-%d                   | T1          |
| 1121     | %s - Remote Failure Indication (Line) cleared                                  | NORMAL   | IOM-%d-STM1-%d-TU12-%d             | E1          |
| 1123     | %s - Alarm Indication Signal (Line) cleared                                    | NORMAL   | IOM-%d-STM1-%d-TU12-%d             | E1          |
| 1125     | %s - Remote Failure Indication Server (Path) cleared                           | NORMAL   | IOM-%d-STM1-%d-TU12-%d             | E1          |
| 1127     | %s - Remote Failure Indication Connectivity (Path) cleared                     | NORMAL   | IOM-%d-STM1-%d-TU12-%d             | E1          |
| 1129     | %s - Remote Failure Indication Payload (Path) cleared                          | NORMAL   | IOM-%d-STM1-%d-TU12-%d             | E1          |
| 1131     | %s Loss of Multiframe (Path) cleared                                           | NORMAL   | IOM-%d-STS1-%d                     | STS1        |
| 1133     | %s Remote Failure Indication Server (Path) cleared                             | NORMAL   | IOM-%d-STS1-%d                     | STS1        |

| Alarm ID | Information Message REPT String                                               | CondType | Aid            | Entity Type |
|----------|-------------------------------------------------------------------------------|----------|----------------|-------------|
| 1135     | %s Remote Failure Indication Connectivity (Path) cleared                      | NORMAL   | IOM-%d-STS1-%d | STS1        |
| 1137     | %s Remote Failure Indication Payload (Path) cleared                           | NORMAL   | IOM-%d-STS1-%d | STS1        |
| 1141     | MGC-MG MEGACO Out-of-Service %s Port %d                                       | MAN      | CHASSIS        | COM         |
| 1143     | MGC-MG MEGACO Up %s Port %d to Port %d - IP %s                                | NORMAL   | CHASSIS        | COM         |
| 1145     | MGC-MG MEGACO excessive retransmissions %s Port %d to Port %d - IP %s cleared | NORMAL   | CHASSIS        | COM         |
| 1147     | IOM-%d NFS mount of %s disk successssful                                      | NORMAL   | IOM-%d         | EQPT        |
| 1153     | %s restarted successssfully                                                   | INTERR   | IOM-%d         | EQPT        |
| 1156     | IOM-%d over temperature fault cleared                                         | NORMAL   | IOM-%d         |             |
| 1157     | GR303 interface deleted - IfGrpNum-%d                                         | MAN      | 303IF-%d       | ISDNL2      |
| 1159     | SG-MGC M3UA Up SP-%c to MGCID %d - Port %d - IP %s                            | NORMAL   | CHASSIS        | COM         |
| 1161     | MGC-SG M3UA Up <MgName,DIST>-<PRI,SEC> Port %d to Port %d - IP %s             | NORMAL   | CHASSIS        | COM         |
| 1163     | MG-MGC MEGACO Up SP-%c to MGCID %d - Port %d - IP %s                          | NORMAL   | CHASSIS        | COM         |
| 1164     | MGC-SG M3UA Out-of-Service - Port %d                                          | MAN      | CHASSIS        | COM         |
| 1165     | MGC-MG M3UA Out-of-Service - Port %d                                          | MAN      | CHASSIS        | COM         |
| 1167     | MGC-MG IUA Down <MgName>-<PRI,SEC> Port %d to Port %d - IP %s                 | NORMAL   | CHASSIS        | COM         |
| 1169     | MG-MGC IUA Up SP-%c to Port %d - IP %s                                        | NORMAL   | CHASSIS        | COM         |
| 1173     | SIP - TrkGrp %d Feature Server available %s                                   | NORMA    | COM            | COM         |
| 1178     | SP-%c 100baseT carrier restored on signaling access interface                 | NORMAL   | SP-%c          | PLK         |
| 1182     | Signaling Access Interface Up                                                 | NORMAL   | COM            | COM         |
| 1185     | Remote MGC M3UA provisioned Out-of-Service - MGCID %d                         | MAN      | CHASSIS        | COM         |
| 1186     | Remote SG M3UA provisioned Out-of-Service - IP %s                             | MAN      | CHASSIS        | COM         |
| 1187     | LAPD IuaId %d on %s has been deleted                                          | MAN      | LAPD-%d        | LINK        |
| 1189     | CC - congestion threshold cleared                                             | NORMAL   | COM            | COM         |
| 1191     | MGCP - congestion threshold cleared                                           | NORMAL   | COM            | COM         |
| 1193     | SIP - congestion threshold cleared                                            | NORMAL   | COM            | COM         |
| 1194     | ISUP - congestion threshold cleared                                           | NORMAL   | COM            | COM         |
| 1197     | ISDN - congestion threshold cleared                                           | EXTERR   | COM            | COM         |

Table A-F. Normal Messages

| Alarm ID | Normal Message REPT String                                    | CondType     | Aid         | Entity Type |
|----------|---------------------------------------------------------------|--------------|-------------|-------------|
| 3        | SP-%c nonvolatile memory read error - recoverable             | BKUPMEMP     | SP-%c       | EQPT        |
| 4        | SP-%c memory read error at address 0x%x - recoverable         | WKGMEM       | SP-%c       | EQPT        |
| 19       | Module in slot %d has been inserted                           | INIT-100     | IOM-%d      | EQPT        |
| 20       | Module in slot %d has been removed                            | REPLUNITMISS | IOM-%d      | EQPT        |
| 22       | Module in slot %d has booted                                  | INIT-105     | IOM-%d      | EQPT        |
| 25       | Module in slot %d has been restored to service                | INIT-120     | IOM-%d      | EQPT        |
| 26       | Module in slot %d has been administratively removed           | SCMMA        | IOM-%d      | EQPT        |
| 34       | Protection SP-%c is synchronized and ready to provide service | INIT-75      | SP-%c       | COM         |
| 41       | Power Source %c on %s did not report loss of voltage          | PWR          | Power-%c    | EQPT        |
| 44       | Power Source %c on %s did not report voltage restored         | PWR          | Power-%c    | EQPT        |
| 53       | Fan unit has been inserted                                    | NORMAL       | Fan         | EQPT        |
| 55       | Module in slot %d is ready to be added                        | INIT-110     | IOM-%d      | EQPT        |
| 61       | Slot %d rear module inserted                                  | NORMAL       | IOM-%d-REAR | EQPT        |
| 63       | SF-%c inserted                                                | NORMAL       | SF-%c       | EQPT        |
| 65       | SP-%c inserted                                                | NORMAL       | SP-%c       | EQPT        |
| 66       | SF-%c removed                                                 | REPLUNITMISS | SF-%c       | EQPT        |
| 68       | SF-%c rear module inserted                                    | NORMAL       | SF-%c-REAR  | EQPT        |
| 70       | SP-%c rear inserted                                           | NORMAL       | SP-%c       | EQPT        |
| 71       | SP-%c removed                                                 | REPLUNITMISS | SP-%c-REAR  | EQPT        |
| 72       | Module in slot %d failed over to slot %d                      | PS           | IOM-%d      | EQPT        |
| 78       | Alarm cutoff button pressed                                   | NORMAL       |             | EQPT        |
| 80       | Beginning prom upgrade of Module in slot %d                   | SWFTDWN      | IOM-%d      | EQPT        |
| 83       | IOM-%d Not burning %s partition file not present              | NORMAL       | IOM-%d      | EQPT        |
| 88       | SP-%c cpu threshold crossed - Usage %d                        | PROCROVLD    | SP-%c       | COM         |
| 90       | SP-%c memory threshold crossed - Usage %.2f                   | PROCROVLD    | SP-%c       | COM         |
| 98       | All processes are ready                                       | INIT-20      | SP-%c       | COM         |
| 100      | All processes have recovered after SP failover                | NORMAL       | SP-%c       | COM         |
| 101      | All processes have recovered after Standby SP shutdown        | NORMAL       | SP-%c       | COM         |
| 112      | Administrative failover from SP-%c to SP-%c                   | MANWKSWPR    | SP-%c       | EQPT        |
| 113      | Administrative remove of SP-%c                                | MAN          | SP-%c       | EQPT        |
| 114      | Stby SP-%c upgrade in-progress                                | MAN          | SP-%c       | EQPT        |
| 121      | IOM-%d cpu threshold crossed - Usage %.2f (%d)                | PROCROVLD    | IOM-%d      | EQPT        |
| 123      | IOM-%d memory threshold crossed - Usage %.2f (%d)             | PROCROVLD    | IOM-%d      | EQPT        |
| 125      | IOM-%d RAM disk threshold crossed on %s - Usage %.2f (%d)     | PROCROVLD    | IOM-%d      | EQPT        |
| 128      | The TL1 Agent was unable to allocate memory                   | PROGFLT      | SP-%c       | COM         |
| 131      | A TL1 Agent System call failed                                | PROGFLT      | SP-%c       | COM         |

| Alarm ID | Normal Message REPT String                                 | CondType    | Aid               | Entity Type |
|----------|------------------------------------------------------------|-------------|-------------------|-------------|
| 132      | A data pool internal to the TL1 Agent lost data            | DATAFLT     | SP-%c             | COM         |
| 134      | The TL1 Agent internal data buffer was corrupted           | DATAFLT     | SP-%c             | COM         |
| 179      | IOM-%d-PORT-%d Threshold Crossed PmType %d PmValue %d (%d) | T-X         | IOM-%d-PORT-%d    | T1          |
| 186      | IOM-%d-PORT-%d Loopback Down                               | NORMAL      | IOM-%d-PORT-%d    | T1          |
| 187      | IOM-%d-PORT-%d In Service                                  | NORMAL      | IOM-%d-PORT-%d    | T1          |
| 188      | IOM-%d-Port-%d Loopback Inhibited                          | INHLPBK     | IOM-%d-PORT-%d    | T1          |
| 190      | IOM-%d-Port-%d Line Loopback Up by NEND cmd                | LPBKLINE    | IOM-%d-PORT-%d    | T1          |
| 191      | IOM-%d-Port-%d Line Loopback Up by FEND cmd                | LPBKLINE    | IOM-%d-PORT-%d    | T1          |
| 192      | IOM-%d-Port-%d Payload Loopback Up by NEND cmd             | LPBKPAYLOAD | IOM-%d-PORT-%d    | T1          |
| 193      | IOM-%d-Port-%d Payload Loopback Up by FEND cmd             | LPBKPAYLOAD | IOM-%d-PORT-%d    | T1          |
| 209      | %s In Service                                              | NORMAL      | IOM-%d-T3-%d      | T3          |
| 210      | %s Line Loopback Up by NEND cmd                            | LPBKLINE    | IOM-%d-T3-%d      | T3          |
| 211      | %s Line Loopback Up by FEND cmd                            | LPBKLINE    | IOM-%d-T3-%d      | T3          |
| 212      | %s Loopback Down                                           | NORMAL      | IOM-%d-T3-%d      | T3          |
| 213      | %s Loopback Inhibited                                      | INHLPBK     | IOM-%d-T3-%d      | T3          |
| 215      | %s Threshold Crossed PmType %d PmValue %d (%d)             | T-X         | IOM-%d-T3-%d      | T3          |
| 247      | %s In Service                                              | NORMAL      | IOM-%d-STS1-%d    | STS1        |
| 248      | %s Line Loopback Up by NEND cmd                            | LPBKLINE    | IOM-%d-STS1-%d    | STS1        |
| 249      | %s Line Loopback Up by FEND cmd                            | LPBKLINE    | IOM-%d-STS1-%d    | STS1        |
| 250      | %s Loopback Down                                           | NORMAL      | IOM-%d-STS1-%d    | STS1        |
| 276      | %s In Service                                              | NORMAL      | IOM-%d-%s-PORT-%d | T1          |
| 277      | %s Line Loopback Up by NEND cmd                            | LPBKLINE    | IOM-%d-%s-PORT-%d | T1          |
| 278      | %s Line Loopback Up by FEND cmd                            | LPBKLINE    | IOM-%d-%s-PORT-%d | T1          |
| 279      | %s Payload Loopback Up by NEND cmd                         | LPBKPAYLOAD | IOM-%d-%s-PORT-%d | T1          |

| Alarm ID | Normal Message REPT String                                                    | CondType    | Aid               | Entity Type |
|----------|-------------------------------------------------------------------------------|-------------|-------------------|-------------|
| 280      | %s Payload Loopback Up by FEND cmd                                            | LPBKPAYLOAD | IOM-%d-%s-PORT-%d | T1          |
| 281      | %s Loopback Down                                                              | NORMAL      | IOM-%d-%s-PORT-%d | T1          |
| 282      | %s Loopback Inhibited                                                         | INHLPBK     | IOM-%d-%s-PORT-%d | T1          |
| 284      | %s Threshold Crossed PmType %d PmValue %d (%d)                                | T-X         | IOM-%d-%s-PORT-%d | T1          |
| 295      | All IOMs have switched to TMG-%c                                              | WKSWPR-TMG  | TMG-%c            | EQPT        |
| 304      | TMG-%c failover to TMG-%c                                                     | WKSWRP-TMG  | TMG-%c            | EQPT        |
| 305      | TMG-%c BITS Input %c state change to %s                                       | NORMAL      | TMG-%c            | T1          |
| 307      | BITS Input %c failover to BITS Input %c                                       | WKSWPR-BITS | CHASSIS           | EQPT        |
| 333      | SP-%c to %s relay channel %d communication error - cause %d                   | PROGFLT     | SP-%c             | COM         |
| 336      | SP-%c to %s relay channel %d congestion overflow                              | PROGFLT     | SP-%c or IOM-%d   | COM         |
| 354      | MTP3 - mgmt init - link deactivated - linkId %d on %s                         | MAN         | SLK-%d            | SLK         |
| 355      | MTP3 - link active - linkId %d on %s                                          | NORMAL      | SLK-%d            | SLK         |
| 357      | MTP3 - uninhibit req denied by rmt end - linkId %d on %s                      | CCSNETIRR   | SLK-%d            | SLK         |
| 358      | MTP3 - mgmt locally uninhib - linkId %d on %s                                 | MAN         | SLK-%d            | SLK         |
| 359      | MTP3 - route mgmt locally uninhib - linkId %d on %s                           | NORMAL      | SLK-%d            | SLK         |
| 360      | MTP3 - remote force uninhib on local inhib link - linkId %d on %s             | NORMAL      | SLK-%d            | SLK         |
| 361      | MTP3 - locally uninhib due to adjacent restart - linkId %d on %s              | NORMAL      | SLK-%d            | SLK         |
| 362      | MTP3 - remote uninhibit on the link - linkId %d on %s                         | NORMAL      | SLK-%d            | SLK         |
| 363      | MTP3 - remote forced uninhibit on the remote inhibit link - linkId %d on %s   | NORMAL      | SLK-%d            | SLK         |
| 364      | MTP3 - remote uninhibit due to adjacent restart on the link - linkId %d on %s | NORMAL      | SLK-%d            | SLK         |
| 365      | MTP3 - locally inhib - linkId %d on %s                                        | NORMAL      | SLK-%d            | SLK         |
| 366      | MTP3 - remote inhib - linkId %d on %s                                         | NORMAL      | SLK-%d            | SLK         |
| 368      | MTP3 - rmtly unblkd LSSU - linkId %d on %s                                    | NORMAL      | SLK-%d            | SLK         |
| 369      | MTP3 - rmtly unblkd - linkId %d on %s                                         | NORMAL      | SLK-%d            | SLK         |
| 373      | MTP3 - link cong ended - linkId %d CongLvl %d on %s                           | NORMAL      | SLK-%d            | SLK         |
| 374      | MTP2 - abnrml BSN - protocol error - linkId %d on %s                          | CCSNETIRR   | SLK-%d            | SLK         |
| 375      | MTP2 - abnrml FIB - protocol error - linkId %d on %s                          | CCSNETIRR   | SLK-%d            | SLK         |
| 380      | MTP3 - inhibit denied by local routing mgmt - linkId %d on %s                 | CCSNETIRR   | SLK-%d            | SLK         |
| 381      | MTP3 - inhibit denied - rmt end neg ack - linkId %d on %s                     | CCSNETIRR   | SLK-%d            | SLK         |
| 382      | MTP3 - inhibit denied - uninhib in prog - linkId %d on %s                     | CCSNETIRR   | SLK-%d            | SLK         |
| 383      | MTP3 - inhibit denied - no rmt ack - linkId %d on %s                          | CCSNETIRR   | SLK-%d            | SLK         |
| 384      | MTP3 - inhibit denied - no path to adj node - linkId %d on %s                 | CCSNETIRR   | SLK-%d            | SLK         |

| Alarm ID | Normal Message REPT String                                               | CondType  | Aid          | Entity Type |
|----------|--------------------------------------------------------------------------|-----------|--------------|-------------|
| 385      | MTP3 - inhibit denied - no rsp from rmt end - linkId %d on %s            | CCSNETIRR | SLK-%d       | SLK         |
| 386      | MTP3 - inhibit denied - inv adj point code cfgd - linkId %d on %s        | CCSNETIRR | SLK-%d       | SLK         |
| 387      | MTP3 - uninhib denied - inhib in prog - linkId %d on %s                  | CCSNETIRR | SLK-%d       | SLK         |
| 388      | MTP3 - uninhib denied - no rmt ack - linkId %d on %s                     | CCSNETIRR | SLK-%d       | SLK         |
| 389      | MTP3 - uninhib denied - no path to adj node - linkId %d on %s            | CCSNETIRR | SLK-%d       | SLK         |
| 390      | MTP3 - frc uninhib denied - no rmt ack - linkId %d on %s                 | CCSNETIRR | SLK-%d       | SLK         |
| 391      | MTP3 - frc uninhib denied - no path to adj node - linkId %d on %s        | CCSNETIRR | SLK-%d       | SLK         |
| 392      | MTP3 - remote frc uninhib denied - no rmt ack - linkId %d on %s          | CCSNETIRR | SLK-%d       | SLK         |
| 393      | MTP3 - remote frc uninhib denied - no path to adj node - linkId %d on %s | CCSNETIRR | SLK-%d       | SLK         |
| 394      | MTP3 - rte uninhib denied - no rmt ack - linkId %d on %s                 | CCSNETIRR | SLK-%d       | SLK         |
| 395      | MTP3 - rte uninhib denied - no path to adj node - linkId %d on %s        | CCSNETIRR | SLK-%d       | SLK         |
| 400      | MTP3 - data dropped - mgmt rcvd (SRT) - unknown DPC - linkId %d on %s    | CCSNETIRR | SLK-%d       | SLK         |
| 402      | MTP3 - invalid OPC rcvd in SLTM SLTA msg - linkId %d on %s               | CCSNETIRR | SLK-%d       | SLK         |
| 403      | MTP3 - Signaling Link Test proc failed - linkId %d on %s                 | TSTSLK    | SLK-%d       | SLK         |
| 404      | MTP3 - Periodic Signaling Link Test proc failed - linkId %d on %s        | TSTSLK    | SLK-%d       | SLK         |
| 410      | MTP3 - lyr inactv - invalid timer event                                  | MMR       | COM          | COM         |
| 411      | MTP3 - lyr inactv - invalid lower layer event                            | MMR       | COM          | COM         |
| 415      | MTP3 - lyr inactv - invalid upper layer event                            | MMR       | COM          | COM         |
| 421      | MTP3 - RESUME - PC %s                                                    | NORMAL    | PC-%s        | COM         |
| 424      | MTP3 - cong stopped on - DPC %s                                          | NORMAL    | PC-%s        | COM         |
| 438      | ISUP - rmt ckt grp unblk req - PC %s - CIC %d                            | NORMAL    | PC-%s-CIC-%d | TRK         |
| 439      | ISUP - rmt ckt blk - PC %s - CIC %d                                      | GP        | PC-%s-CIC-%d | TRK         |
| 440      | ISUP - rmt ckt unblk - PC %s - CIC %d                                    | NORMAL    | PC-%s-CIC-%d | TRK         |
| 448      | ISUP - local ckt blk - PC %s - CIC %d                                    | NORMAL    | PC-%s-CIC-%d | TRK         |
| 449      | ISUP - local ckt unblk - PC %s - CIC %d                                  | NORMAL    | PC-%s-CIC-%d | TRK         |
| 450      | ISUP - failed ckt valid rsp - PC %s - CIC %d                             | EXTERR    | PC-%s-CIC-%d | TRK         |
| 451      | ISUP - ckt valid rsp - CLLI mismatch - PC %s - CIC %d                    | EXTERR    | PC-%s-CIC-%d | TRK         |

| Alarm ID | Normal Message REPT String                                              | CondType   | Aid                             | Entity Type |
|----------|-------------------------------------------------------------------------|------------|---------------------------------|-------------|
| 452      | ISUP - range mismatch in CQR or CQM msg - PC %s - CIC %d                | EXTERR     | PC-%s-CIC-%d                    | TRK         |
| 454      | ISUP - protocol layer not active                                        | INTMSGERR  | PC-%s                           | COM         |
| 465      | ISUP - bind failure within the given time                               | INTSFT     | PC-%s                           | COM         |
| 471      | ISUP - rmt user unavail indic rcvd from MTP3 - PC %s                    | NORMAL     | PC-%s                           | COM         |
| 472      | ISUP - rmt user avail indic rcvd from MTP3 - PC %s                      | NORMAL     | PC-%s                           | COM         |
| 473      | ISUP - rmt user unequipped indic rcvd from MTP3 - PC %s                 | NORMAL     | PC-%s                           | COM         |
| 479      | IW - Bind tmr expiry to PSIF                                            | INTSFT     | COM                             | COM         |
| 480      | IW - Bind tmr expiry to router                                          | INTSFT     | COM                             | COM         |
| 481      | IW - Bind tmr expiry to rsrc mgr                                        | INTSFT     | COM                             | COM         |
| 482      | IW - Bind tmr expiry to switch fabric                                   | INTSFT     | COM                             | COM         |
| 487      | IW - memory alloc failure                                               | INTSFT     | COM                             | COM         |
| 489      | CC - memory alloc failure                                               | INTSFT     | COM                             | COM         |
| 505      | RM - intfc prim req rcvd - rter entity inactive                         | INTSFT     | COM                             | COM         |
| 529      | IW - bind failure on a lower SAP towards ISUP RM                        | INTSFT     | COM                             | COM         |
| 533      | QW - bind failure to ISDN layer                                         | INTSFT     | COM                             | COM         |
| 536      | MTP3 - SS7 Route Allowed - PC %s - LnksetId %d                          | NORMAL     | PC-%s                           | COM         |
| 537      | MTP3 - SS7 Route Prohibited - PC %s - LnksetId %d                       | NORMAL     | PC-%s                           | COM         |
| 538      | MTP3 - SS7 Route Restricted - PC %s - LnksetId %d                       | NORMAL     | PC-%s                           | COM         |
| 564      | LAPD - Entering congestion - IntfcId %d linkId %d on %s                 | SLCR       | ISDNIF-%d-LNK-%d                | ISDNL 2     |
| 566      | LAPD - Link up - IntfcId %d linkId %d on %s                             | NORMAL     | ISDNIF-%d-LNK-%d                | ISDNL 2     |
| 572      | ISDN D channel up - IntfcId %d linkId %d on %s                          | NORMAL     | ISDNIF-%d-LNK-%d                | ISDNL 2     |
| 573      | ISDN D channel down - IntfcId %d linkId %d on %s                        | LAPDIRR    | ISDNIF-%d-LNK-%d                | ISDNL 2     |
| 589      | Q931 - Max num of service msg retries done - IntfcId %d linkId %d on %s | Q931IRR    | ISDNIF-%d-LNK-%d                | ISDNL 3     |
| 662      | IOM-%d-%s Trace Identifier Message Defect                               | TIM        | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 663      | IOM-%d-%s In Service                                                    | NORMAL     | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 670      | LM - Active SP starting schema upgrade                                  | IP-ED-EQPT | COM                             | COM         |
| 671      | LM - Standby SP starting schema upgrade                                 | IP-ED-EQPT | COM                             | COM         |
| 673      | STATS - SP-%c connection established with %s                            | NORMAL     | SP-%c                           | PLK         |
| 685      | BILLING - SP-%c connection established with %s                          | NORMAL     | SP-%c                           | PLK         |
| 703      | Service change with MGC - %s successful                                 | NORMAL     | COM                             | COM         |
| 735      | TCAP - Dialogue identifier allocation failed for dialogue request       | DATAFLT    | SP-%c                           | COM         |

| Alarm ID | Normal Message REPT String                                           | CondType | Aid                                       | Entity Type |
|----------|----------------------------------------------------------------------|----------|-------------------------------------------|-------------|
| 744      | INAP - Exceeded maximum dialogues for a SAP - sapId %d               | PROGFLT  | SP-%c                                     | COM         |
| 752      | INAP - Timer initialization failed                                   | PROGFLT  | SP-%c                                     | COM         |
| 785      | LMIC - Could not read record from database                           | DATAFLT  | SP-%c                                     | COM         |
| 795      | ISUP - CGB rcvd - PC %s - CIC %d - %d                                | NORMAL   | PC-%s-CIC-%d                              | TRK         |
| 796      | ISUP - CGBA rcvd with inconsistent status bits - PC %s - CIC %d - %d | EXTERR   | PC-%s-CIC-%d                              | TRK         |
| 797      | ISUP - CGUA rcvd with inconsistent status bits - PC %s - CIC %d - %d | EXTERR   | PC-%s-CIC-%d                              | TRK         |
| 798      | ISUP - UCIC rcvd - PC %s - CIC %d                                    | EXTERR   | PC-%s-CIC-%d                              | TRK         |
| 807      | IS-41 - Allocation of dialog failed for sapId %d                     | DATAFLT  | SP-%c                                     | COM         |
| 812      | IS-41 - Alloc of Invoke control block of size %d failed for sapId %d | DATAFLT  | SP-%c                                     | COM         |
| 813      | IS-41 - Alloc of msg buffer failed for sapId %d oprCode %d           | DATAFLT  | SP-%c                                     | COM         |
| 833      | SP-%c is synchronizing with SP-%c                                    | INIT-60  | SP-%c                                     | EQPT        |
| 835      | IOM-%d unable to run scheduled exercise error-%d                     | OVRDSW   | IOM-%d                                    | EQPT        |
| 836      | IOM-%d running scheduled exercise                                    | NORMAL   | IOM-%d                                    | EQPT        |
| 837      | IOM-%d Schedule exercise inhibited                                   | INHEX    | IOM-%d                                    | EQPT        |
| 840      | SP-%c unable to run scheduled exercise Error-%d                      | OVRDSW   | SP-%c                                     | EQPT        |
| 841      | SP-%c running scheduled exercise                                     | NORMAL   | SP-%c                                     | EQPT        |
| 842      | SP-%c Schedule exercise inhibited                                    | INHEX    | SP-%c                                     | EQPT        |
| 859      | %s Loopback Inhibited                                                | INHLPBK  | IOM-%d-STS1-%d or<br>IOM-%d-OC-%d-STS1-%d | STS1        |
| 861      | %s Threshold Crossed PmType %d PmValue %d (%d)                       | T-x      | IOM-%d-STS1-%d or<br>IOM-%d-OC-%d-STS1-%d | STS1        |
| 871      | %s In Service                                                        | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d        | OC          |
| 876      | %s Line Loopback Up by NEND cmd                                      | LPBKLINE | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d        | OC          |
| 877      | %s Line Loopback Down                                                | NORMAL   | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d        | OC          |
| 879      | %s Loopback Inhibited                                                | INHLPBK  | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d        | OC          |



| Alarm ID | Normal Message REPT String                                                 | CondType    | Aid                                | Entity Type |
|----------|----------------------------------------------------------------------------|-------------|------------------------------------|-------------|
| 880      | %s Threshold Crossed PmType %d PmValue %d (%d)                             | T-x         | IOM-%d-OC3-%d or<br>IOM-%d-OC12-%d | OC          |
| 883      | Line Timing IOM-%d failover to IOM-%d                                      | WKSWPR-BITS | IOM-%d                             | EQPT        |
| 888      | IOM-%d-ENET-%d In Service                                                  | NORMAL      | IOM-%d-ENET-%d                     | ENET        |
| 898      | Intrusion suspected - username-%s - IP-%s                                  | EXT         | COM                                | SECU        |
| 899      | MTP3 - T19 exprd - restoration failed - linkId %d on %s                    | CCSNETIRR   | SLK-%d                             | SLK         |
| 900      | MTP3 - link failed on T31 expiry - linkId %d CongLvl %d on %s              | SLCR        | SLK-%d                             | SLK         |
| 902      | MTP3 - link util for 1min period below thresh - linkId %d util %d percent  | NORMAL      | SLK-%d                             | SLK         |
| 904      | MTP3 - link util for 5min period below thresh - linkId %d util %d percent  | NORMAL      | SLK-%d                             | SLK         |
| 906      | MTP3 - link util for 15min period below thresh - linkId %d util %d percent | NORMAL      | SLK-%d                             | SLK         |
| 908      | M3UA - RESUME - PC %s                                                      | NORMAL      | PC-%s                              | COM         |
| 909      | M3UA - PC %s congested                                                     | SLCR        | PC-%s                              | COM         |
| 910      | M3UA - user part unavailable at rmt - PC %s                                | EXT         | PC-%s                              | COM         |
| 911      | ISUP - No LPA Rcvd from Peer - COT Failed - PC %s - CIC %d                 | EXTERR      | PC-%s-CIC-%d                       | TRK         |
| 912      | ISUP - Continuity Failed - PC %s - CIC %d                                  | GP          | PC-%s-CIC-%d                       | TRK         |
| 913      | ISUP - COT Retry Failed - PC %s - CIC %d                                   | GP          | PC-%s-CIC-%d                       | TRK         |
| 916      | ISUP - Hop counter expired for OPC %s CIC %d CDPN %s CGPN %s               | EXTERR      | PC-%s-CIC-%d                       | TRK         |
| 937      | GR303 interface up - IfGrpNum-%d                                           | NORMAL      | 303IF-%d                           | ISDNL<br>2  |
| 946      | GR303 TMC PPS initiated - IfGrpNum-%d                                      | PS          | 303IF-%d                           | ISDNL<br>2  |
| 947      | GR303 TMC PPS completed - IfGrpNum-%d                                      | NORMAL      | 303IF-%d                           | ISDNL<br>2  |
| 948      | GR303 EOC PPS initiated - IfGrpNum-%d                                      | PS          | 303IF-%d                           | ISDNL<br>2  |
| 949      | GR303 EOC PPS completed - IfGrpNum-%d                                      | NORMAL      | 303IF-%d                           | ISDNL<br>2  |
| 950      | GR303 RDT report - %s - IfGrpNum-%d                                        | GP          | 303IF-%d                           | COM         |
| 952      | IOM-%d VOIP PVC-%d endpoint up                                             | NORMAL      | IOM-%d-PVC-%d                      | PLK         |
| 955      | Service Change with HandOff MGC failed - not registered                    | GP          | COM                                | COM         |
| 957      | MG overload cleared - total rejected calls during overload %d              | NORMAL      | COM                                | COM         |
| 964      | Restore of backup failed                                                   | SFT         | COM                                | COM         |
| 978      | IOM-%d TSU %s Error -%s                                                    | CONTCOM     | IOM-%d                             | COM         |

| Alarm ID | Normal Message REPT String                                     | CondType    | Aid                                   | Entity Type |
|----------|----------------------------------------------------------------|-------------|---------------------------------------|-------------|
| 979      | IOM-%d FSU %s Error -%s                                        | CONTCOM     | IOM-%d                                | COM         |
| 1001     | %s Trace Id Mismatch (Tu)                                      | TIM         | IOM-%d-STM1-%d-E1-%d                  | E1          |
| 1002     | %s In Service                                                  | NORMAL      | IOM-%d-E1-%d,<br>IOM-%d-STM1-%d-E1-%d | E1          |
| 1003     | %s Line Loopback Up by NEND cmd                                | LPBKLINE    | IOM-%d-E1-%d,<br>IOM-%d-STM1-%d-E1-%d | E1          |
| 1004     | %s Payload Loopback Up by NEND cmd                             | LPBKPAYLOAD | IOM-%d-E1-%d,<br>IOM-%d-STM1-%d-E1-%d | E1          |
| 1005     | %s Loopback Down                                               | NORMAL      | IOM-%d-E1-%d,<br>IOM-%d-STM1-%d-E1-%d | E1          |
| 1006     | %s Threshold Crossed PmType %d PmValue %d (%d)                 | T-X         | IOM-%d-E1-%d,<br>IOM-%d-STM1-%d-E1-%d | E1          |
| 1009     | CALEA-CDC failed for caseId %s - message encoding failed       | GP          | COM                                   | PLK         |
| 1010     | CALEA-CDC failed for caseId %s - socket failure                | GP          | COM                                   | PLK         |
| 1011     | CALEA-CDC failed for caseId %s - maximum CDC sessions exceeded | GP          | COM                                   | PLK         |
| 1012     | CALEA-CDC %s failed for caseId %s - TCP connect failed         | GP          | COM                                   | PLK         |
| 1013     | CALEA-CDC %s failed for caseId %s - CDC out of service         | GP          | COM                                   | PLK         |
| 1014     | CALEA-CDC failed for caseId %s - internal failure              | GP          | COM                                   | PLK         |
| 1015     | CALEA-CCC %s failed for caseId %s – routing failure            | GP          | COM                                   | PLK         |
| 1016     | CALEA-CCC %s failed for caseId %s – resource failure           | GP          | COM                                   | PLK         |
| 1017     | CALEA-CCC failed for caseId %s – maximum CCC sessions exceeded | GP          | COM                                   | PLK         |
| 1018     | CALEA-CCC failed for caseId %s – switching resource failure    | GP          | COM                                   | PLK         |
| 1019     | CALEA-CCC %s failed for caseId %s – remote busy                | GP          | COM                                   | PLK         |
| 1020     | CALEA-CCC %s failed for caseId %s – remote response timeout    | GP          | COM                                   | PLK         |
| 1021     | CALEA-CCC %s failed for caseId %s – remote failure             | GP          | COM                                   | PLK         |

| Alarm ID | Normal Message REPT String                                                  | CondType  | Aid                                  | Entity Type |
|----------|-----------------------------------------------------------------------------|-----------|--------------------------------------|-------------|
| 1022     | CALEA-CCC failed for caseId %s – internal failure                           | GP        | COM                                  | PLK         |
| 1023     | CALEA-CCC failed for caseId %s – no CC available                            | GP        | COM                                  | PLK         |
| 1047     | CCCLISTID %d assigned to more than one LAESCASE                             | GP        | COM                                  | PLK         |
| 1048     | SMDI - Voice Mail Link Up - MSRID %d smdiLnkId %d                           | NORMAL    | SMDI-LNK-%d-%d                       | LINK        |
| 1051     | SMDI - MWI Threshold threshold reached on smdiLnkId %d                      | T-MWI     | COM                                  | COM         |
| 1052     | SMDI - MWI Threshold threshold cleared on smdiLnkId %d                      | NORMAL    | COM                                  | COM         |
| 1058     | IP CrossTalk: %s, PCE:0x%x, Slot:%d, Lcl IP/UDP: %s/%d                      | NORMAL    | IOM-%d                               | PLK         |
| 1059     | IP CrossTalk: Remote Old IP/UDP: %s/%d, Remote New IP/UDP: %s/%d            | NORMAL    | IOM-%d                               | PLK         |
| 1068     | Standby SP-%c booting                                                       | INIT-50   | SP-%c                                | EQPT        |
| 1069     | User login - username-%s - IP-%s                                            | NORMAL    | SP-%c                                | SECU        |
| 1070     | User logout - username-%s - IP-%s                                           | NORMAL    | SP-%c                                | SECU        |
| 1098     | SP-%c using persistant configuration data from last Active                  | NORMAL    | SP-%c                                | COM         |
| 1099     | SP-%c using persistant configuration data from last Stby-Hot                | NORMAL    | SP-%c                                | COM         |
| 1100     | SP-%c persistant configuration was incomplete - using default configuration | NORMAL    | SP-%c                                | COM         |
| 1101     | SP-%c persistant configuration was corrupt - using backup configuration     | INTERR    | SP-%c                                | COM         |
| 1102     | SP-%c persistant configuration was corrupt - using default configuration    | INTERR    | SP-%c                                | COM         |
| 1103     | System GSM Cache cleaned on %s                                              | NORMAL    | COM                                  | COM         |
| 1138     | %s Threshold Crossed PmType %d PmValue %d (%d)                              | T-X       | IOM-%d-%s-VT1-%d                     | T1          |
| 1139     | %s Threshold Crossed PmType %d PmValue %d (%d)                              | T-X       | IOM-%d-E1-%d, IOM-%d-STM1-%d-TU12-%d | E1          |
| 1151     | %s failed to restart                                                        | INTERR    | IOM-%d                               | EQPT        |
| 1170     | %s                                                                          | GP        | COM                                  | COM         |
| 1171     | SIP - TrkGrp %d Feature Server failover from %s to %s                       | WKSWRP-FS | COM                                  | COM         |
| 1184     | SLAM - Provisioning failed for %s - Error %d TableId %d Tl1Cmd %d           | MAN       | COM                                  | COM         |
| 1198     | CALEA-CCC caseId %s - unsupported interface specified for ccc %s            | GP        | COM                                  | PLK         |

**Table A-G. Obsolete Alarms and Messages**

| Alarm ID | Type     | Obsolete Message REPT String                                     | CondType  | AID              | Entity Type |
|----------|----------|------------------------------------------------------------------|-----------|------------------|-------------|
| 18       | Major    | SP-%c 100baseT carrier not detected on management interface      | OSLINK    | SP-%c            | PLK         |
| 31       | Major    | Module in slot %d failed to boot - error code %d                 | CONTCOM   | IOM-%d           | EQPT        |
| 32       | Normal   | SP-%c never synchronized using factory configuration information | MISC-50   | SP-%c            | COM         |
| 33       | Normal   | SP-%c was last Stby-Hot may have lost some configuration data    | MISC-51   | SP-%c            | COM         |
| 85       | Major    | IOM-%d kernel fault                                              | PROGFLT   | IOM-%d           | EQPT        |
| 86       | Major    | IOM-%d process %s - abnormally ended                             | PROGFLT   | IOM-%d           | EQPT        |
| 87       | Info     | Active SP rebooting this SP                                      | RCVRY     | SP-%c            | COM         |
| 94       | Info     | Process started %s                                               | INIT-10   |                  | COM         |
| 95       | Info     | Process restarted %s - %d                                        | NORMAL    |                  | COM         |
| 96       | Info     | Process State Change %s - %s                                     | NORMAL    |                  | COM         |
| 97       | Info     | All Processes have been started                                  | INIT-15   |                  | COM         |
| 102      | Major    | SP-%c lost communication with %s                                 | PROGFLT   | SP-%c            | COM         |
| 115      | Info     | All processes shutdown normally                                  | AUTORESET | SP-%c            | COM         |
| 119      | Critical | IOM-%d excessive port failures                                   | EXT       | IOM-%d           | T1          |
| 169      | Info     | IOM-%d-PORT-%d Device Error cleared                              | FRMR      | IOM-%d           | EQPT        |
| 185      | Normal   | IOM-%d-PORT-%d State Change %s to %s                             | EXT       |                  | T1          |
| 433      | Info     | ISUP - ckt validation timer expiry - PC %s - CIC %d              | GP        | PC-%s-CIC-%d     | TRK         |
| 434      | Info     | ISUP - protocol timery expiry - PC %s - CIC %d                   | GP        | PC-%s-CIC-%d     | TRK         |
| 468      | Major    | MTP3 - layer 3 out of rte instance control blks                  | INTSFT    |                  | COM         |
| 558      | Normal   | Less than %d percent of the trunks or lines in route %s are OOS  | NORMAL    | RT-%s            | TRK         |
| 559      | Info     | ISDN IF %d - LNK %d - Start Chnl %d - End Chnl %d - IS           | NORMAL    | ISDNIF-%d-LNK-%d | LINK        |
| 560      | Info     | ISDN IF %d - LNK %d - Start Chnl %d - End Chnl %d - OOS          | GP        | ISDNIF-%d-LNK-%d | LINK        |
| 561      | Info     | ISDN IF %d - LNK %d - Start Chnl %d - End Chnl %d - Reset        | NORMAL    | ISDNIF-%d-LNK-%d | LINK        |
| 562      | Info     | ISDN IF %d Enabled                                               | NORMAL    | ISDNIF-%d        | LINK        |
| 563      | Info     | ISDN IF %d Disabled                                              | MAN       | ISDNIF-%d        | LINK        |
| 595      | Info     | Q931 - Invalid parameter - IntfcId %d linkId %d on %s            | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 597      | Info     | Q931 - Invalid network msg - IntfcId %d linkId %d on %s          | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 598      | Info     | Q931 - Incomplete msg - IntfcId %d linkId %d on %s               | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |

| Alarm ID | Type   | Obsolete Message REPT String                                                   | CondType  | AID              | Entity Type |
|----------|--------|--------------------------------------------------------------------------------|-----------|------------------|-------------|
| 599      | Info   | Q931 - Invalid event - IntfcId %d linkId %d on %s                              | GP        | ISDNIF-%d-LNK-%d | ISDNL3      |
| 600      | Info   | Q931 - Disconnect confirm received                                             | Q931IRR   | COM              | ISDNL3      |
| 601      | Info   | Q931 - Endpoint initialization                                                 | Q931IRR   | COM              | ISDNL3      |
| 602      | Info   | Q931 - Status request failed                                                   | Q931IRR   | COM              | ISDNL3      |
| 615      | Info   | Q931 - Invalid call reference                                                  | DATAFLT   | COM              | ISDNL3      |
| 616      | Info   | TSMC - General Error                                                           | INTSFT    |                  | COM         |
| 617      | Info   | TSMC - File Error                                                              | INTSFT    |                  | COM         |
| 618      | Info   | TSMC - Memory Error                                                            | INTSFT    |                  | COM         |
| 619      | Info   | TSMC - SMI Error                                                               | INTSFT    |                  | COM         |
| 620      | Info   | TSMC - SMI Wait Timeout                                                        | INTSFT    |                  | COM         |
| 621      | Info   | TSMC - Timer Error                                                             | INTSFT    |                  | COM         |
| 622      | Info   | TSMC - Database Error                                                          | INTSFT    |                  | COM         |
| 623      | Info   | TSMC - T1 Queue Full                                                           | PROGFLT   |                  | COM         |
| 624      | Info   | TSMC - Relay Queue Full                                                        | DATAFLT   |                  | COM         |
| 626      | Info   | TSMC - T1 Reply timeout                                                        | PROGFLT   |                  | COM         |
| 696      | Normal | %s Entry %s already exists in the MG RM DB                                     | PRCDRERR  |                  | COM         |
| 697      | Normal | Could not validate params for %s Entry %s                                      | PRCDRERR  |                  | COM         |
| 698      | Normal | No Matching %s entry found in MG RM DB for %s                                  | PRCDRERR  |                  | COM         |
| 699      | Normal | Could not validate input parameters for %s Entry                               | PRCDRERR  |                  | COM         |
| 700      | Minor  | No PVC Endpoint provisioned for IOM-%d                                         | PRCDRERR  | COM              | COM         |
| 701      | Info   | No PVC Endpoint provisioned for IOM-%d cleared                                 | NORMAL    | COM              | COM         |
| 705      | Info   | SCCP - Syntax error in msg received from network - switch %d suId %d           | CCSNETIRR | COM              | COM         |
| 706      | Info   | SCCP - Invalid network message - parameter out of range                        | CCSNETIRR | COM              | COM         |
| 707      | Info   | SCCP - Invalid network message - message decoding error                        | CCSNETIRR | COM              | COM         |
| 708      | Info   | SCCP - Invalid network message - invalid msgType                               | CCSNETIRR | COM              | COM         |
| 730      |        | TCAP - Mandatory element is missing in a component or dialogue event structure | INTMSGERR | SP-%c            | COM         |
| 731      |        | TCAP - Invoke identifier in Invoke component request is already in use         | PROGFLT   | SP-%c            | COM         |
| 732      |        | TCAP - Invoke identifier in non-Invoke component request does not exist        | PROGFLT   | SP-%c            | COM         |
| 733      |        | TCAP - Dialogue id in the non-Query data request exist                         | PROGFLT   | SP-%c            | COM         |
| 734      |        | TCAP - Message type in the data request not expected in the current state      | DATAFLT   | SP-%c            | COM         |

| Alarm ID | Type     | Obsolete Message REPT String                                           | CondType | AID                             | Entity Type |
|----------|----------|------------------------------------------------------------------------|----------|---------------------------------|-------------|
| 738      |          | TCAP - Dialogue or invoke allocation failed due to configuration limit | PROGFLT  | SP-%c                           | COM         |
| 745      |          | INAP - Memory allocation failed for dialogue - sapId %d                | PROGFLT  | SP-%c                           | COM         |
| 746      |          | INAP - Could not allocate a new dialogue ID - sapId %d                 | PROGFLT  | SP-%c                           | COM         |
| 747      |          | INAP - Hash list init failed for dialogue - sapId %d dlgId %d          | PROGFLT  | SP-%c                           | COM         |
| 748      |          | INAP - Failed mem alloc for invoke CP - sapId %d dlgId %d invokeId %d  | PROGFLT  | SP-%c                           | COM         |
| 749      |          | INAP - SAP invokes exhausted - sapId %d dlgId %d invokeId %d           | PROGFLT  | SP-%c                           | COM         |
| 753      |          | INAP - Could not allocate memory for Transaction State Machine         | PROGFLT  | SP-%c                           | COM         |
| 754      |          | INAP - Could not allocate memory for Invoke State Machine              | PROGFLT  | SP-%c                           | COM         |
| 755      |          | INAP - Dialogue hash list insert failed - sapId %d dlgId %d            | PROGFLT  | SP-%c                           | COM         |
| 756      |          | INAP - Invoke hash list insert failed - sapId %d dlgId %d invokeId %d  | PROGFLT  | SP-%c                           | COM         |
| 757      |          | INAP - Dialogue hash list delete failed - sapId %d dlgId %d            | PROGFLT  | SP-%c                           | COM         |
| 777      |          | INAP - Bad dialogue ID - sapId %d dlgId %d state %d param %d           | PROGFLT  | SP-%c                           | COM         |
| 778      |          | INAP - Invoke ID missing - sapId %d dlgId %d state %d                  | PROGFLT  | SP-%c                           | COM         |
| 790      |          | never was used                                                         |          |                                 |             |
| 884      |          | IOM-%d-%s Trace Identifier Message Defect cleared                      | NORMAL   | IOM-%d-OC3-%d or IOM-%d-OC12-%d | OC          |
| 914      | Info     | ISUP - COT Passed - PC %s - CIC %d                                     | NORMAL   |                                 | TRK         |
| 915      | Info     | ISUP - evnt rcvd for an invalid DPC                                    | EXTERR   | PC-%s                           | COM         |
| 921      | Info     | Less than %d percent of trunks in TrkGrp %d are OOS                    | NORMAL   | TGRP-%d                         | TRK         |
| 924      | Normal   | ISUP ACC Congestion Level 1 cleared                                    | NORMAL   | COM                             | COM         |
| 925      | Normal   | ISUP ACC Congestion Level 2 cleared                                    | NORMAL   | COM                             | COM         |
| 926      | Critical | M3UA - SP-%c - Remote Node Unreachable - ChassisId %d SP-%c            | EXT      | COM                             | COM         |
| 927      | Info     | M3UA - SP-%c - Remote Node Reachable - ChassisId %d SP-%c              | NORMAL   | COM                             | COM         |
| 953      | Major    | IOM-%d VOIP faulted - cause - %s                                       | SFT      | IOM-%d                          | EQPT        |
| 1055     | Critical | M3UA - SP-%c - Remote Node Unreachable - PC-%d-%d-%d-SP-%c             | EXT      | COM                             | COM         |
| 1056     | Info     | M3UA - SP-%c - Remote Node Reachable - PC-%d-%d-%d-SP-%c               | NORMAL   | COM                             | COM         |