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About this document

Purpose

This document provides a complete guide of SS7/SIGTRAN module.

While reading this document, develop a better understanding of the following concepts:

- What functions the SS7/SIGTRAN module provides and how SS7/SIGTRAN is positioned in the network.
- Overview of OSPSCH and the procedures to configure and install platform enterprise.
- Input messages, output messages, and asserts.
- How to access the recent change and verify (RC/V) system to modify the databases.
- How to troubleshoot and clear maintenance problems for SS7/SIGTRAN issues.

What's new

Content updated
Issue 9 - July 2023 Updated the document for release 6.1.1.
Issue 8 - March 2021 Updated the document for release 5.1.31 and Up.
Issue 7 - January 2020 Updated the document for release 5.1.30.
Issue 6 - June 2019 Updated the document for release 5.1.29.
Issue 5 - August 2018 Updated the version 3.1 to 5.1.26.
Issue 4 - November 2016 Updated the company name (re-branding).
Issue 3 - March 2016 Updated the Legal agreement notice.
Issue 2 - November 2014 Updates to the current release R3.1.

Note

Any reference to OSP, OSPSCH, OSPOAM in this document is not applicable to MCAS R3.x.

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Intended audience

This document is intended for New Product Introduction (NPI) representatives, maintenance engineers, Tier 1/Tier 2/Tier 3 support technicians and other technicians who operate, maintain and make updates to the SS7/SIGTRAN network and functions.

How to use this document

The chapters included in this book contain the following information:

Chapter 1, “Overview”	Provides an overview of the SIGTRAN protocol.
Chapter 2, “Software description ”	Describes the SS7 subsystem, logging, measurement, user interfaces, User System Language Interface (USLI) and Recent Change and Verify (RC/V).
Chapter 3, “Operations, administration and maintenance”	Describes the administrative tools, managing platform processes, administering SS7, administering SIGTRAN, and measurements.
Chapter 4, “MCAS Enterprise Setup”	Describes the following: OSP setup (only for OSP). ITU setup (for OSP and non-OSP)
Chapter 5, “Installation and replacement of Adax LPe and PCIe HDC3 boards on HP ProLiant DL380 Gx rack servers”	Describes the installation and replacement procedures of Adax LPe and PCIe HDC3 boards on HP ProLiant DL380 Gx rack servers.
Chapter 6, “Input, output and alarm messages ”	Describes the input, output, asserts, and alarm output messages.
Chapter 7, “Recent change and verify”	Provides an introduction to recent change and verify (RC/V) system and describes RC/V forms
Chapter 8, “Maintenance”	Provides procedures for isolating faults and also provides the procedures for backup and recovery.
Index	Provides an alphabetical list of the terms and concepts contained in this document, and indicates their location.

Conventions used

Appearance	Description
emphasis	Text that is emphasized

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Appearance	Description
graphical user interface text	Text that is displayed in a graphical user interface
`system input`	Text that the user types as input to a system
`system output`	Text that a system displays or prints
`variable`	A value or command-line parameter that the user provides
[ ]	Text or a value that is optional
{*`value1`*|*`value2`*} {*`variable1`*|*`variable2`*}	A choice of values or variables from which one value or variable is used
`/sn/bin/Backuptape`	Text that is used to display commands

Related information

The following document provides related information:

- MCAS R3.1 System Administration Guide

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1 Overview

1.1 Overview

1.1.1 Purpose

This chapter provides an overview of the SIGTRAN protocol.

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SIGTRAN Overview

1.2 Overview

1.2.1 Purpose

The platform can provide an SS7 module that may be delivered separately to provide SIGTRAN services to another platform. The stack is supported for the Linux OS and may be installed and managed as third party software.

The platform SS7 stack supports the M3UA and M2PA protocols. The overview will cover the SCTP, M3UA and M2PA protocols.

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1.3 Stream Control Transmission Protocol (SCTP)

1.3.1 Overview

SCTP is a reliable transport protocol operating on top of a potentially unreliable connectionless packet service such as IP. SCTP was designed to provide a general-purpose transport protocol for message-oriented applications, as is needed for signaling data. SCTP defines the concept of an association. An association is the relationship between two SCTP endpoints. An association is identified by the transport addresses of the association endpoints.

1.3.2 SCTP advantages

SCTP offers two major advantages to the TCP protocol:

1. Support for Multi-homing – SCTPs multi-homing capability provides fault tolerance and redundancy. SCTP allows multiple IP addresses to be defined for an association. This capability allows multiple paths to be supported for each SCTP association. One path is marked as primary. If that path fails, traffic is automatically failed over to another path through the network. The SS7 stack supports a maximum of two paths per association.

   Note: SCTP supports a heartbeat mechanism that ensures the secondary path is available to take over traffic at any given time.

2. Support for multiple streams – SCTP supports the concept of multiple streams within an SCTP association. Each stream may deliver messages in order. This capability is achieved by the use of sequence numbers tracked on a per stream basis. This helps eliminate the TCP head-of-line blocking issue where data processing is blocked for the entire TCP connection when waiting for retransmission of the next byte. At most, for SCTP, data is only blocked on a single stream. The SS7 stack supports the following number of streams for each protocol type:
   - M3UA - Total 17 streams. 16 streams for data and 1 stream for control messages
   - M2PA - Total 2 streams. 1 stream for data and 1 stream for control messages
   - Diameter/SCTP - Total 17 streams. 16 streams for data and 1 stream for control messages

SCTP is the transport recommended for Adaptation Layers such as M3UA and M2PA. However, it can also be used for reliable transport of IP-based protocols such as Diameter and SIP. The platform stack supports SCTP transport for M3UA, M2PA, and diameter protocols.

1.3.3 SCTP specification compliance

The platform SS7 stack is compliant to the following RFCs: RFC2960, RFC3309, RFC 4460, RFC 4960.

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1.4 MTP – Level 3 User Adaptation Layer (M3UA)

1.4.1 Overview

M3UA defines a protocol for supporting the transport of any SS7 MTP3 user signaling (for example, ISUP/SCCP messages) over IP using the services of the SCTP. M3UA is suitable for transfer messages of any MTP3 user part. M3UA defines messages for tasks such as data delivery, signaling network management (that is, destination availability status), node, and traffic status. The platform SS7 stack supports both ANSI and ITU network configurations for M3UA.

1.4.2 M3UA concepts

M3UA defines the concepts of an Application Server (AS), Signaling Gateway (SG) and an Internet Protocol Server Process (IPSP).

- Application Server (AS) - A logical entity serving a specific Routing Key. An example of an Application Server is a virtual switch element handling all call processing for a signaling relationship, identified by an SS7 point code. The AS contains a set of one or more unique Application Server Processes (ASP), of which one or more is normally actively processing traffic. The platform may act as an Application Server.
- Signaling Gateway (SG) - An SG is a signaling node that supports traditional SS7 signaling at the edge of the IP network. So, an SG appears to the SS7 network as an SS7 Signaling Point. The signaling gateway is capable of performing a nodal interworking function between traditional SCN nodes and SIGTRAN enabled nodes. An SG contains a set of one or more unique Signaling Gateway Processes (SGP), of which one or more is normally actively processing traffic.

  It is the responsibility of M3UA on the Signaling Gateway to decide whether to accept or reject an SCTP association request by M3UA peer. This decision will be done based on configurable parameters such as peer ip address received from SCTP after association establishment. The platform does not act as a Signaling Gateway.
- IP Server Process (IPSP) - A process instance of an IP-based application. An IPSP is essentially the same as an ASP, except that it uses M3UA in a point-to-point fashion. Conceptually, an IPSP does not use the services of a Signaling Gateway node.

  Note: An IPSP may also be referred to as a Remote ASP (RASP) in MCAS product documentation. The platform stack may act as an IP Server Process.

  The M3UA standard defines two interfaces, an ASP-SGP interface and an IPSP-IPSP interface.

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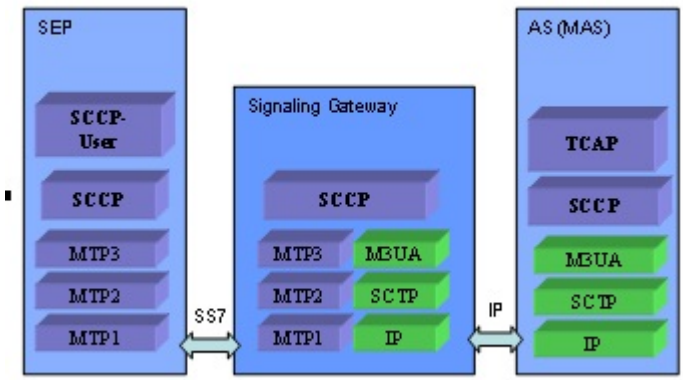
1.5 ASP – SGP Interface

1.5.1 Overview

The platform stack supports the ASP – SGP interface. In this case the stack acts as the ASP and connects in a client-server relationship to a Signaling Gateway. This capability is most useful when connecting to SS7 endpoints that do not support M3UA. This may also be used when there are a large number of Signaling End Points (SEPs) in the network and use of the Signaling Gateways management functions are desirable. The Signaling Gateway would perform the Nodal inter-working function as depicted in Figure 1-1, “Signaling Gateway support of NIF” (p. 45). M3UA standard defines a number of routing keys that may be used. However, the platform SS7 stack supports only one routing key type; **point code.**

1.5.2 Description

Figure 1-1 Signaling Gateway support of NIF



The connections between the SEP and the Signaling Gateway are traditional SS7 signaling links where as the connections between the SG and the ASP are IP-based SCTP associations.

The platform supports up to 16 SCTP Associations to connect to up to 10 Signaling Gateways per node. The platform may be configured to route to up to 1024 Destination Point Codes through these Signaling Gateways.

In a standalone configuration, the platform supports up to definition of up to 16 AS on a single node. Each AS may be configured to support up to 16 ASPs.

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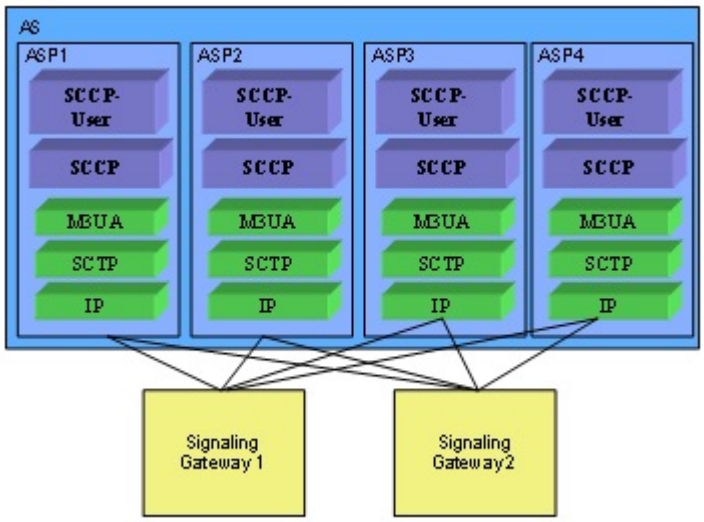
1.6 M3UA Support in a Distributed SS7 Cluster

1.6.1 Overview

The platform SS7 stack supports M3UA in a Distributed SS7 cluster where multiple nodes are acting as a single SS7 Point Code. This configuration is depicted in Figure 1-2, “M3UA in a Distributed SS7 Cluster” (p. 46).

1.6.2 Description

Figure 1-2 M3UA in a Distributed SS7 Cluster



The platform SS7 stack acts as a **single** AS in a Distributed SS7 cluster. As the only supported routing key for M3UA is Point Code, the entire cluster is identified by this Point Code. Within the AS, multiple ASPs are supported. **One** ASP is supported for each node in the cluster. So, a maximum cluster size of **32** supports a maximum of **32** ASPs. Since each node is capable of supporting **16** associations, this comes to a maximum of **512** SCTP associations per Distributed SS7 cluster.

The M3UA standards also allow the Signaling Gateway to support multiple Signaling Gateway Processes (SGPs). The platform allows configuration of up to **2** SGPs per SG. So, from a Signaling Gateway perspective, the platform supports up to **10** Signaling and up to **20** SGPs.

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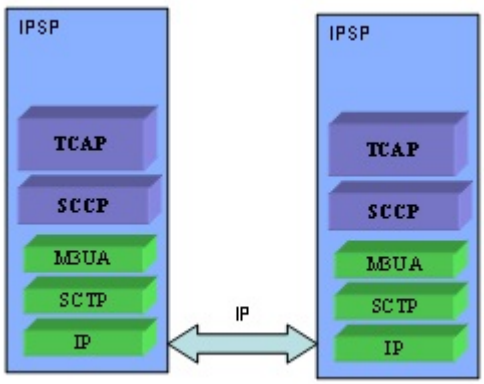
1.7 IPSP-IPSP interface

1.7.1 Overview

The SS7 stack also supports the IPSP-IPSP interface which allows it to connect in a point-to-point fashion to another M3UA enabled node. The platform stack supports acting as both a client and server IPSP. This interface may be used when direct connection to signaling endpoints is desirable.

1.7.2 Description

Figure 1-3 M3UA IPSP - IPSP interface



Using this interface, the platform SS7 stack supports up to **20** SCTP associations for IPSP-IPSP use. This capability allows connections up to **20** Remote ASPs.

The IPSP-IPSP interface is also supported when the platform is deployed as a Distributed SS7 cluster.

1.7.3 M3UA limitations

- The Alias Point Code concept defined in traditional SS7 standards is NOT supported for M3UA
- The Gateway functionality (where ANSI and ITU Point Codes are simultaneously supported) is NOT supported for M3UA.
- GTT performed at the platform SS7 stack is NOT supported for M3UA
- Multiple Network Appearance values in a clustered configuration are NOT supported
- Support for the ISUP protocol over M3UA/SCTP/IP is NOT supported.

1.7.4 M3UA specification compliance

The platform SS7 stack is compliant to M3UA specifications RFC4666.

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1.8 MTP – Level 2 Peer-to-Peer Adaptation Layer (M2PA)

1.8.1 Overview

M2PA provides MTP3 with an interface and services similar to MTP2. In affect, MTP2 and lower layers of the traditional SS7 protocol stack are replaced by an IP equivalent. The SCTP association acts as an SS7 link between the IPSPs with the M2PA protocol above it. If required, M2PA allows the full use of SCTP as defined in RFC 2960, including the use of multi-homing.

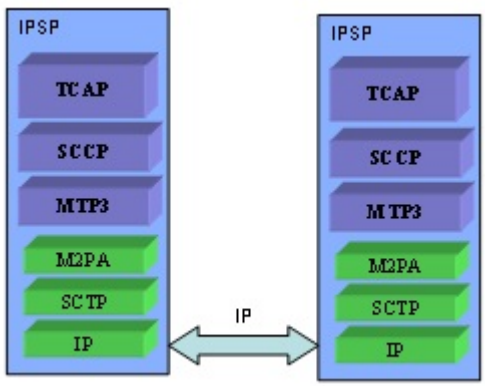
An IPSP may have the Signaling Connection Control Part (SCCP) and other SS7 layers above MTP3.

Since full MTP3 is supported, the following is true for M2PA:

- The platform appears as an SS7 node that is assigned a unique Point Code. This is different from M3UA where the concept of Routing Keys is introduced. For M2PA, the platform configuration and appearance are more similar to the traditional SS7 model.
- The Alias Point Code concept is supported in an M2PA environment since full MTP3 functionality is available.
- Connection appears as an SS7 link
- SS7 linksets are supported for M2PA
- Up to 20 M2PA associations/links are supported per SS7/SIGTRAN node

1.8.2 Description

Figure 1-4 M2PA interface



The M2PA RFC specifies that M2PA use two streams in each direction for each association. Stream 0 in each direction is designated for Link Status messages. Stream 1 is designated for User Data messages, as well as Link Status messages that must remain in sequence with the User Data messages. Separating the Link Status and User Data messages into separate streams allow M2PA to prioritize the messages in a manner similar to MTP2.

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The platform SS7 stack complies with the M2PA spec and supports a maximum of two in-streams and two out-streams for the M2PA Protocol.

1.8.3 M2PA Specification Compliance

The platform SS7 stack is compliant to the M2PA specification, RFC4165

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2 Software description

2.1 Overview

2.1.1 Purpose

The chapter describes the SS7 subsystem, logging, measurement, User interfaces, User System Language Interface (USLI), Recent Change and Verify and Simple Network Management Protocol (SNMP) interface.

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OA&M core functions

2.2 Overview

2.2.1 Purpose

This section describes the OA&M core functions supported by the platform.

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2.3 SS7 subsystem

2.3.1

The platform supports applications which exchange signaling information with wireline or wireless network elements via the SS7 signaling network or via SS7 over IP network.

The platform can provide SS7 support in two different network configurations:

- Stand alone SS7 Node: A single platform owns all of the links for a given point code. All SS7 Messages destined for that point code will be delivered to that specific platform either via the traditional SS7 signaling network or SS7 over IP network.
- Distributed SS7 Cluster: A group of platform SS7 nodes are members of an SS7 cluster. Each platform SS7 node in the cluster can terminate links or SCTP associations. All of the SS7 nodes in the cluster appear to be in the same point code from the SS7 network perspective. SS7 messages destined for the point code may be relayed between the cluster members when necessary.

A distributed SS7 cluster consists of up to sixteen SS7 nodes for Solaris and thirty two SS7 nodes for Linux. This cluster acts as a single SS7 network element supporting a single point code in the SS7 network. In order to act as a single network element supporting the same point code, all nodes in the cluster must exchange information to maintain the necessary data synchronization among the nodes and to relay SS7 messages between certain nodes when necessary. This information exchange happens over the internal MSGH Local Area Network (LAN).

For more information on Distributed SS7 Cluster Support, see “Administering SS7” (p. 83) and “Administering SIGTRAN protocols” (p. 185).

The platform also supports applications which filter SMS-related signaling information among all the GSM MAP signaling information between network elements, and relay the needed signaling information to the intended destination without responding to the origination.

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2.4 Logging

2.4.1

Logging provides the framework for platform processes and applications to log messages to system log files.

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2.5 Measurement

2.5.1

The MEAS subsystem collects measurements from SCHs, SPAs, and other functional areas. A measurement database capable of storing measurements for a configurable period of time (up to 7 days) allows the user to access measurement data and to generate reports.

Platform subsystems peg and store counts of their activity to be collected by the platform at regular intervals. Administrators use these platform measurements to analyze platform and troubleshoot problems.

The MEAS subsystem supports the following functionality:

- Request a measurement report on-demand
- Allow or inhibit measurement collection
- Configurable collection times by measurement (5, 15, 30, 60 minutes, or daily)

In addition the following functionality is supported for platform measurements only:

- Instruct the system to print measurement reports at regular time intervals
- Allow or inhibit measurement reporting
- Configure measurements retention time

2.5.2 Measurement Log

Measurement data is logged at the set interval. This consists of two files: */sn/log/measlog0* and */sn/log/measlog1*. These files are used in a circular fashion.

The system first writes to **`measlog0`**. When it is filled, messages are saved in **`measlog1`**. When this is filled, **`measlog0`** is cleared and messages are sent to **`measlog0`**, etc.

Note: **`measlog1`** and **`measlog0`** are setup by default in the RC/V menu.

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2.6 Database operations

2.6.1 Overview

Most of the operations performed using the RC/V system will involve entering new data or modifying existing data. These are the main database operations performed through RC/V.

2.6.2 Operations

Operations are processes that occur when you enter commands to initiate or control database activities. These processes may consist of database operations, or recent change and verify operations. They can be the result of main menu commands, form commands, text commands, input commands, and so forth, depending on where the commands are entered.

2.6.3 Options

An *option* is a parameter associated with an operation. For example, `VFYSCIMG` verifies the session parameter settings for a screen image.

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2.7 INIT subsystem

2.7.1 Overview

Platform processes run under control of the INIT subsystem, which -manages process startup, monitors process sanity, and handles process restart on failure. Platform processes are classified as *permanent* or *temporary*:

- Permanent processes are created when the platform boots and should always be running. These processes perform platform functions (such as interprocess communications, measurement collection, and so on).
- Temporary processes are created in response to a request from another process and can be terminated in the normal course of operations. These processes include services and the Command Execution Programs (CEPs) used to execute input messages.

2.7.2 Controlling Node Reboots

When a critical process encounters repeated initialization failures, INIT escalates to full restart of all processes without rebooting the node. The maximum number of restarts is controlled by **`sys_init_threshold`** parameter in initlist.

If the total number of restarts exceeds **`sys_init_threshold`**, INIT performs full OS level node reboots. Those continue indefinitely until a successful initialization can be performed. If an optional parameter, **`max_boots`**, is present in initlist, then after the **`max_boots`** node reboots have occurred, INIT will no longer boot the node, the initializations will revert to full initialization of all processes without node reboot.

The acceptable value for **`max_boots`** is 1-99.

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2.8 Message Handler (MSGH)

2.8.1

Platform inter-process communication is based on a uniform, fast message interface. This communication, both for call-processing and Operations, Administration, Maintenance, and Provisioning (OAM&P) functions, is provided by the MSGH.

The MSGH supports an efficient, common message transport capability used by all other processes. In addition, the MSGH also provides a time-out facility that allows processes to avoid a deadlock when sending/receiving messages.

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2.9 Scheduler

2.9.1

Scheduler (SCHED) schedules periodic events that must occur on the system, such as audits, measurements, and file system and database backups.

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User interfaces

2.10 Overview

2.10.1 Purpose

This section describes the user interfaces supported by platforms.

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2.11 User System Language Interface (USLI)

2.11.1

USLI provides the platform Input Messages (IMs) administrators use to perform OA&M activities, and the Output Messages (OMs) that report on those activities. USLI also supports the alarm interface.

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2.12 Recent Change and Verify (RC/V)

2.12.1

The RC/V system provides a menu mode and text mode data-update mechanism for managing platform and service data. It provides an interface between the system copies of the data and the user.

The RC/V system is designed with three objectives in mind:

- Shield the user from complex data relationships by offering a logical view of the database
- Guarantee data integrity
- Notify corresponding process when required to apply the changes and adjust their behavior without restarting

For a detailed description of the RC/V system, see Chapter 7, “Recent change and verify”.

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3 Operations, administration and maintenance

3.1 Overview

3.1.1 Purpose

This chapter describes the administrative tools, SNMP manager link setup, managing platform processes, administering SS7, administering SIGTRAN and measurements.

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Administrative tools

3.2 Overview

3.2.1 Purpose

This section describes the principal administrative tools.

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3.3 Principal administrative tools

3.3.1

The platform provides three principal administrative tools:

- The User System Language Interface (USLI) provides a text-based OA&M interface. USLI commands, or *input messages*, let you monitor platform and service status, administer services, manage alarms, update software, and the like. A colon separates the action to be performed from the function or data to be acted on:

  Example:

  `alw:restart;`

  This command tells the platform to allow process restart. The semicolon at the end of the command is optional. The platform adds the semicolon if you omit it.

  You execute USLI commands at the command line of the UNIX console window. USLI *output messages* provide information on status, alarms, and command execution results.

  For more information on input, output and alarm messages, see Chapter 6, “Input, output and alarm messages ”.

- UNIX *scripts* are available for security, backup and recovery, and other functions.
- A form-based *Recent Change and Verify (RC/V)* system lets you provision message logs, billing, measurements, scheduled events, and external interfaces.

  For more information on recent change and verify system, see Chapter 7, “Recent change and verify”.

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Managing platform processes

3.4 Overview

3.4.1 Purpose

This section describes the platform processes and procedures to manage them.

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3.5 INIT subsystem

3.5.1 Overview

Platform processes run under control of the INIT subsystem, which -manages process startup, monitors process sanity, and handles process restart on failure. Platform processes are classified as *permanent* or *temporary*:

- Permanent processes are created when the platform boots and should always be running. These processes perform platform functions (such as interprocess communications, measurement collection, and so on).
- Temporary processes are created in response to a request from another process and can be terminated in the normal course of operations. These processes include services and the Command Execution Programs (CEPs) used to execute input messages.

3.5.2 Controlling Node Reboots

When a critical process encounters repeated initialization failures, INIT escalates to full restart of all processes without rebooting the node. The maximum number of restarts is controlled by **`sys_init_threshold`** parameter in initlist.

If the total number of restarts exceeds **`sys_init_threshold`**, INIT performs full OS level node reboots. Those continue indefinitely until a successful initialization can be performed. If an optional parameter, **`max_boots`**, is present in initlist, then after the **`max_boots`** node reboots have occurred, INIT will no longer boot the node, the initializations will revert to full initialization of all processes without node reboot.

The acceptable value for **`max_boots`** is 1-99.

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3.6 Checking process status

3.6.1 Overview

Use the **op:init** command to check process status and the history of system resets. Please refer to the output message for the **op:init** command in the "User Reference Manual". To check the status of all processes on a platform, enter the following command in the input command area:

op:init

To check the status of a given process on a platform—the BILL process, for example, which the platform uses to collect billing information—enter the following command in the input command area:

op:init,proc=BILL

3.6.2 Output

Important! The process name is case-sensitive. You can check the case by examining the output of **op:init** with no options.

The platform displays the following output:

```
PROC PID  TYPE  TMR  STEP STATE   RESTART  SOFTCHK  NODE  GQ
---- ---  ----  ----  ---- ----   -------  ----  -----
BILL 473  NC  180  STEADY  RUNNING  ALW      ALW    cc0   Y
```

Table 3-1, “op:init Output Fields” (p. 71) describes the **op:init** output fields.

Table 3-1 op:init Output Fields

Field	Description
PROC	The name of the process as specified in the **msgh_name** parameter in the file `/sn/init/initlist`.
PID	The UNIX process ID.
TYPE	The process category: NC for non-critical, IC for initialization critical, CC for call-processing critical. For more information, see 3.7.3 “Process Categories and Recovery” (p. 75).
TMR	The interval in seconds for process sanity-checking.
STEP	The current process synchronization step.
STATE	The current process state: NOEXIST, CREATING, HALTED, RUNNING, or DEAD.
RESTART	Whether process restart is allowed or inhibited: ALW for allowed, INH for inhibited.

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Table 3-1 op:init Output Fields (continued)

Field	Description
SOFTCHK	Whether recovery escalation is allowed or inhibited: ALW for allowed, INH for inhibited.
NODE	The node ID of the host machine.
GQ	Whether the process has a global queue: **Y** for yes, **N** for no, **NA** for not applicable.

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3.7 Process Characteristics

3.7.1 Overview

INIT manages permanent processes based on parameters in the file */sn/init/initlist*. Ordinarily, you should have no reason to modify this file. However, occasionally you may be required to change the value of a parameter to improve platform functioning -- you might want to configure output message brevity control, for example, to prevent the same output message from being printed multiple times.

Note: Inappropriate modifications of the initlist can cause platform degradation possibly resulting in lose of call processing capabilities. Only experienced users should modify the *initlist*.

3.7.2 initlist

Here is the *initlist* entry for the BILL process:

```
msgh_name=BILL run_lvl=90 on_active=YES
path=/sn/bill/bill
user_id=0 sanity_timer=180 msgh_qid=38
global_queue_timer=300
```

You will not see the same parameters for every process -- some parameters are optional. The only required parameters are **msgh_name**, **run_lvl**, **path**, and **user_id**. Unspecified parameters use the platform defaults set in *initlist*.

Table 3-2, “initlist Process Parameters” (p. 73) describes the *initlist* process parameters.

Table 3-2 initlist Process Parameters

Parameter	Description
msgh_name	The unique name of the process.
run_lvl	The process run level. For more information, see 3.8 “Process Run Level” (p. 76).
path	The full pathname of the executable file init uses to create the process.
user_id	The user ID of the process.
msgh_qid	The value of the MSGH qid for the process.
priority	The UNIX priority level of the process.
sanity_timer	The interval in seconds for process sanity-checking.
restart_interval	The interval in seconds for process restart attempts.
restart_threshold	The number of process restart attempts in the restart_interval.
inhibit_restart	Whether to inhibit restart attempts: **Y** for yes, **N** for no.

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Table 3-2 initlist Process Parameters (continued)

Parameter	Description
process_ category	The process category: NC for non-critical, IC for initialization critical, CC for call-processing critical. For more information, see 3.7.3 “Process Categories and Recovery” (p. 75).
init_complete_ timer	The interval in seconds for completion of process initialization before recovery action is taken.
create_timer	The interval in seconds for completion of process creation before recovery action is taken.
procinit_timer	The interval in seconds for completion of procinit() before recovery action is taken.
error_threshold	The number of errors a process can accumulate before recovery action is taken.
error_dec_rate	The rate per minute at which cumulative errors are decremented.
crerror_inh	Whether to inhibit recovery action for errors generated by CRERROR(): **Y** for yes, **N** for no.
inhibit_softchk	Whether to inhibit accumulation of errors: **Y** for yes, **N** for no.
q_size	The size in bytes of the process message queue.
global_queue_ timer	The interval in seconds for the process to acknowledge ownership of a global queue.
brevity_low	The number of occurrences of the same output message in the brevity_interval before brevity control is deactivated.
brevity_high	The number of occurrences of the same output message in the brevity_interval before brevity control is activated.
brevity_interval	The interval in seconds in which the same output message occurs more than once.
msg_limit	The number of messages permitted in the process message queue.
ext_path	The path to the external executable. This variable is added when a third party package is monitored by the extmon process.
third_party	If this parameter is set toYES, then INIT will spawn an internal thread to monitor the third party package, such as APACHE. The default setting is NO.

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3.7.3 Process Categories and Recovery

INIT examines the *process category* in the */sn/init/initlist* file to determine whether to reset the platform after repeated attempts to restart a process have failed. Resetting the platform reinitializes *all* platform processes. If the process continues to fail after a platform reset, INIT specifies a full, Unix-level system reboot.

Process categories are as follows:

- A *Non-Critical (NC)* process is not required for platform initialization or call processing. INIT does not reset the platform after repeatedly -failing to restart a non-critical process.
- An *Initialization Critical (IC)* process is required for platform -initialization but not for call processing. INIT resets the platform after repeatedly -failing to restart an initialization critical process during -initialization but not after initialization.
- A *Call-processing Critical (CC)* process is required for call processing. INIT resets the platform after repeatedly -failing to restart a call-processing critical process. Ordinarily, all service processes are call-processing critical.
- A *pseudo-critical (PC)* process is required for call processing but does not satisfy certain requirements for INIT subsystem interfaces. INIT resets the platform after repeatedly failing to restart a pseudo-critical process.

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3.8 Process Run Level

3.8.1 Overview

INIT starts or restarts processes only if their *run levels* are less than or equal to the platform run level specified in the **`sys_run_lvl`** parameter in the */sn/init/initlist* file. INIT uses process run levels to determine the order in which processes are started at platform bootup -- the lower the process run level, the sooner INIT starts the process.

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3.9 Reinitializing processes

3.9.1 Description

As noted in 3.7 “Process Characteristics” (p. 73), you may occasionally need to modify process parameters in the */sn/init/initlist* file. After modifying the file, use the **`set:runlvl`** command to cause INIT to reread *initlist*.

Enter the following command in the input command area:

`set:runlvl=<sys_run_lvl>,[machine=<node_name>]`

where

<sys_run_lvl> is the platform run level specified in *initlist*

<node_name> is the R-C-S location name of the machine/server (For example, 0-1-0 or 0-0-1).

If the process is stopped and its run level is less than the platform run level, **`set:runlvl`** restarts it. If the process is already running, you will need to restart it manually, as described in 3.10 “Restarting processes manually” (p. 78).

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3.10 Restarting processes manually

3.10.1 Description

If INIT repeatedly fails to restart a process, or if you need to reinitialize a running process, you can restart the process manually by entering the following command in the input command area:

init:proc=<*proc_name*>,level=<*n*>,[machine=<*node_name*>]

where

<proc_name> is the name of the process

n specifies whether to reload provisioning data: 0 for no, 1 for yes

<node_name> is the name of the CC for which the command is intended. Possible values are CC0 or CC1.

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3.11 Resetting the platform run level

3.11.1 Description

Use the **set:runlvl** command to specify a platform run level higher than its current setting. You might want to do that to enable a process with a current run level higher than that of the platform. Enter the following command in the input command area:

set:runlvl=<*sys_run_lvl*>,[machine=<*node_name*>]

where

<sys_run_lvl> is the new platform run level

<node_name> is the name of the CC for which the command applies, CC0 or CC1.

Note that you cannot use **set:runlvl** to adjust the platform run level to a value *lower* than its current setting -- as you might want to do if you were bringing the system down for maintenance and did not want platform processes to start on system reboot.

In that case, you would use the **set:bootlvl** command to set the platform run level to a value lower than the run level of *any* platform process. Enter the following command in the input command area:

set:bootlvl=20

A platform run level of 20 allows you to execute commands when the system reboots but otherwise prevents process restarts.

Once you have completed maintenance tasks, use **set:bootlvl** to reset the platform run level to its former value. Enter the following command in the input command area:

set:bootlvl=<*sys_run_lvl*>

where

<sys_run_lvl> is the former platform run level.

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3.12 Initlist convenience commands

3.12.1 Overview

Occasionally the user is instructed to modify an initlist process entry.

The **ChangeInitlist** and **ConfigurePlatform** commands are described below that can be used in many cases to ease the modification task.

3.12.2 ChangeInitlist

ChangeInitlist <options>

This is a root invoked command that can directly modify an entry of the initlist. actions to control the existing state of the platform process are not included in this command. Starting, stopping, inhibiting, or restarting the process identified on the command line are outside the scope of the **ChangeInitlist** command.

The following information is from the current command:

ChangeInitlist

This would modify the file */sn/init/initlist*.

Options are:

```
# Un-comment the entry msgh_name=process
enable <process>
```

Options are:

```
# Comment the entry msgh_name=process
disable <process>
```

Options are:

```
# Remove the entry msgh_name=process
remove <process>
```

Options are:

```
# Add newparameter=value to msgh_name=process prior to
# existingparameter
add_parameter <process> <existingparameter> <newparameter=value>
```

Options are:

```
# Modify parameter=oldvalue with parameter=newvalue
# associated with msgh_name=process.
modify_parameter <process> <parameter=oldvalue> <parameter=newvalue>
```

Options are:

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```
# Remove parameter=value associated with msgh_name=process.
remove_parameter <process> <parameter=value>
```

3.12.3 ChangeInitlist examples

The examples are as follows:

1. **ChangeInitlist disable MYPROC1**
2. **ChangeInitlist add_parameter MYPROC1 path sanity_timer=50**
3. **ChangeInitlist modify_parameter MYPROC1 sanity_timer=50 sanity_timer=60**
4. **ChangeInitlist enable MYPROC1**

3.12.4 ConfigurePlatform

This is a root invoked command that can be used to configure some platform capabilities, initlist, and initscripts.

initlist

Add line to initlist for this node and process, or add/modify global parameter.

For example:

**ConfigurePlatform initlist ASR5350 run_lvl=30 third_party=YES **

**process_category=PC user_id=0 sanity_timer=35 **

path=/ASR5350_delivery/bin/startMonitorI

ConfigurePlatform initlist global default_cleanup_timer=60

initlist -d

Delete line from initlist for this node and process, or delete previously added/modified global parameter.

For example:

ConfigurePlatform initlist -d ASR5350

ConfigurePlatform initlist -d global default_cleanup_timer

initscript

Add startup/shutdown/failover script to be run by init.

For example:

**ConfigurePlatform initscript startup **

/vendorpackages/myinstall_dir/S99abcscript

If shutdown script is same script but different name, link to start script.

**ConfigurePlatform initscript shutdown K98abcscript **

linkto S99abcscript

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If shutdown script is a separate script.

```
ConfigurePlatform initscript shutdown \
/vendorpackages/myinstall_dir/K98abcscript
```

initscript -d

Delete startup/shutdown/failover script to be run by init.

For example:

```
ConfigurePlatform initscript startup –d S99abcscript
```

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Administering SS7

3.13 Overview

3.13.1 Purpose

This section describes the procedure to administer SS7 components.

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3.14 Getting Started

3.14.1 Overview

Before you begin any procedures for the **SS7 SERVICE CIRCUIT HANDLER SUBMENU**, make sure you have defined the control parameters for the .

3.14.2 Form versions

The forms in this chapter, including corresponding descriptions, are marked for each version where appropriate. If the documentation does not specify a form version, use that form for ITU, ANSI, and CHN.

3.14.3 GWIA overview

The GWIA provides a mixed point code format platform to support communication with two networks with different point code formats. The can be installed as a GWIA to support ITU and ANSI point code formats concurrently. You may configure specific SS7 link sets to be in the ITU network and others to be in the ANSI network.

If your network platform is a gateway platform, Submenus 3.1 through 3.7 except for 3.5 and 3.6 will prompt you to select either ITU or ANSI form versions. You may enter 1 for ITU or 2 for ANSI. The default is ITU. After you select the form version, the appropriate form displays.

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3.15 SS7 Link Administration

3.15.1 Purpose

The main responsibility of the is to provide routing or subscriber information that is requested by a Service Switching Point (SSP). To do this, the must be able to receive, respond to, and send Signaling System 7 (SS7) messages.

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3.16 Platform SS7 components status display and reconfiguration

3.16.1 Reconfiguring SS7 components

You can manually reconfigure SS7 components by using input messages. Note that SS7 components should be reconfigured using input messages.

Also note that these SS7-related commands change the maintenance status of a platform SS7 functional component.

3.16.2 SS7 interface controller states

Table 3-3, “SS7 interface controller states description” (p. 87) lists the states that an SS7 interface controller can assume:

Table 3-3 SS7 interface controller states description

State	Description
UNEQ	The controller is not equipped, and the software will not allow any reconfigurations on such a controller.
OOS	The controller has been taken out of service by automatic fault recovery software, and automatic fault recovery actions are still in progress.
MOOS	This state can have two meanings: • It can mean that a controller has been manually taken out of service. • It can mean that automatic fault recovery actions were unsuccessful in bringing the controller back into service and that manual intervention is now needed to bring it into service.
ACT	The controller is active and is either already supporting SS7 link(s) or is capable of supporting it.

3.16.3 SS7 interface controller administration (overview)

Table 3-4, “SS7 interface controller actions” (p. 87) lists the actions that can be performed on an SS7 interface controller. In cluster mode, only local interface controller can take the following actions.

Table 3-4 SS7 interface controller actions

Action	Description
REMOVE	Take an active controller out of service. Note that normally a controller cannot be removed from service if it is supporting active links or links that are being automatically recovered. If needed, such a controller must be removed from service unconditionally, that is, with the UCL option.
RESTORE	Restore to service a controller that was manually removed from service.

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Table 3-4 SS7 interface controller actions (continued)

Action	Description
DIAGNOSE	Run the diagnostics procedures on a controller that has been manually removed from service.

3.16.4 SS7 link states

Table 3-5, “SS7 link states” (p. 88) lists the states that an SS7 link can assume:

Table 3-5 SS7 link states

State	Description
UNEQ	The link is not equipped, and the software will not allow any reconfigurations on such a link.
OOS	The link has been removed from service by automatic fault recovery software, and automatic fault recovery actions are still in progress.
MOOS	A link has been manually removed from service.
BLK	A link is manually blocked from being established at either the platform or STP.
INH	A link is in service but has been manually inhibited from carrying SS7 message traffic.
ACT	A link is active and is either already supporting SS7 message traffic or is capable of supporting it.

3.16.5 SS7 link administration (overview)

Table 3-6, “SS7 link actions” (p. 88) lists the actions that can be performed on an SS7 link. In cluster mode only local links can take these actions.

Table 3-6 SS7 link actions

Action	Description
REMOVE	Take an active link out of service.
RESTORE	Restore to service a link that had been manually taken out of service.
INHIBIT	Inhibit a link from carrying SS7 message traffic.
ALLOW	Allow a link to carry SS7 message traffic.
BLOCK	Block a link from being established at the platform.
UNBLOCK	Unblock a link from being established at the platform.

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3.16.6 Related output messages

Table 3-7, “Output message summary (actions and events)” (p. 88) summarizes the output messages (actions and events) that relate to SS7 controllers and links. For more detailed information, refer to the following documents:

- *MCAS User Reference Guide*
- *MCAS Planning and Engineering Guide*

Table 3-7 Output message summary (actions and events)

Output Message	Description
ALW SLK	Completion and status report of an attempt to allow a link to carry SS7 message traffic.
CHG LS	Completion and status report of an attempt to change the in-service/out-of-service status of a link set.
CHG SLK	Completion and status report of an attempt to block or unblock a single link.
DGN SS7BRD	Completion and status report of an attempt to diagnose an SS7 Controller.
DUMP MEAS TYPE=LINK	A dump of traffic and plant measurements related to SS7 links.
DUMP MEAS	A dump of traffic and plant measurements related to the SS7 protocol.
DUMP MPR	A marginal performance report for a link.
INH SLK	Completion and status report of an attempt to inhibit a link from carrying SS7 message traffic.
OP LS	Report of existing SS7 link set configuration.
OP LSRPI	Report of existing SS7 link set number and route pattern index mapping.
OP LSST	Report of existing link set status base for each route pattern index.
OP LSXL	Report of existing link set translation table.
OP RPI	Report of existing route pattern indexes and the link sets that are associated with each index.
OP RPIRS	Report of the SS7 route pattern index and route set mapping.
OP ITURS	Report of existing route sets and their statuses in the ITU version.
OP RS	Report of existing route sets and their statuses in the ANSI version.
OP CHNRS	Report of existing route sets and their statuses in the CHINA version.
OP SCP	Report of the current state of the platform.
OP SLK	Report of a link's configuration and status.

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Table 3-7 Output message summary (actions and events) (continued)

Output Message	Description
OP:STATUS, SS7BRD	Report of a controller 's configuration and status.
RCVRY LINK-CGST	Report of link congestion event.
RCVRY LINK-MGTINH	Report to indicate that a link has been automatically uninhibited by link management.
RCVRY LKF	Report to indicate that a link that had previously failed, that is, was in the out-of-service state, has been restored to an active state.
RCVRY LKOTG	Report to indicate that the SAAL SS7 link has transitioned from the available state to the unavailable state as perceived by MTP level 3.
RCVRY LKSTO	Report to indicate that a link set outage condition has ended.
RCVRY PRO	Report to indicate that a processor outage condition has ended.
REPT LINK-CGST	Report of a link congestion event on a link.
REPT LINK-MGTINH	Report to indicate that a link has been manually inhibited.
REPT LKF	Report of a link failure.
REPT LK-FAILED	Periodic report to indicate that repeated automatic attempts to recover a failed link have not yet succeeded.
REPT LK-INACTIVE	Report to indicate that an automatic attempt to recover a link has failed.
REPT LKOTG	Report to indicate that the SAAL SS7 link has transitioned from the available state to the unavailable state as perceived by MTP level 3.
REPT LKSTO	Report to indicate that all links in a link set are unavailable.
REPT STP-PRO	Report to indicate that the platform is receiving processor outage indications on all links from a Signal Transfer Point (STP)
REPT SUSTNLKF	Report to indicate that the failed SAAL SS7 link attempting activation has failed to prove-in for a period exceeding the T19 Failed link craft referral timer.
REPT UNVLK-STCHG	Report to indicate that the SAAL SS7 link conveyed a minor state change for an unavailable signalling link, after which it remained unavailable to MTP user part message traffic as perceived by MTP level 3.
RMV SCP	Completion and status report of an attempt to remove a platform from service.
RMV SLK	Completion and status report of an attempt to remove a link from service.

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Table 3-7 Output message summary (actions and events) (continued)

Output Message	Description
RMV SS7BRD	Completion and status report of an attempt to remove a controller from service.
RST SS7BRD	Completion and status report of an attempt to restore a controller to service.
RMV SS7NODE	Completion and status report of an attempt to remove an SS7 node from the cluster.
RST SS7NODE	Completion and status report of an attempt to restore an SS7 node to the cluster.
OP SS7MASTER	Completion and status report of the node that is currently the Master SS7Ch for distributed SS7.
OP SS7NODE	Report of the current state of the local SS7 node

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3.17 SS7 link administration procedures (ANSI usage)

3.17.1 SS7 ANSI link maintenance procedures

The following is a list of SS7 link maintenance procedures (designed for ANSI standards):

- 3.18 “Establishing an SS7 link set (ANSI usage)” (p. 93)
- 3.21 “Permanently removing an SS7 Link Set” (p. 112)
- 3.22 “Adding an SS7 link to an existing link set” (p. 114)
- 3.23 “Changing an existing SS7 link in a link set” (p. 117)
- 3.27 “Permanently Removing an SS7 Link from an Existing Link Set” (p. 134)

3.17.2 When to use these procedures

These procedures are generally initiated in response to changes in call traffic demands across the SS7 network.

Important! Where prerequisites for this information are noted for the following tasks, do not begin the procedure until you have the necessary data. You can coordinate this data information with the network manager.

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3.18 Establishing an SS7 link set (ANSI usage)

3.18.1 Configuration restrictions

When you establish a new link set, two configuration restrictions apply:

- A link set should go to only one STP.
- A should be connected to two STPs.

If either restriction is violated, the procedures in this section will fail.

3.18.2 Procedure assumptions

These procedures assume that all hardware is in place for the links that are to be added as part of the link set.

3.18.3 Procedure overview

This procedure contains steps that are summarized as follows:

- Use the recent change and verify (RC/V) menu to enter information about the new link set and about the network element(s) for the new link set.

3.18.4 Before you begin

To perform this procedure successfully, you need the following information:

- The point code of the new STP
- The common language location identifier (CLLI) code for the far-end STP
- Whether the new link set will be part of a combined link set and, if so, the number of that combined link set
- The new signaling point codes that are accessible to the through the new STP

3.18.5 Steps

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

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Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

4

Select the **LINK SET FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **qu** and press **Enter** to query the database and display all the link set forms.

Result: The **LINK SET FORM** displays. Cursor at **LINK SET** field.

6

Record all STP point codes and link set numbers for the link sets that are already established. You will need this information later in this procedure.

7

On the link set form, review the currently assigned point codes and then choose the appropriate option:

If...	then...
link sets are already defined for two STP point codes in field 3...	Stop! Exit the RC/V system and contact the network administrator or manager.
the point code that you wish to add is already assigned to a link set in field 3...	Stop! A link set is already defined for this point code.
either none or one of the STPs is currently being used,	continue with Step 8.

8

Exit the form and re-enter in the INSERT database operation mode.

Enter the unique link set number in the **LINK SET** field. Complete the **LINK SET FORM** by supplying the appropriate information in the remaining fields.

9

If the link set that you are adding is part of a combined link set, in the **COMBINED LINK SET** field, enter the number of the newly created combined link set or the number of the already existing combined link set to which this link set will be added. If the link set is not part of a combined link set, enter 0 in this field.

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10

If you have completed the **LINK SET FORM**, press **i** and **Enter** to insert the change in the database.

Result: INSERT FAILED: POINT CODE not defined as point code of STP or SEP.

11

Return to the **NETWORK PLATFORM MAIN MENU** and select the **OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU** option.

Result: The **OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU** displays.

12

Select the **SS7 OFFICE PARAMETERS FORM** option.

Result:

```
Enter Database Operation
R=Review U=Update QR=QueryR QU=QueryU :
```

13

Note: Do not overwrite data for an STP that already has a link set defined.

From the SS7 OFFICE PARAMETERS FORM, use a query database operation (qu) to display the parameters. Go to the appropriate STP field (either STP 1 or STP 2, whichever is available for the new link set).

14

Determine the following:

If...	then...
in the NETWORK ID field	enter the first three digits of the point code.
in the CLUSTER ID field	enter the middle three digits of the point code.
in the MEMBER ID field	enter the last three digits of the point code.

15

Type menu command **u** and press **Enter** to update the changes in the database.

Result: The **SS7 OFFICE PARAMETERS FORM** displays. Cursor at **NETWORK ID** field.

16

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

17

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At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

18

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

19

Select the **LINK SET FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

20

Type menu command **`i`** and press **Enter**.

Result: The **LINK SET FORM** displays.

21

Enter appropriate values for the LINK SET field (a unique number between 1 and 32). Enter the appropriate value for the COMBINED LINK SET field (a number between 0 and 32). The combined link set number will be the same number as the link set in which this link set will be combined (that is, combined link sets have the same number in this field on the LINK SET FORM). Also enter values in the STP POINT CODE and the STP CLLI fields. All of these values are derived from the data that you must have before you begin this procedure.

22

When you are sure the information you entered is correct, type menu command **`i`** and press **Enter**.

Result:

```
inserting... FORM INSERTED
The LINK SET FORM displays.
```

23

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

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24

At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

25

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

26

Select the **ROUTING PATTERN INDEX FORM** option.

Result:

```
Enter Database Operation '
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

27

Type menu command **i** and press **Enter**.

Result: The **ROUTING PATTERN INDEX FORM** displays.

28

Messages are routed through a link set based on the Routing Pattern Index (RPI). Any RPI number is valid as long as it is unique and ranges between 1 and 32. From the SS7 Routing Pattern Index, query the database to note which RPIs (ROUTING PATTERN INDEX field) are currently assigned. You will need this information in Step 29.

29

When you are ready to enter the RPI, enter the unique RPI number in the **ROUTING PATTERN INDEX** field; then press **CARRIAGE RETURN**. Enter the link set number or combined link set number in the **NORMAL LINK SET** field; then press **CARRIAGE RETURN**.

Is there a C-LINK between the two STPs?

If Yes	If no
Enter the link set number from the to the other STP in Field 3 (FIRST ALTERNATE LINK SET). You must also add this new link set number to the RPI as ALTERNATE LINK SET for the other .	continue with Step 30.

30

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

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Result:

```
inserting... FORM INSERTED
The ROUTING PATTERN INDEX FORM displays.
```

31

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

32

At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

33

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

34

Select the **POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

35

Type menu command **i** and press **Enter**.

Result: The **POINT CODE FORM** displays.

36

Enter a NETWORK ID, a CLUSTER ID and a MEMBER ID, each with a value between 0 and 255 to define the point code.

37

At the **POINT CODE TYPE** field, enter a desired value and press **Enter**.

38

At the **ROUTING PATTERN INDEX** field, enter the RPI that was assigned in Step 29.

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39

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

```
inserting... FORM INSERTED
The POINT CODE FORM displays.
```

40

Repeat Step 35 through Step 39 for all other network elements that are available through the newly established link set. For all newly populated clusters that are available, use POINT CODE TYPE=POP_CLU. For all new member clusters that are available, use POINT CODE TYPE=SMEMBER. The RPI will be the same RPI that was determined in Step 29.

41

Type **<** and press **Enter** twice.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

42

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

43

Select the **MTP2 LINK FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

44

Type menu command **i** and press **Enter**.

Result: The **MTP2 LINK FORM** displays.

45

The new link set is now defined. Now you must add the links that comprise the new link set.

Enter the appropriate values for the GROUP NUMBER, SUBGROUP NUMBER, MEMBER NUMBER, and LINK CODE fields. These fields are populated based on data that you must have when you to begin this procedure. The LINK SET NUMBER field must have a value between 1 and 32 and must be the same number that you entered on the RCV LINK SET FORM. All other fields on the Link Form should retain their default values.

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46

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

```
inserting... FORM INSERTED
The MTP2 LINK FORM displays.
```

47

Repeat Step 45 and Step 46 for all links that are to be assigned to this link set, then continue with Step 48.

48

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU**.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

49

Type **!** and press **Enter**.

Result: RCV exits.

50

At the CMD prompt, enter the following input message:

RST:SLK=A-B-c

where A is the group number in the range of 0 to 31, B is the subgroup number (board number) in the range of 1 to 4, and c is the member number (port number) for the new link in the range of 1-20 (M2PA links).

Result: The RST:SLK=A-B-c IP message appears.

51

Choose the appropriate option:

If...	then...
the RST-SLK A-B-c COMPLETED message shows the link status in the ACT (active) state,	continue with the next step in this procedure.

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If...	then...
the RST-SLK A-B-c COMPLETED message shows the link status in the OOS (out of service) state,	perform the following actions as necessary to resolve the problem: • Recheck the SLC values entered at th • Check the output message logs for RF problem. • Recheck the hardware connections. • When other methods fail, contact your

52

Repeat Step 50 and Step 51 for all links that will comprise the new link set.

53

Perform link testing according to your local office practices.

END OF STEPS

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3.19 SS7 link administration procedures (ITU or CHN usage)

3.19.1 SS7 ITU link maintenance procedures

The following is a list of SS7 link maintenance procedures (designed for ITU standards):

- 3.20 “Establishing an SS7 link set (ITU or CHN usage)” (p. 103)
- 3.21 “Permanently removing an SS7 Link Set” (p. 112)
- 3.22 “Adding an SS7 link to an existing link set” (p. 114)
- 3.23 “Changing an existing SS7 link in a link set” (p. 117)
- 3.27 “Permanently Removing an SS7 Link from an Existing Link Set” (p. 134)

3.19.2 When to use these procedures

These procedures are generally initiated in response to changes in call traffic demands across the SS7 network.

Important! Where prerequisites for this information are noted for the following tasks, do not begin the procedure until you have the necessary data. You can coordinate this data information with the network manager.

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3.20 Establishing an SS7 link set (ITU or CHN usage)

3.20.1 Purpose

Perform this procedure to establish an SS7 link set.

3.20.2 Procedure assumptions

These procedures assume that all hardware is in place for the links that are to be added as part of the link set.

3.20.3 Before you begin

To perform this procedure successfully, you need the following information:

- Point code of the new STP
- Common Language Location Identifier (CLLI) code for the far-end STP
- Whether the new link set will be part of a combined link set and, if so, the number of that combined link set
- New signaling point codes that are accessible to the platform through the new STP

Configuration restrictions

When you establish a new link set, two configuration restrictions apply:

- A link set should go to only one STP.
- A platform network element should be connected to up to eight STPs (including two Home STPs, if distributed SS7 is not supported) or up to 12 STPs (including two Home STPs, if distributed SS7 is supported).

If either restriction is violated, the procedures in this section will fail.

3.20.4 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

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4

Select the **LINK SET FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **qu** and press **Enter** to query the database and display all the link set forms.

Result: The **LINK SET FORM** displays. Cursor at **LINK SET** field.

6

Record all STP point codes and link set numbers for the link sets that are already established. You will need this information later in this procedure.

7

On the link set form, review the point code assignments:

If...	then...
link sets are already defined for all the STP point codes in Field 3, (the STP POINT CODE field)...	Exit the RC/V system and contact the network administrator or manager.
the point code you are attempting to add is already assigned to a link set in Field 3, (the STP POINT CODE field)...	Stop! A link set is already defined for this point code. Contact the network administrator to verify point code data and to determine whether there is a need for duplicate link sets to the STP. If you need duplicate link sets, proceed to Step 9. If you do not need duplicate link sets, exit the RC/V system.
one or both of the STPs is currently being used,	go to Step 9.

8

Exit the form and re-enter in the INSERT database operation mode.

Enter the unique link set number in the **LINK SET** field. Complete the LINK SET FORM by supplying the appropriate information in the remaining fields.

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9

If the link set that you are adding is part of a combined link set, in the COMBINED LINK SET field, enter the number of the newly created combined link set or the number of the already existing combined link set to which this link set will be added. If the link set is not part of a combined link set, enter 0 in this field.

10

If you have completed the LINK SET FORM, press **i** and **Enter** to insert the change in the database.

Result: INSERT FAILED: POINT CODE not defined as point code of STP or SEP.

11

Return to the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** and select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

12

Select the ADJACENT REMOTE STP POINT CODE FORM option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

13

Type menu command **qr** and press **Enter** to display the defined STP point code which is connected to the link set.

Result: The **ADJACENT REMOTE STP POINT CODE FORM** displays. Cursor at **REMOTE STP ID** field.

14

Return to the **NETWORK PLATFORM MAIN MENU** and select the **OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU** option.

Result: The **OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU** displays.

15

Select the **SS7 OFFICE PARAMETERS FORM** option.

Result:

```
Enter Database Operation
R=Review U=Update QR=QueryR QU=QueryU :
```


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16

Note: Do not overwrite data for an STP that already has a link set defined.

From the SS7 OFFICE PARAMETERS FORM, use a query database operation (qu) to display the platform parameters. Go to the appropriate STP field (either HOME STP 1 or HOME STP 2, whichever is available for the new link set).

17

Type menu command **u** and press **CARRIAGE RETURN** to update the changes in the database.

Result: The **SS7 OFFICE PARAMETERS FORM** displays. Cursor at **NETWORK ID** field.

18

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

19

At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

20

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

21

Select the **LINK SET FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

22

Type menu command **i** and press **Enter**.

Result: The **LINK SET FORM** displays.

23

Enter appropriate values for the LINK SET field (a unique number between 1 and 32). Enter the appropriate value for the COMBINED LINK SET field (a number between 0 and 32). The combined link set number will be the same number as the link set in which this link set will be combined (that is, combined link sets have the same number in this field on the LINK SET

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FORM). Also enter values in the STP POINT CODE and the STP CLLI fields. All of these values are derived from the data that you must have before you begin this procedure.

24

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

```
inserting... FORM INSERTED
The LINK SET FORM displays.
```

25

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

26

At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

27

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

28

Select the **ROUTING PATTERN INDEX FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

29

Type menu command **i** and press **Enter**.

Result: The **ROUTING PATTERN INDEX FORM** displays.

30

Messages are routed through a link set based on the Routing Pattern Index (RPI). Any RPI number is valid as long as it is unique and ranges between 1 and 32. From the SS7 Routing Pattern Index, query the database to note which RPIs (ROUTING PATTERN INDEX) are currently assigned. You will need this information in Step 31.

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31

When you are ready to enter the RPI, enter the unique RPI number in the **ROUTING PATTERN INDEX** field; then press **CARRIAGE RETURN**. Enter the link set number or combined link set number in the **NORMAL LINK SET** field; then press **Enter**.

Is there any link between the mated STPs?

If Yes:	If no:
Enter the link set number from the platform to the other STP in Field 3 (FIRST ALTERNATE LINK SET). You must also add this new link set number to the RPI as ALTERNATE LINK SET for the other platform.	continue with Step 32.

32

When you are sure the information you entered is correct, type menu command `i` and press **CARRIAGE RETURN**.

Result:

```
inserting... FORM INSERTED
The ROUTING PATTERN INDEX FORM displays.
```

33

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

34

At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

35

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

36

Select the **POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

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37

Type menu command **i** and press **Enter**.

Result: The **POINT CODE FORM** displays.

38

At the **POINT CODE** field, enter a five digit number between 0 and 16383 to define the point code and press **Enter**.

39

At the **POINT CODE TYPE** field, enter **stp** and press **Enter**.

40

At the **ROUTING PATTERN INDEX** field, enter the RPI that was assigned in Step 31.

41

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

```
inserting... FORM INSERTED
The POINT CODE FORM displays.
```

42

Repeat Step 37 through Step 41 for all other network elements that are available through the newly established link set. For all new point codes that are available, use POINT CODE TYPE=SEP, STP or STEP.

The RPI will be the same RPI that was determined in Step 31, then continue with Step 43.

43

Type **<** and press **Enter** twice.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

44

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

45

Select the **MTP2 LINK FORM** option.

Result:

```
Enter Database Operation
```


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```
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

46

Type menu command **i** and press **Enter**.

Result: The **MTP2 LINK FORM** displays.

47

The new link set is now defined. Now you must add the links that comprise the new link set.

Enter the appropriate values for the GROUP NUMBER, SUBGROUP NUMBER, MEMBER NUMBER, and LINK CODE fields. These fields are populated based on data that you must have when you to begin this procedure. The LINK SET NUMBER field must have a value between 1 and 32 and must be the same number that you entered on the RCV LINK SET FORM. All other fields on the Link Form should retain their default values.

48

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

```
inserting... FORM INSERTED
The MTP2 LINK FORM displays.
```

49

Repeat Step 47 and Step 48 for all links that are to be assigned to this link set, then continue with Step 50.

50

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU**.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

51

Type **!** and press **Enter**.

Result: The subshl prompt appears.

52

Enter the input message

RST:SLK=A-B-c;

where A is the group number in the range of 0 to 31, B is the subgroup number (board number) in the range of 1 to 4, and c is the member number (port number) for the new link in the range of 1-20 (M2PA links).

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Result: The RST:SLK=A-B-c IP message appears.

53

When the RST-SLK 0 A B COMPLETED message displays,

If the message displays...	then...
Completed and the link is in the ACT state	go to the next step.
Completed and the link is in the OOS state	re-check the hardware connections and/or scan the OMlog and ROP for explanatory REPT:LKF messages. If the problem cannot be resolved locally, contact your network manager for assistance.

54

Repeat Step 52 and Step 53 for all links that will comprise the new link set.

55

After any link testing has been completed as part of your local office practices, you have completed this procedure.

END OF STEPS

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3.21 Permanently removing an SS7 Link Set

3.21.1 Purpose

Perform this procedure to permanently remove an SS7 link set.

3.21.2 Procedure overview

This procedure contains steps that are summarized as follows:

- Use the recent change and verify menu (RC/V) to identify the entities in the link set.
- Use the RC/V menu to delete the link set record.
- Verify that the link appears in the UNEQ state.

3.21.3 Before you begin

To perform this procedure successfully, you need the following information:

- Number of the link set that is to be removed
- Point code of the STP from which you are removing the link set
- Whether the link set that you are removing is part of a combined link set and, if it is, whether it is the last link set in the combined link set

Important! This procedure also applies to the T1 or E1/ATM SS7 high speed link. When working with high speed links, access the SAAL LINK form instead of the MTP2 LINK form.

3.21.4 Procedure

1

Do you know the numbers of the links that comprise the link set that is to be removed?

If yes:	If no:
go to Step 6.	continue with Step 2.

2

At the **NETWORK PLATFORM MAIN MENU**, select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

4

Select the **LINK SET FORM** option.

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Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

From the LINK SET Form LINK SET field, query the database to determine the link set that you are going to remove with the QD operation.

6

Navigate to the link set record to be deleted.

7

When you are sure the information you entered is correct, type menu command **d** and press **Enter**.

Result:

```
deleting... FORM DELETED
The LINK SET FORM displays.
```

8

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

9

Type **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.22 Adding an SS7 link to an existing link set

3.22.1 Purpose

Perform this procedure to add an SS7 link to an existing link set.

3.22.2 Procedure assumptions

This procedure assumes the following conditions:

- Hardware for the link that is to be added to a link set is in place
- The SS7 Board on which the new link(s) will be added is in service

Do not begin these procedures unless these conditions are true.

3.22.3 Procedure overview

This procedure contains steps that are summarized as follows:

- Use the recent change and verify (RC/V) menu to enter information about the new links.
- If your system uses the NPM administration system, use the RC/V menu to register the new links with NPM.

3.22.4 Before you begin

To perform this procedure successfully, you need the following information:

- The board (group), port (member), and link code number for the new link(s)
- The number of the link set with which the new link(s) will be associated
- The signaling link code (SLC) for the new link(s)
- The NPM name for the new link(s)

This procedure also applies to the T1 or E1/ATM SS7 high speed link.

When working with high speed links, access the SAAL link form (RC/V form 3.1.4) instead of the MTP2 link form (RC/V form 3.1.3).

3.22.5 Steps

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
rcv:menu;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

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3

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

4

Select the **MTP2 LINK FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **i** and press **Enter**.

Result: The **MTP2 LINK FORM** displays.

6

Enter the appropriate values for the GROUP NUMBER, SUBGROUP NUMBER, MEMBER NUMBER, and LINK CODE fields.

Observe the following rules.

- The GROUP NUMBER field must have a value between 0 and 15 identifying the Telecom Server.
- The SUBGROUP NUMBER field must have a value between 1 and 4 specifying the board number.
- The LINK SET NUMBER field must have a value between 1 and 32.
- The LINK CODE field must have a value between 0 and 31, and its value must be the same as the number of the far-end SLC for the link.
- All other fields on the Link Form should retain their default values.

7

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **MTP2 LINK FORM** displays.

8

Repeat Step 6 and Step 7 for any other link(s) that are to be added to the link set, then continue with Step 9.

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9

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

10

Enter the input command:

```
RST:SLK=A-B-c;
```

where A is the group number in the range of 0 to 15, B is the subgroup number (board number), and c is the member number (port number) for the new link.

Result: An RST:SLK=A-B-c IP output message is generated.

11

Choose the appropriate option:

If...	then...
The output message shows that the links are in the ACT (active) state,	continue with the next step in this procedure.
The output message shows that the links are in the OOS (out of service) state,	perform the following actions as necessary to resolve the problem: • Recheck the SLC values entered at the RC/ • Check the output message logs for RPT:LKF problem. • Recheck the hardware connections. • When other methods fail, contact your netwo

12

Repeat Step 11 for any other link(s) that are to be added to the link set.

13

Perform link testing according to your local office practices.

END OF STEPS

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3.23 Changing an existing SS7 link in a link set

3.23.1 Purpose

Perform this procedure to change an existing SS7 link in a link set.

3.23.2 Before you begin

To complete this procedure, you need the following information:

- The board (group), port (member), and link code numbers for the link that you will change
- All data that is necessary to complete your changes

Note: If you are performing changes on the only active in-service (IS) SS7 link on the system, the system will go into isolation and will be unable to communicate with all other network elements. Under this condition, maintenance should be performed only if absolutely necessary, and maintenance commands must be entered with the UCL option.

3.23.3 Steps

1

At the subshl message prompt, enter an RC/V session by typing the following command:

```
rcv:menu;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

4

Select the **MTP2 LINK FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **qu** and press **Enter**.

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Result: The **MTP2 LINK FORM** displays.

6

Query the database to find the record of the link that is to be changed.

7

Modify the information on the record according to your desired changes.

8

When you are sure the information you entered is correct, type menu command **u** and press **Enter**.

Result:

`updating... FORM UPDATED` The **MTP2 LINK FORM** displays.

9

Repeat Step 5 through Step 8 for all data that is to be changed.

10

Type **<** and press **Enter** until you get back to the **NETWORK PLATFORM MAIN MENU** form.

Result: The **NETWORK PLATFORM MAIN MENU** displays.

11

Type **!** and press **Enter**.

Result: RC/V exits. The subshl prompt appears.

12

Enter the input command:

`RST:SLK=a-b-c;`

where *a* is the group number in the range of 0 to 31

b is the subgroup number (board number)

c is the member number (port number) of the link that you have changed with the range of 1-20 (M2PA links).

Result: The `RST:SLK=a-b-c IP` output message is generated.

13

When the restore operation has completed, the system responds with the `RST:SLK=a-b-c COMPLETED` output message.

Changing an existing SS7 link in a link set SS7 link administration

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14

Determine the following:

If the message displays...	then...
Completed and the link is in the ACT state	go to the next step.
Completed and the link is in the OOS state	recheck the hardware connections. Recheck the SLC values that were entered on the RC/V forms. Enter OP:SLK for the current link status. If the problem cannot be resolved locally, contact your network manager for assistance.

15

Enter the command:

`CHG:SLK=a-b-c, UBLK;`

where *a* is the group number in the range of 0 to 31

b is the subgroup number (board number)

c is the member number (port number) of the link that you have unblocked with the range of 1-20 (M2PA links)

Result: The `CHG:SLK a-b-c IP` output message is generated.

16

When the change operation has completed, the system responds with the `CHG:SLK=a-b-c UBLK COMPLETED` output message.

Result: If the message displays `COMPLETED` and the link is in the ACT state, you have completed this procedure.

If the message displays `COMPLETED` and the link is in the OOS state, recheck the hardware connections and recheck the SLC values that were entered on the RC/V forms. If the problem cannot be resolved locally, contact your next network manager for assistance.

END OF STEPS

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3.24 Configure multiple SS7 processes

3.24.1 Purpose

This section describes how to configure multiple SS7 processes. For multiple SIGTRAN processes, see 3.61 “Configuring multiple SIGTRAN processes” (p. 217).

3.24.2 Configure multiple SS7 processes

Change initlist to disable S7SCH, S7TSSCH processes. Enable the S7SCH0 to S7SCH3, S7TSSCH0 to S7TSSCH3 processes.

Use the following scripts to accomplish this. The same change needs to apply on the blades where S7SCH is running, so that the */sn/init/initlist* file contains the same information.

```
/opt/config/bin/ChangeInitlist disable S7SCH
/opt/config/bin/ChangeInitlist enable S7SCH0
/opt/config/bin/ChangeInitlist enable S7SCH1
/opt/config/bin/ChangeInitlist enable S7SCH2
/opt/config/bin/ChangeInitlist enable S7SCH3
/opt/config/bin/ChangeInitlist disable S7TSSCH
/opt/config/bin/ChangeInitlist enable S7TSSCH0
/opt/config/bin/ChangeInitlist enable S7TSSCH1
/opt/config/bin/ChangeInitlist enable S7TSSCH2
/opt/config/bin/ChangeInitlist enable S7TSSCH3
```

If less than four processes are needed, you may enable the process set 0 to 1, 2 or 3, with process set 0 included always if using multiple processes. Also each process set has to be consistent and complete. For example, process set 0 may include S7TSSCH0 and S7SCH0 for SS7 support. Both processes with 0 suffix have to be running. To add one more process set, S7TSSCH1 and S7SCH1 can be enabled.

3.24.3 Configure Form 2.6

Configure form 2.6 to set field DISTRIBUTED SS7 to"M".

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Figure 3-1 Illustration of FORM 2.6 SS7 OFFICE PARAMETERS FORM

```
      SS7 OFFICE PARAMETERS FORM

*>  1. NETWORK ID       ABCDE
  2. OFFICE ID      444
  3. SEAS CLLI      ABCDEFGHIJK
  4. POINT CODE FORMAT   ANSI
  5. NETWORK INDICATOR   NATL
  6. DISTRIBUTED SS7    M
  7. INTERNAL CARGO TIMER 50

      NETWORK ID   CLUSTER ID  MEMBER ID
      __________   __________  _________
LOCAL POINTCODE 8. LN  230  9. LC  30   10. LM  14
STP 1     11. S1N 230  12.  S1C  001  13. S1M 001
STP 2     14. S2N 230  15. S2C   002  16. S2M 000
```

3.24.4 Configure Forms 3.6.1, 3.6.2, and 3.6.3

Figure 3-2 Illustration of FORM 3.6.1 CLUSTER PARAMETERS FORM

```
     CLUSTER PARAMETERS FORM

*> 1. NETWORK ID          ABCDE
  2. OFFICE ID          444
  3. CLUSTER NODE ID        0
  4. CLUSTER ROUTING        LL
  5. BLOCK CLUSTER SS7 LINKS    N
  6. BLOCK LOCAL SS7 LINKS     N
  7. NAMING RULE FOR CLUSTER NAME  P
  8. CONNECTION DELAY TIMER     0
  9. NUMBER of NODES UP TO CONNECT 0
```

Note: The CLUSTER NODEID is the physical node id.

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Figure 3-3 Illustration of FORM 3.6.2 CLUSTER PARAMETERS FORM

```
          NODE TO LAN ASSIGNMENT FORM

*> 1. NETWORK ID   ABCDE
  2. OFFICE ID   444

NODE ID LAN ID  NODE ID LAN ID  NODE ID LAN ID  NODE ID LAN ID
------- ------  ------  -----   ------  -----  ------  ------
3.NODE 0   1  11.NODE8  0  19.NODE16 0  27.NODE24  0
4.NODE 1   1  12.NODE9  0  20.NODE17 0  28.NODE25  0
5.NODE 2   1  13.NODE10 0  21.NODE18 0  29.NODE26  0
6.NODE 3   1  14.NODE11 0  22.NODE19 0  30.NODE27  0
7.NODE 4   1  15.NODE12 0  23.NODE20 0  31.NODE28  0
8.NODE 5   1  16.NODE13 0  24.NODE21 0  32.NODE29  0
9.NODE 6   1  17.NODE14 0  25.NODE22 0  33.NODE30  0
10.NODE 7  1  18.NODE15 0  26.NODE23 0  34.NODE31  0
```

Figure 3-4 Illustration of FORM 3.6.3 NODE ID TO UNAME FORM

```
                          Record 1/1
Screen 1 of 4
               SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

*>  1. NETWORK ID                     ABCDE
*   2. OFFICE ID                      444

   SS7 NODE ID                    HOST IDENTIFIER
   ------------ ------------------------------------------
    3. NODE 0   7
    4. NODE 1   8
    5. NODE 2   ________________________________________________
    6. NODE 3   ________________________________________________
    7. NODE 4   ________________________________________________
    8. NODE 5   ________________________________________________
    9. NODE 6   ________________________________________________
   10. NODE 7   ________________________________________________


WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and
MUXSCH of the corresponding node is required for each form update
to take effect.
```

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```
Screen 2 of 4
               SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

SS7    NODE ID               HOST IDENTIFIER


------------ ----------------------------------------------
   11. NODE 8   _____________________________________________
   12. NODE 9   _____________________________________________
   13. NODE 10  _____________________________________________
   14. NODE 11  _____________________________________________
   15. NODE 12  _____________________________________________
   16. NODE 13  _____________________________________________
   17. NODE 14  _____________________________________________
   18. NODE 15  _____________________________________________


WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and
MUXSCH of the corresponding node is required for each form update
to take effect.
```

```
Screen 3 of 4
                 SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

   SS7 NODE ID                     HOST IDENTIFIER
   ------------ ------------------------------------------------
   19. NODE 16  _____________________________________________
   20. NODE 17  _____________________________________________
   21. NODE 18  _____________________________________________
   22. NODE 19  _____________________________________________
   23. NODE 20  _____________________________________________
   24. NODE 21  _____________________________________________
   25. NODE 22  _____________________________________________
   26. NODE 23  _____________________________________________


WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and
MUXSCH of the corresponding node is required for each form update
to take effect.
```


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```
Screen 4 of 4
                  SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

   SS7 NODE ID                        HOST IDENTIFIER
   ------------ ------------------------------------------------
   27. NODE 24  ________________________________________________
   28. NODE 25  ________________________________________________
   29. NODE 26  ________________________________________________
   30. NODE 27  ________________________________________________
   31. NODE 28  ________________________________________________
   32. NODE 29  ________________________________________________
   33. NODE 30  ________________________________________________
   34. NODE 31  ________________________________________________

WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and
MUXSCH of the corresponding node is required for each form update
to take effect.
```

Note: If a correct UNAME value is populated in form 3.6.3 on this node, the S7LOCAL_NODEID read from form 3.6.1 is overwritten by the corresponding SS7 NodeID of this UNAME.

3.24.5 Restart platform software

To restart the platform software, run the following commands:

/etc/Astop all

/etc/Astart all

3.24.6 Restart platform software

1. Perform the following steps to restart the MCAS platform software:
   a. For OSP:
      i.) **su - linus**
      ii.) **sepman -d stop**
      iii.) **sep -t masinit-$HOSTNAME**
      where **$HOSTNAME** is the hostname of the OSP server. Wait for the **sepman -t** to finish stopping Platform INIT. After **sepman -t** is done, ensure MCAS is not running anymore.
      iv.) **exit** (exit as linus and back to root user).
   b. For non-OSP and OSP:
      Note: Make sure the host is not restarting MCAS and then run the following commands:
      i.) **/sn/init/init.sh stop**
      ii.) **ps -afe**
      Note: There should be no platform processing running like MSGH, MHRPROC, DBMON, DBI, CSOP, and so on.

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2. Start up the MCAS again after the shutdown by running the following commands:
   a. For OSP:
      i.) **`su - linus`**
      ii.) **`sepman -d start`**
      iii.) **`exit`**
   b. For non-OSP:
      i.) **`/sn/init/init.sh start`**
3. Wait for MCAS platform to start up by monitoring the OMlogs.

3.24.7 Configure MTP links for each virtual node.

See “SSS7 link administration procedures” to configure MTP links for each virtual node.

3.24.8 Configure Form 2.4

Configure Form 2.4 to turn off all the existing measurement entries for "COLLECTING PROCESS" field is S7SCH by changing the "INHIBITED" field to "Y".

Turn on the measurements for the new S7SCH0-S7SCHx (x is 1, 2 or 3, the maximum number of processes you have enabled).

There is one entry per each S7SCH process for each measurement table. The entry for a measurement table with S7SCH0 as "COLLECTING PROCESS" has to be turned on in order to turn on the entries with S7SCH1 to S7SCH3 for the same table. The interval for same measurement table with different processes has to be the same.

The existing rules still exist among the measurement tables as below.

1. S7_SCCP_MEAS depends on S7_SSN_MEAS

   They must have the same collection interval. To update, one must do S7_SSN_MEAS before S7_SCCP_MEAS. When S7_SSN_MEAS is updated, a reminder (warning) is given so the user is alerted to change the interval of S7_SCCP_MEAS accordingly. If S7_SCCP_MEAS is updated first, the operation is disallowed.
2. S7_MTP_MEAS and S7_LK_MEAS depend on S7_FEP_MEAS

   So the order of updates must follow similar rules as in (1) above.

3.24.9 Bring up MTP links by “rst:slk”

Note:

For the concept of virtual node, see 3.61 “Configuring multiple SIGTRAN processes” (p. 217).

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3.25 Setting MUXSCH Configuration

3.25.1 Purpose

To set the configuration for MUXSCH to distribute the incoming SS7 message to available Java agents.

For the description of the MUX Service Circuit Handler Submenu and its two forms listed in the following configuration steps, refer to the chapter *MUX Service Circuit Handler* in the *Recent Change and Verify Guide*.

For the description of the usage of the RCV commands, refer to the chapter *Introduction to recent change and verify* in the *Recent Change and Verify Guide*.

Note: It is assumed that form 3.6.3, NODE ID TO UNAME FORM is updated to provision the uname value of each of the two OAM host nodes before proceeding with the following steps.

For more information about form 3.6.3, refer to the chapter *Configuring the SS7 Platform* in the *Recent Change and Verify Guide*.

3.25.2 Setting MUXSCH configuration

1

Access the ainet login. At the local maintenance terminal enter:

```
LOGIN:UNIX=ainet;
```

Result: You are prompted for the AINET password.

2

Enter the ainet password.

Result: The hostname prompt appears.

3

At the hostname prompt, enter the following command to access PostGreSQL database:

```
psql -U scncraft
```

Result: The SQL prompt (A=>) appears.

4

Query the value of **nonspa_routing** field of **param_platform** table with the following command:

```
SELECT nonspa_routing FROM param_platform;
```

Result: The **nonspa_routing** field of **param_platform** table is displayed **– Y** or **N**.

5

If the value of **nonspa_routing** field of **param_platform** table queried in the step above is **N**, continue with the next step to update the value to **Y**. If the value is already **Y**, execute the following command to quit the PostGreSQL session:

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\q

Skip the next step and go to Step 7:

6

Update the **nonspa_routing** field to **Y** in **param_platform** table to enable Non-SPA routing capability for MUXSCH and then quit the PostGreSQL session:

```
UPDATE param_platform SET nonspa_routing='Y';
```

\q

Result: The **nonspa_routing** field of **param_platform** table is updated to **Y**.

7

Execute the following command to go to subshl:

subshl

Result: The subshl message prompt (<) appears.

8

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** is displayed with the following command line at the bottom:

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen): ->
```

9

Select the **MUX SERVICE CIRCUIT HANDLER SUBMENU** option (either by typing 16 or the submenu name at the command prompt and then pressing **Enter**).

Result: The **MUX SERVICE CIRCUIT HANDLER SUBMENU** is displayed with the following command line at the bottom:

```
Enter view#, view name, ! (=quit), ? (=help), <(=previous), n (=next
screen): ->
```

10

Select the **MUX LOCAL IP CONFIGURATION FORM** option (either by typing 16 or the submenu name at the command prompt and then pressing **Enter**).

Result: Enter Database Operation

```
I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD:
```

11

Type the command **i** (for Insert) and press **Enter**.

Result: The **MUX LOCAL IP CONFIGURATION FORM** displays, with the cursor being placed at the beginning of the **LOCAL HOST IP** field input line.

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12

Type the local host IP address (in IPv4 format a.b.c.d) of the active OAM host node and press **Enter**.

Result: The local host IP address of the active OAM host node is populated and the cursor now moves to the beginning of the **HOST ID** field input line.

13

Type the host ID (for example, 0-0-1) of the active OAM host node and press **Enter**.

Result: The host ID of the active OAM host node is populated and the cursor now moves to the beginning of the **PORT NUMBER** field input line.

14

Type the desired valid port number and press **Enter**.

Result: The port number is populated and the following command line is displayed:

```
Enter Insert, Change, Edit, Validate, or Print:
```

15

Type the command **i** (for Insert) and press **Enter**.

Result: The record containing the local host IP address, host ID, and port number information for the active OAM host node is now inserted into **MX_IP_CONFIG** table of PostGreSQL database, as indicated by a quick display of **FORM INSERTED** wording at the top right corner of the form. The form is then blanked out and cursor is placed back at the beginning of the **LOCAL HOST IP** field input line to be ready for the user to insert the next record.

16

Repeat the four steps immediately above to add the local host IP, host ID, and port number information of the standby OAM host node (for example, 0-0-9).

17

Type command **<** and press **Enter** to exit the form.

Result: The **MUX SERVICE CIRCUIT HANDLER SUBMENU** is displayed with the following command line at the bottom:

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen): ->
```

18

Select the **MUX SSN CONFIGURATION FORM** option (either by typing 2 or the form name at the command prompt and then pressing **Enter**).

Result: Enter Database Operation.

```
I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD:
```

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19

Type command **i** (for Insert) and press **Enter**.

Result: The **MUX SSN CONFIGURATION FORM** is displayed with the cursor being placed at the beginning of the **HOST ID** field input line.

20

Type the host ID (for example, 0-0-1) of the active OAM host node and press **Enter**.

Result: The host ID of the active OAM host node is populated and the cursor now moves to the beginning of the **LOCAL SUBSYSTEM NUMBER 1** field input line.

21

Type the first local subsystem number and press **Enter**.

Note: The subsystem number should be provisioned first in the **SUBSYSTEM NUMBER FORM** (form 3.3.1).

Result: The first local subsystem number is populated and the cursor now moves to the beginning of the **LOCAL SUBSYSTEM NUMBER 2** field input line.

22

If needed, repeat the step immediately above for fields 3 to 16 to populate local subsystem numbers 2 to 15. Just hit **Enter** to leave the default value 0 unchanged, local subsystem numbers.

Result: The local subsystem numbers 2 to 15 are populated and the command line is now displayed back.

```
Enter Insert, Change, Edit, Validate, or Print:
```

23

Type command **i** (for Insert) and press **Enter**.

Result: The record containing the host ID and local subsystem number information is now inserted into **MX_SSN** table of PostGreSQL database, as indicated by a quick display of **FORM INSERTED** wording at the top right corner of the form. The cursor is then placed back at the beginning of the **HOST ID** field input line to be ready for the user to insert the next record.

24

Repeat the four steps immediately above to add the host ID and local subsystem number information of the standby OAM host node (for example, 0-0-9).

25

Type command **<** and press **Enter** to exit the form.

Result: The **MUX SERVICE CIRCUIT HANDLER SUBMENU** displays, with the following command line at the bottom.

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen): ->
```


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26

Type command **!** and press **Enter** to exit **RCV MENU** session.

Result: The subshl prompt is returned.

27

If step 6 is executed and not skipped, initialize SPMAN process of both the sides using the following commands:

```
< INIT:PROC=SPMAN,LEVEL=1,UCL,MACHINE=<active OAM host host ID>;
< INIT:PROC=SPMAN,LEVEL=1,UCL,MACHINE=<standby OAM host host ID>;
```

28

As the WARNING message of each form's display is indicated, level 1 initialization to MUXSCH process is also required for the form changes to take affect. Execute the following commands to initialize MUXSCH of both the sides to sync up with the PostgreSQL database for the MUXSCH configuration above.

```
< INIT:PROC=MUXSCH,LEVEL=1,UCL,MACHINE=<active OAM host host ID>;
< INIT:PROC=MUXSCH,LEVEL=1,UCL,MACHINE=<standby OAM host host ID>;
```

End of steps

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3.26 Configure multiple MUXSCH processes

3.26.1 Overview

This section describes how to configure multiple MUXSCH processes.

3.26.2 To configure multiple MUXSCH processes

Change initlist to disable MUXSCH process. Enable the MUXSCH0 to MUXSCH1 (or MUXSCH2, MUXSCH3).

Use the following scripts to accomplish this. The same change needs to apply on the blades where S7SCH is running, so that the */sn/init/initlist* file contains the same information.

```
/opt/config/bin/ChangeInitlist disable MUXSCH
/opt/config/bin/ChangeInitlist enable MUXSCH0
/opt/config/bin/ChangeInitlist enable MUXSCH1
/opt/config/bin/ChangeInitlist enable MUXSCH2
/opt/config/bin/ChangeInitlist enable MUXSCH3
```

If less than four processes are needed, you may enable the process set 0 to 1, 2 or 3, with process set 0 included always if using multiple processes.

3.26.3 Configure Form 16.1

Configure form 16.1 to assign field MUXSCH ID to the MUXSCH process (for example, 0 for MUXSCH0) which open this listening IP and port number.

Figure 3-5 Illustration of FORM 16.1 MUX LOCAL IP CONFIGURATION FORM

```
        MUX LOCAL IP CONFIGURATION FORM

*> 1. LOCAL HOST IP
       169.254.192.1
*> 2. PORT NUMBER                      9000
    3. HOST ID                          0-0-1
    4. USED BY MUX2SCH                  F
    5. MUXSCH ID                        0
```

3.26.4 Configure Forms 16.2

Configure form 16.2 to assign field MUXSCH ID to the MUXSCH process (for example, 1 for MUXSCH1) which activates the SSN(s) when they have Java Agent connected to it.

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Figure 3-6 Illustration of FORM 16.2 MUX SSN CONFIGURATION FORM

```
         MUX SSN CONFIGURATION FORM
*>  1. HOST ID                          0-0-1
*>  2. MUXSCH ID                        1
    3. LOCAL SUBSYSTEM NUMBER 1         250
    4. LOCAL SUBSYSTEM NUMBER 2         0
    5. LOCAL SUBSYSTEM NUMBER 3         0
    6. LOCAL SUBSYSTEM NUMBER 4         0
    7. LOCAL SUBSYSTEM NUMBER 5         0
    8. LOCAL SUBSYSTEM NUMBER 6         0
    9. LOCAL SUBSYSTEM NUMBER 7         0
   10. LOCAL SUBSYSTEM NUMBER 8         0
   11. LOCAL SUBSYSTEM NUMBER 9         0
   12. LOCAL SUBSYSTEM NUMBER 10        0
   13. LOCAL SUBSYSTEM NUMBER 11        0
   14. LOCAL SUBSYSTEM NUMBER 12        0
   15. LOCAL SUBSYSTEM NUMBER 13        0
   16. LOCAL SUBSYSTEM NUMBER 14        0
   17. LOCAL SUBSYSTEM NUMBER 15        0
```

3.26.5 Restart platform software

To restart the platform software, run the following commands:

/etc/Astop all

/etc/Astart all

3.26.6 Restart platform software

Perform the following steps to restart the MCAS platform software.

For OSP:

1. Type the following commands at the command prompt.
   a. **su - linus**
   b. **sepman -d stop**
   c. **sepman -t masinit-$HOSTNAME**
      where $HOSTNAME is the hostname of the OSP server.
      Wait for the **sepman -t** to finish stopping MCAS INIT. After **sepman -t** is done, ensure MCAS is not running anymore.
   d. **exit** (exit as linus back to the root user)
2. For non-OSP and OSP ensure that the host is not going to restart MCAS and then perform the following.
   a. **/sn/init/init.sh stop**

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b. **ps -afe**
Note: There should be no platform processes running like MSGH, MHRPROC, DBMON, DBI, CSOP and so on.

3. Start up the MCAS again after the system shutdown by running the following commands.

   For OSP:

   a. **su - linus**

   b. **sepman -d start**

   c. **exit**

4. Perform the following step for non-OSP.

   For non-OSP:

   a. **/sn/init/init.sh start**

5. At this point, wait for the MCAS platform to start up by monitoring the OMlogs.

3.26.7 Configure Form 2.4

Configure Form 2.4 to turn off all the existing measurement entries for "COLLECTING PROCESS" field is MUXSCH by changing the "INHIBITED" field to "Y".

Turn on the measurements for the new MUXSCH0-MUXSCHx (x is 1, 2 or 3, the maximum number of processes you have enabled).

One entry per MUXSCH process for each measurement table. To turn on the entries with MUXSCH1 to MUXSCH3 for the same table, the entry for a measurement table with MUXSCH0 as "COLLECTING PROCESS" has to be turned on. The interval for same measurement table with different processes has to be the same.

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3.27 Permanently Removing an SS7 Link from an Existing Link Set

3.27.1 Purpose

Perform this procedure to permanently remove an SS7 link from an existing link set.

3.27.2 Procedure overview

This procedure contains steps that are summarized as follows:

- Block the traffic on the link.
- Remove the link.
- Remove information about the link from the system.
- Verify that the link appears in the UNEQ state.

3.27.3 Before you begin

To perform this procedure, you need the following information:

- The board and port number of the link that is to be removed OR
- The SLC value of the link that is to be removed
- The link set number

Note: If you are removing the only active in-service SS7 link on the system, the system will be isolated and will be unable to communicate with all other network elements. Under this condition, maintenance should be performed only if absolutely necessary, and maintenance commands must be entered with the UCL option. If you are removing the last link in a link set, you may also lose all communication with the associated STP.

3.27.4 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
rcv:menu;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 LINK MANAGEMENT SUBMENU** option.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

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4

Select the **MTP2 LINK FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **qd** and press **Enter**.

Result: The **MTP2 LINK FORM** displays.

6

Query the database to find the board and/or port numbers of the link that is to be removed.

Result: The Link Form of the link that is to be removed is displayed.

Write down the link set number that is associated with this link before proceeding to the next step.

7

Choose the link record to delete from the RC/V system.

8

When you are sure the record is what you want to delete, type menu command **d** and press **Enter** to delete the link from the RC/V system.

Result:

`deleting... FORM DELETED` The **MTP2 LINK FORM** displays. Cursor at **GROUP NUMBER** field.

9

Type **<** and press **Enter**.

Result: The **SS7 LINK MANAGEMENT SUBMENU** displays.

10

Type **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.28 Using the TRPMTPSCCP trap

3.28.1 TRPMTPSCCP trap

The TRPMTPSCCP traps collect SS7 MTP-L3 (Message Transfer Part - Level 3) and SCCP (Signaling Connection Control Part) messages that match the trap criteria and trap control parameters specified on the **SET:TRPMTPSCCP** input message.

This trap is used to identify problems in the network. For example, this trap can be used to verify that the point codes associated with a Called Party Global Title are correct.

3.28.2 Procedures in this section

The following sections describe how to set, inhibit, reactivate, and remove the TRPMTPSCCP trap and to display and print the trap information. All of these actions are executed through the use of input messages. If you need more information on the parameters used in the input messages, see the *User Reference Guide* document.

Important! The TRPMTPSCCP trap should not be confused with the **TRACE:PROC** input message available on the platform. The **TRACE:PROC** message is a general mechanism for providing trace information on system processes. This message is explained in detail in the *User Reference Guide* document.

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3.29 Setting a TRPMTPSCCP trap

3.29.1 Purpose

To set a TRPMTPSCCP trap, perform the following procedure.

3.29.2

1

At the local maintenance terminal, enter an input message of the following format:

SET:TRPMTPSCCP,control_parameters,criteria;

Result: This input message traps messages on link located in telecom server 0, board 1, and the second port that have origination point codes of 230-35-1. This trap verifies that messages are being received at the if messages are expected from a switch with that point code.

After the trap is set, a trap identifier (trap ID) is returned with the SET:TRPMTPSCCP output message. This trap ID stays in the system until the trap is cleared by entering the **CLR:TRPMTPSCCP** input message.

Example: This is a sample input message string:

SET:TRPMTPSCCP,LNKLST=0-1-2, OPC=230-35-1

END OF STEPS

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3.30 Inhibiting a TRPMTPSCCP Trap

3.30.1 Purpose

If it is necessary to interrupt a trap from collecting messages, the trap can be inhibited. Inhibiting a trap temporarily halts the message collection for an active trap. When the trap is reactivated, the trap will continue from where it left off.

Perform the following procedure to inhibit a TRPMTPSCCP trap.

3.30.2 Procedure

1

Enter the following input message:

```
INH:TRPMTPSCCP,ID=trap_identifier;
```

Result: The Trap ID is in the inhibited state and is no longer collecting messages. It can be reactivated by entering the **ALW:TRPMTPSCCP** input message.

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3.31 Reactivating a TRPMTPSCCP Trap

3.31.1 Purpose

When a trap is reactivated, the inactive trap ID changes to the active state. Use the following procedure to reactivate a TRPMTPSCCP trap.

3.31.2 Resulting events

Depending on the state of the trap ID prior to its reactivation, one of the following events may occur:

- Trap IDs that are in the complete or aborted state are restarted. Previously collected messages are no longer accessible, and the DUR and TOT control parameter counters are reset.
- Trap IDs that were manually inhibited (inhibited state) continue running from where they left off.

3.31.3 Procedure

1

Enter the following input message:

```
ALW:TRPMTPSCCP,ID=trap_identifier;
```

Result: The trap ID state is active, and messages are being collected.

End of steps

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3.32 Removing a TRPMTPSCCP Trap

3.32.1 Purpose

Removing a trap puts the associated Trap IDs in the free state so that the trap ID can be reused.

To remove a TRPMTPSCCP trap, perform the following procedure.

3.32.2 Procedure

1

Enter the following input message:

```
CLR:TRPMTPSCCP,ID=trap_identifier;
```

Result: The trap ID is in the free state and may be assigned to another trap by entering a **SET:TRPMTPSCCP** input message. All previous messages are removed from the system.

END OF STEPS

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3.33 Displaying the TRPMTPSCCP trap information

3.33.1 Purpose

To display TRPMTPSCCP trap messages, perform the following procedure.

3.33.2 Procedure

1

Enter the following input message:

```
OP:TRPMTPSCCP,ID=trap_identifier [,FMT=RAW];
```

Result: The status and criteria of the traps are displayed and the collected messages are sent to the ttlog file.

By default, the trapped messages are displayed in parsed format as normal ASCII text. If FMT is set to RAW, the trapped messages are displayed in a hexadecimal ASCII character format.

2

Enter the following input message:

```
OP:LOG=ttlog [,DEST=T] [,TIME=time];
```

Result: Trap messages are displayed.

By default, the trapped messages are displayed at the ROP. However, when DEST is set to T, the messages are displayed. By default, the entire contents of the ttlog are displayed. If TIME is set to the time at which the **OP:TRPMTPSCCP** input message was entered, only the messages that were added to the ttlog after the specified time are displayed.

END OF STEPS

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3.34 Printing TRPMTPSCCP Trap Status and Criteria

3.34.1 Purpose

To print the status and criteria of the TRPMTPSCCP trap, perform the following procedure.

3.34.2 Procedure

1

Enter the following input message:

```
OP:TRPMTPSCCP;
```

Result: The status of all traps for the specified <*type*> is printed.

END OF STEPS

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3.35 Platform Focused Destination Overload Control Setup (ITU or CHN Protocol)

3.35.1 Purpose

Perform the following procedure to complete the RC/V Form SS7 SUBSYSTEM NUMBERS. The data entered on this form establishes the Focused Destination Overload Control setup parameters for each SSN on your Platform. The SPAs that are being used on the Platform determine what SS7 data needs to be added or modified.

Important! Each SSN must have a unique record in this form.

3.35.2

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
rcv:menu;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 SIGNALING CONNECTION CONTROL SUBMENU** option.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

4

Select the **SUBSYSTEM NUMBER FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command `i` and press **Enter**.

Result: The **SUBSYSTEM NUMBER FORM** displays.

6

Enter the value of the **SUBSYSTEM NUMBER** for the SPA.

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7

Enter a value for the **MATE SUBSYSTEM NUMBER** field.

8

Enter a value between 0 and 16383 for the **MATE POINT CODE** field.

9

At the **PROTOCOL TYPE** field, enter one of the following values and press Enter. (Valid routing types are shown in parenthesis)

- AIN0.0 - AIN Release 0 message set (SSN, RK, PCSSN)
- AIN0.1 - AIN Release 1 message set (SSN, RKE, RKG, PCSSN)
- GTT - Global Title Translation (SSN, RKE, RKG, PCSSN)
- ICP - AT&T Intelligent Call Processing SS7 protocol (PCSSN, SSN)
- IN - Intelligent Network (SSN, RK, PCSSN)
- CS1-ETSI - CS1 European Telecommunications Standards Institute (SSN, ESK, CAVESK, PCSSN)
- ASERI - Application Service Entity-Rate Intelligente (RKC, RKV, RKN, RKW, SMD, SSN, PCSSN)
- P-INAP - AT&T Proprietary Intelligent Network Application Protocol (RKC, RKP, RKV, PCSSN)
- TIMAP - Telecom Italia Mobile Application Part (SSN, PCSSN)
- GSMMAP - Global System for Mobile (cellular) Mobile Application Part (SSN, RK, PCSSN)
- CAP - Capabilities Application Part (SSN, ESK, PCSSN)
- MNP - Mobile Number Portability (SSN)
- GSMANSI -- both GSM and ANSI-41
- IS826 -- Interim Standards 826

Please note the following regarding this step:

- When SSN=0, GTT, AIN0.1 and MNP must be selected. When GTT or MNP is selected, then the only valid OVERLOAD value is NONE. When AIN0.1 is selected, OVERLOAD cannot be NONE.
- When the platform type is ANSI or Gateway, ITU protocol types are allowed.
- If the platform point code indicator is ANSI or Gateway, and the PROTOCOL TYPE is an ITU protocol, then the only valid OVERLOAD CONTROL value is NONE.

10

At the **ROUTING TYPE** field, enter one of the following values and press **Enter**.

- RK - routing key routing. This consists of directory number, the nature of the number, the type of digits, and the SSN.
- RKB - routing key - billing ID

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- RKBAPC - routing key based on billing ID. If the billing ID is not present, the message will be routed based on the point code and subsystem number.
- RKC - routing key based on calling line identity.
- RKE - use with AIN0.1 routing key 1 (SSN+GTA+TT)
- RKG - use with AIN0.1 routing key 2 (SSN+GTA)
- RKV - routing key based on platform received number
- RKP - routing key based on customer identity
- RKN - routing key based on number portability donor directory number
- RKW - routing key based on gateway
- ESK - ETSI service key
- CAVESK - called address value + ETSI service key
- SSN - subsystem number routing only
- SMDSSN - used for PCS, this routing type pertains to the service key SMD update, SMD call, and CM internal call
- PCSSN - point code subsystem number routing.

11

At the **OVERLOAD** field, enter one of the following overload control values and press **Enter**.

- NONE - specifies no overload controls
- SYS - specifies system overload control
- YS - specifies system and SOCC overload control

Important! SS7 overload status reporting must be a system-wide view (for example, if one Control Computer is in overload, the entire system is in overload). Determination of overload conditions should be done on a per-Control Computer basis, and may be performed by selecting the overload control value ALL when setting up the SSN.

12

At the **ETSI GAP TYPE** field, enter one of the following alpha values and press **Enter**.

- CLDAV
- GAPOS
- CLDAS
- CLGAS

13

At the **ETSI ACG DIGIT CODE** field, enter a numeric value from 3 through 18 for all but the ETSI GAP TYPE of GAPOS and press **Enter**.

For the ETSI GAP TYPE of GAPOS, the allowed range is 3-10 with a default value 6.

Low values for the ETSI ACG DIGIT CODE indicate severe code gapping effects.

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14

At the **FDOC** field, enter either N or Y and press **Enter**.

Important! The default value for the FDOC field is N. The customer cannot set the FDOC field to Y unless the PROTOCOL TYPE field is set to ASERI, CS1-ETSI or P-INAP.

15

For **TRANSACTION RESPONSE TIMER** field, enter a value between 1000 and 10000 or 0.

16

For **MULTIPLE PROTOCOL DISCRIMINATER** field, enter NONE or SSNS.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

17

When you are sure the information you entered is correct, type menu command **i** and press **Enter** to insert the changes into the database.

Result:

`inserting... FORM INSERTED` The **SUBSYSTEM NUMBER FORM** displays.

18

Repeat Step 6 through Step 17 to set up the Focused Destination Overload Control value for each SSN on the platform. When you have completed this form for each SSN, proceed to Step 19.

19

Type **<** and press **Enter**.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

20

Type command **!** and press **CARRIAGE RETURN**.

Result: RC/V exits.

END OF STEPS

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3.36 Setting overload control parameters

3.36.1 and SOCC overload control

This section outlines the set-up procedures for (system) call overload control and for eSM originated code control (SOCC):

- overload (also called system overload) is a system-wide overload control that is triggered by the following threshold ratio: the total number of failed queries to the total number of queries received on the during a discrete time period.
- eSM originated code control (SOCC) is an overload control on a particular SSN that can be triggered, for example, if the Calling Name Delivery (CNAM) application is sending too many calls to the SSN. A SOCC can be either automatically or manually designated.

3.36.2 Limitations

When using ANSI protocol, not all applications support both types of overload control. In applications where only overload control is supported, component SSNs must be configured in a particular way.

Important! When using ANSI protocol, not all applications support both types of overload control. In applications where only overload control is supported, component SSNs must be configured in a particular way. Note the following restrictions:

- CNAM supports system overload control only.
- IS-41 does not support system overload or SOCC (ANSI protocol only).

3.36.3 Default configurations

The system is initially configured with default automatic overload control settings. For more detailed information about overload control settings and the rules governing the impact of multiple overload control settings, refer to the *Planning and Engineering Guide*.

3.36.4 Modifications to defaults

Any modifications to default (suggested) overload set-up values should be coordinated with your network administrator. For details about the characteristics of RC/V forms that are referenced in this section and for figures illustrating sample forms, refer to the other sections of this document.

3.36.5 Procedures in this section

SSN configuration instructions and restrictions are described in the following procedures in this section:

- 3.39 “Initial Platform Overload Setup (ANSI Protocol)” (p. 151)
- 3.40 “Initial Platform Overload Setup (ITU Protocol)” (p. 156)
- 3.41 “Modifying the Platform System or CNAM Overload Capability/Exception Point Code Form (ANSI Protocol)” (p. 161)
- 3.42 “Modifying the Platform System Overload Capability/Exception Point Code Form (ITU Protocol)” (p. 163)

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- 3.44 “Setting Point Codes (ANSI)” (p. 166)
- 3.46 “Setting Point Codes (ITU)” (p. 170)
- 3.48 “Setting Point Codes (CHN)” (p. 173)
- 3.49 “Setting Alias Point Codes (ANSI)” (p. 175)
- 3.50 “Setting Alias Point Codes (ITU)” (p. 177)
- 3.51 “Setting Alias Point Codes (CHN)” (p. 179)
- 3.53 “Updating the param_platform Table” (p. 182)

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3.37 Overview of the overload control mechanism

3.37.1 Overload state

A platform overload state occurs when the system load, which includes call-processing and non-call-processing activities, exceeds its capacity.

3.37.2 Automatic and manual overload control

Usually, the system's response to overload is automatic, but manual overload control is also an option.

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3.38 system overload setup

3.38.1 to SSP requests

Although overload is triggered system-wide, if the receiving SSN for a specific incoming query has been configured for overload control, the sends an ACG control request to the host SSP only.

3.38.2 Overload control levels

overload has 15 control levels, 1 through 15. In addition, level 0 removes overload controls and returns the to normal operation.

3.38.3 RC/V forms

Network managers use the SS7 SUBSYSTEMS NUMBERS FORM to configure SSNs for overload control. To customize the overload settings on your , complete the following RC/V forms to change the default automatic system overload control settings.

Finding forms

The procedures listed under the heading, 3.36 “Setting overload control parameters” (p. 147) provide step by step instructions to complete the RC/V forms in the following list. These forms are accessible from the main menu under RC/V:

- SUBSYSTEM NUMBER FORM
- SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM
- SPMAN SSN RESOURCE MANAGEMENT FORM (used for subsystem overload only)
- AUTOMATIC eSM ORIGINATED CALL CONTROL FORM (used only when overload control is applied to applications that do not support SOCC overload control)
- System Overload Control Form

More information about forms

For detailed information and examples of all RC/V Forms (using ANSI, ITU and CHN protocols) discussed in this section, refer to the other sections of this document.

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3.39 Initial Platform Overload Setup (ANSI Protocol)

3.39.1 Purpose

Perform the following procedure to modify RC/V SS7 SUBSYSTEM NUMBERS FORM for each SSN on the platform. The data entered on this form establishes the initial overload setup parameters. The SPAs that are being used on the platform determine what SS7 data needs to be added or modified. Note that each SSN must have a unique record in this form.

For definitions and other information about the fields and values in this procedure, refer to the other sections of this document.

3.39.2 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 SIGNALING CONNECTION CONTROL SUBMENU** option.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

4

Select the **SUBSYSTEM NUMBER FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
System setup operations
```

5

Type menu command **i** and press **Enter**.

Result: The **SUBSYSTEM NUMBER FORM** displays.

6

For the **LOCAL SUBSYSTEM NUMBER** field, enter a numeric value from 5 through 254 or enter a value of 0 and press **Enter**.

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If you are uncertain of the correct value to enter, consult your system administrator.

7

For the **MATE SUBSYSTEM NUMBER** field, enter the same value entered in the **LOCAL SUBSYSTEM NUMBER** field and press **Enter**.

Important! This entry must be the same as the entry in the **LOCAL SUBSYSTEM NUMBER** field.

8

For the **MATE POINT CODE NETWORK IDENTITY** field, enter a numeric value from 0 through 255 and press **Enter**.

If you are uncertain of the correct value to enter, consult your system administrator.

Important! This number should be the same as the Network ID for this .

9

At the **MATE POINT CODE CLUSTER IDENTITY** field, enter a numeric value from 0 through 255 and press **Enter**.

10

At the **MATE POINT CODE MEMBER IDENTITY** field, enter a numeric value from 0 through 255 and press **Enter**.

Important! The MEMBER IDENTITY for the mated platform will be different than the MEMBER IDENTITY for this platform.

11

At the **PROTOCOL TYPE** field, enter one of the following values and press **Enter**. (Valid routing types are shown in parenthesis)

- AIN0.0 - AIN Release 0 message set (SSN, RK, PCSSN)
- AIN0.1 - AIN Release 1 message set (SSN, RKE, RKG, PCSSN)
- GTT - Global Title Translation (SSN, RKE, RKG, PCSSN)
- IN - Intelligent Network (SSN, RK, PCSSN)
- ICP - AT&T Intelligent Call Processing SS7 protocol (PCSSN, SSN)
- CS1-ETSI - CS1 European Telecommunications Standards Institute (SSN, ESK, CAVESK, PCSSN)
- ASERI - Application Service Entity-Rate Intelligente (RKC, RKV, RKN, RKW, SMD, SSN, PCSSN)
- P-INAP - AT&T Proprietary Intelligent Network Application Protocol (RKC, RKP, RKV, PCSSN)
- TIMAP - Telecom Italia Mobile Application Part (SSN, PCSSN)
- GSMMAP - Global System for Mobile (cellular) Mobile Application Part (SSN, RK, PCSSN)

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- CAP - Capabilities Application Part (SSN, ESK, PCSSN)
- MNP - Mobile Number Portability (SSN)
- GSMANSI -- both GSM and ANSI-41
- IS826 -- Interim Standards 826

Please note the following regarding this step:

- When SSN=0, GTT, AIN0.1 and MNP must be selected. When GTT or MNP is selected, then the only valid OVERLOAD value is NONE. When AIN0.1 is selected, OVERLOAD cannot be NONE.
- When the platform type is ANSI or Gateway, ITU protocol types are allowed.
- If the platform point code indicator is ANSI or Gateway, and the PROTOCOL TYPE is an ITU protocol, then the only valid OVERLOAD CONTROL value is NONE.

12

At the **ROUTING TYPE** field, enter one of the following values and press **Enter**.

- RK - routing key routing. This consists of directory number, the nature of the number, the type of digits, and the SSN.
- RKB - routing key - billing ID
- RKBAPC - routing key based on billing ID. If the billing ID is not present, the message will be routed based on the point code and subsystem number.
- RKC - routing key based on calling line identity.
- RKE - use with AIN0.1 routing key 1 (SSN+GTA+TT)
- RKG - use with AIN0.1 routing key 2 (SSN+GTA)
- RKV - routing key based on platform received number
- RKP - routing key based on customer identity
- RKN - routing key based on number portability donor directory number
- RKW - routing key based on gateway
- ESK - ETSI service key
- CAVESK - called address value + ETSI service key
- SSN - subsystem number routing only
- SMDSSN - used for PCS, this routing type pertains to the service key SMD update, SMD call, and CM internal call
- PCSSN - point code subsystem number routing.

13

Enter the appropriate value in the **OVERLOAD** field for the SSN that is being set up and press **Enter**.

The values are:

- NONE - specifies no overload controls
- SYS - specifies platform overload only

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- ALL - specifies platform and SOCC overload
- CNAM - specifies platform overload for CNAM application

Important! If you are using IS-41 actions and events on the SSN, the overload value must be set to NONE.

14

At the **ACG DIGIT CODE** field, enter a numeric value of 0, 3, 6, 7, 8, 9, or 10 and press **Enter**.

15

Press **Enter** for the remaining fields.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

16

When you are sure the information you entered is correct, type menu command `i` and press **Enter**.

Result:

`inserting... FORM INSERTED` The **SUBSYSTEM NUMBER FORM** displays.

17

Repeat Step 6 through Step 16 to set up the overload control value for each SSN on the . When you have completed this form for each SSN, proceed to Step 18.

18

Continue the process to set up the appropriate automatic call overload parameters for your system based on the following procedures for completing other RC/V forms:

If you want to...	then...
change the default OVERLOAD value	perform 3.41 "Modifying the Platform System or CNAM Overload Capability/Exception Point Code Form (ANSI Protocol)" (p. 161)

19

Type **<** and press **Enter**.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

20

Type command `!` and press **Enter**.

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Result: RC/V exits.

End of steps

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3.40 Initial Platform Overload Setup (ITU Protocol)

3.40.1 Purpose

Perform the following procedure to complete RC/V SS7 SUBSYSTEM NUMBERS form. The data entered on this form establishes the initial overload setup parameters for each SSN on your platform. The SPAs that are being used on the platform determine what SS7 data needs to be added or modified. Note that each SSN must have a unique record in this form.

For definitions and other information about the fields and values in this procedure, refer to the other sections of this document.

3.40.2

1

At the subshl message prompt, enter a RC/V session by typing the following command:

`RCV:MENU;`

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 SIGNALING CONNECTION CONTROL SUBMENU** option.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

4

Select the **SUBSYSTEM NUMBER FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **`i`** and press **Enter**.

Result: The **SUBSYSTEM NUMBER FORM** displays.

6

For the **LOCAL SUBSYSTEM NUMBER** field, enter a numeric value from 5 through 254 or enter a value of 0 and press **Enter**.

If you are uncertain of the correct value to enter, consult your system administrator.

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7

For the **MATE SUBSYSTEM NUMBER** field, enter the same value entered in the **LOCAL SUBSYSTEM NUMBER** field and press **Enter**.

Important! This entry must be the same as the entry in the **LOCAL SUBSYSTEM NUMBER** field.

8

For the **MATE POINT CODE** field, enter a numeric value from 0 through 16383 and press **Enter**.

If you are uncertain of the correct value to enter, consult your system administrator.

9

At the **PROTOCOL TYPE** field, enter one of the following values and press **Enter**.

- AIN0.0 - AIN Release 0 message set
- AIN0.1 - AIN Release 1 message set
- GTT - Global Title Translation, valid ROUTING TYPES=SSN, RKE, RKG, PCSSN
- ICP - AT&T Intelligent Call Processing SS7 protocol
- IN - Intelligent Network
- CS1-ETSI - CS1 European Telecommunications Standards Institute
- ASERI - Application Service Entity-Rate Intelligente
- P-INAP - AT&T Proprietary Intelligent Network Application Protocol
- TIMAP - Telecom Italia Mobile Application Part
- GSMMAP - Global System for Mobile (cellular) Mobile Application Part
- CAP - Capabilities Application Part
- MNP - Mobile Number Portability
- GSMANSI -- both GSM and ANSI-41
- IS826 -- Interim Standards 826

Please note the following regarding this step:

- When SSN=0, GTT and MNP must be selected. When GTT or MNP is selected, then the only valid OVERLOAD value is NONE.

10

At the **ROUTING TYPE** field, enter one of the following values and press **Enter**.

- RK - routing key routing. This consists of directory number, the nature of the number, the type of digits, and the SSN.
- RKB - routing key - billing ID
- RKBAPC - routing key based on billing ID. If the billing ID is not present, the message will be routed based on the point code and subsystem number.
- RKC - routing key based on calling line identity.

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- RKE - use with AIN0.1 routing key 1 (SSN+GTA+TT)
- RKG - use with AIN0.1 routing key 2 (SSN+GTA)
- RKV - routing key based on received number
- RKP - routing key based on customer identity
- RKN - routing key based on number portability donor directory number
- RKW - routing key based on gateway
- ESK - ETSI service key
- CAVESK - called address value + ETSI service key
- SSN - subsystem number routing only
- SMDSSN - used for PCS, this routing type pertains to the service key SMD update, SMD call, and CM internal call
- PCSSN - point code subsystem number routing.

11

Enter the appropriate value in the **OVERLOAD** field for the SSN that is being set up and press **Enter**.

The values are:

- NONE - specifies no overload controls
- SYS - specifies overload only
- ALL - specifies and SOCC overload

Important! If you are using IS-41 actions and events on the SSN, the overload value must be set to NONE.

12

At the **ETSI GAP TYPE** field, enter one of the following alpha values, as desired and press **Enter**.

For CS1-ETSI protocol:

- CLDAV -- called address value
- GAPOS -- gap on service
- CLDAS -- called address and service
- CLGAS -- calling address and service.

For other protocols:

- GLPOS

13

For the following fields, press **Enter** to automatically select the default value.

- FDOC (Y or N)

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- Transaction response timer (between 1000 and 100000 or 0)
- Multiple protocol discriminator (None or SSNs).

14

At the **ETSI ACG DIGIT CODE** field, enter a numeric value from 3 through 18 and press **Enter** unless you entered a value of **GAPOS** for the **ETSI GAP TYPE** field in Step 12 in which case you should enter a value from **3** through **10** in the **ETSI ACG DIGIT CODE** field. The default value is 6.

Important! Low values for the ETSI ACG DIGIT CODE indicate severe code gapping effects.

15

Press **Enter** for the remaining fields.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

16

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **SUBSYSTEM NUMBER FORM** displays.

17

Repeat Step 6 through Step 16 to set up the overload control value for each SSN on the platform. When you have completed this form for each SSN, continue with Step 18.

18

Continue the process to set up the appropriate automatic call overload parameters for your system based on the following procedures for completing other RC/V forms:

If you want to...	then...
change the default OVERLOAD value	perform 3.42 “Modifying the Platform System Overload Capability/Exception Point Code Form (ITU Protocol)” (p. 163)

19

Type < and press Enter.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

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20

Type command **!** and press **Enter**.

Result: RC/V exits.

End of steps

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3.41 Modifying the Platform System or CNAM Overload Capability/ Exception Point Code Form (ANSI Protocol)

3.41.1 Purpose

This procedure explains how to complete the RC/V SYSTEM OR CNAM OVERLOAD CAPABILITY/ EXCEPTION POINT CODE FORM, which allows you to inhibit ACG components to SSP offices that handle (system) overload only.

3.41.2 Before you begin

The OVERLOAD CAPABILITY OR EXCEPTION field in the SCCP PARAMETERS FORM, dictates the meaning of the overload capability point codes.

Please note the following before proceeding with this procedure:

- A value of C specifies that the point codes require overload capability (the default value is C)
- A value of E specifies that the point codes are exceptions that do not require overload capability

3.41.3 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

`RCV:MENU;`

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 SIGNALING CONNECTION CONTROL SUBMENU** option.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

4

Select the **SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review D=Delete QR=QueryR QD=QueryD :
```

5

Type menu command **`i`** and press **Enter**.

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Result: The **SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM** displays.

6

Enter a number value from 0 through 255 in the **NETWORK ID** field.

If you are uncertain of the correct value to enter, consult your system administrator.

7

Enter a number value from 0 through 255 in the **CLUSTER ID** field.

If you are uncertain of the correct value to enter, consult your system administrator.

8

Enter a number value from 0 through 255 in the **MEMBER ID** field.

Result:

`Enter Insert, Change, Edit, Validate, or Print:` If you are uncertain of the correct value to enter, consult your system administrator.

9

When you are sure the information you entered is correct, type menu command **`i`** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM** displays.

10

Repeat Step 6 through Step 9 for each SSP point code entry. When you have completed this form for each SSP point code, continue with Step 11.

11

Type **<** and press **Enter**.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

12

Type command **`!`** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.42 Modifying the Platform System Overload Capability/Exception Point Code Form (ITU Protocol)

3.42.1 Purpose

This procedure explains how to complete RC/V SYSTEM OR CNAM OVERLOAD CAPABILITY/ EXCEPTION POINT CODE FORM, which allows you to inhibit ACG components to SSP offices that handle platform (system) overload only.

3.42.2 Before you begin

The OVERLOAD CAPABILITY OR EXCEPTION field in the SCCP PARAMETERS FORM, dictates the meaning of the overload capability point code.

Please note the following before proceeding with this procedure:

- A value of C specifies that the point code requires overload capability; the default value is C.
- A value of E specifies that the point code is an exception that does not require overload capability.

For additional information on the form, see the other sections of this document.

3.42.3

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 SIGNALING CONNECTION CONTROL SUBMENU** option.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

4

Select the **SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review D=Delete QR=QueryR QD=QueryD :
```


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5

Type menu command **i** and press **Enter**.

Result: The **SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM** displays.

6

Enter a number value from 1 through 16383 in the **SYSTEM OVERLOAD POINT CODE** field.

Result:

`Enter Insert, Change, Edit, Validate, or Print:` If you are uncertain of the correct value to enter, consult your system administrator.

7

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **SYSTEM OR CNAM OVERLOAD CAPABILITY/ EXCEPTION POINT CODE FORM** displays.

8

Type **<** and press **Enter**.

Result: The **SS7 SIGNALING CONNECTION CONTROL SUBMENU** displays.

9

Type command **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.43 Point code assignment (ANSI)

3.43.1 Description

An ANSI format point code (PC) is a 24-bit value that is assigned to each signaling point (such as a switch, STP, or) in the SS7 network. This value uniquely identifies the signaling point and provides the address information (that is, the originating and terminating points) that is used to route signaling messages throughout the network.

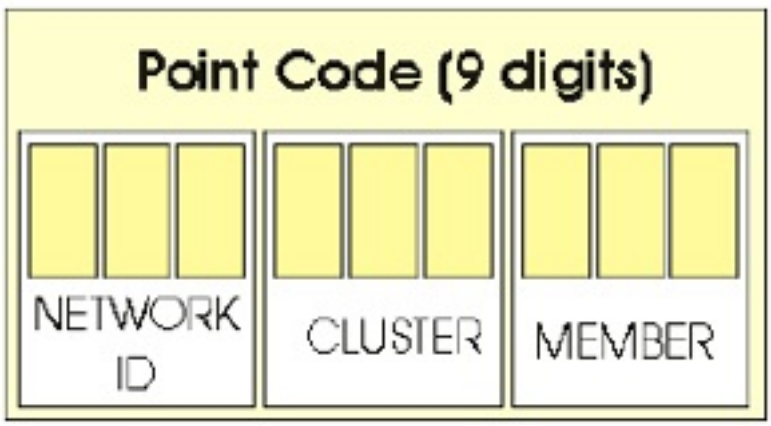
3.43.2 Point code format (ANSI)

The 24-bit PC value is organized into the following eight-bit fields:

- A three-digit network identifier (NID), which is a number that distinguishes this network from other networks. For example, 254 is the network number.
- A three-digit cluster number, which is a number for one grouping of signaling points within the network. The cluster number is assigned by the network administrator.
- A three-digit member number, which is a number for one signaling point within a cluster.

Figure 3-7, “Point code Format (ANSI)” (p. 165) illustrates the point code format.

Figure 3-7 Point code Format (ANSI)



3.43.3 Point code totals per network (ANSI)

The following are the limits on how many point codes a can register:

- 25 networks (NIDs)
- 384 clusters within the 25 networks
- 1,024 members within the 384 clusters

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3.44 Setting Point Codes (ANSI)

3.44.1 Purpose

Network elements (NEs), such as Service Switching Points (SSPs), must be registered in the RC/V system on the platform so that these elements will be known to the platform.

To register each NE in the RC/V system, perform the following procedure.

3.44.2 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

4

Select the **POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

Reference: For more information, refer to the section on the POINT CODE FORM in the other sections of this document or see your network administrator.

5

Type menu command **i** and press **Enter**.

Result: The **POINT CODE FORM** displays.

6

Enter a number value from 0 through 255 in the **NETWORK ID** field (the first three digits of the point code) and press **Enter**.

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7

Enter a number value from 0 through 255 in the **CLUSTER ID** field (the middle three digits of the point code) and press **Enter**.

8

Enter a number value from 0 through 255 in the **MEMBER ID** field (the last three digits of the point code) and press **Enter**.

9

Enter a point code type in the **POINT CODE TYPE** field and press **Enter**. For a list of valid point code types, see 3.44.3 “Point code types” (p. 167).

10

Enter a routing pattern index (RPI) in the **ROUTING PATTERN INDEX** field and press **Enter**. The valid values are 1 - 16.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

11

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **POINT CODE FORM** displays.

12

Type **<** and press **Enter**.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

13

Type command **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

3.44.3 Point code types

Valid point code types are as follows:

- NTWK_0 Network only. Indicates that all point codes use the same routing data.
- CLU_0 Cluster only. Indicates that all point codes in this cluster use the same routing data.
- UPOP_CLU Unpopulated cluster. Indicates that there is only one point code in this cluster.

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- POP_CLU Populated cluster. Provides routing for all members of the cluster.
- SMEMBER Static member. Provides a single member of a cluster with different routing data than the other members.

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3.45 Point code assignment (ITU)

3.45.1 Description

An ITU format point code (PC) is a 14-bit value that is assigned to each signaling point (such as a switch, STP, or) in the SS7 network. This value uniquely identifies the signaling point and provides the address information (that is, the originating and terminating points) that is used to route signaling messages throughout the network.

3.45.2 Point code format (ITU)

The ITU PC format is a single 14-bit field.

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3.46 Setting Point Codes (ITU)

3.46.1 Purpose

Network elements (NEs), such as Service Switching Points (SSPs), must be registered in the RC/V system on the platform so that these elements will be known to the platform.

To register each NE in the RC/V system, perform the following procedure.

3.46.2

1

At the subshl message prompt, enter a RC/V session by typing the following command:

`RCV:MENU;`

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

4

Select the **POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **`i`** and press **Enter**.

Result: The **POINT CODE FORM** displays.

6

Enter a value from 1-16383 in the **POINT CODE** field and press **Enter**.

7

Enter a value of **`SEP`**, **`STP`**, or **`STEP`** in the **POINT CODE TYPE** field and press **Enter**. For a list of valid point code types, see 3.46.3 “Point code types” (p. 171).

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8

Enter a **`RPI (1-16)`** in the **ROUTING PATTERN INDEX** field and press **Enter**.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

9

When you are sure the information you entered is correct, type menu command **`i`** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **POINT CODE FORM** displays.

10

Type **<** and press **Enter**.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

11

Type command **`!`** and press **Enter**.

Result: RC/V exits.

END OF STEPS

3.46.3 Point code types

- SEP - Indicates that all point codes in this cluster use the same routing data.
- STP - Indicates when a signalling point is used as a transfer point.
- STEP - Indicates when a signaling point is used as a transfer point and an end point.

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3.47 Point code assignment (CHN)

3.47.1 Description

A CHN format point code (PC) is a 24-bit value that is assigned to each signaling point (such as a switch, STP, or) in the SS7 network. This value uniquely identifies the signaling point and provides the address information (that is, the originating and terminating points) that is used to route signaling messages throughout the network.

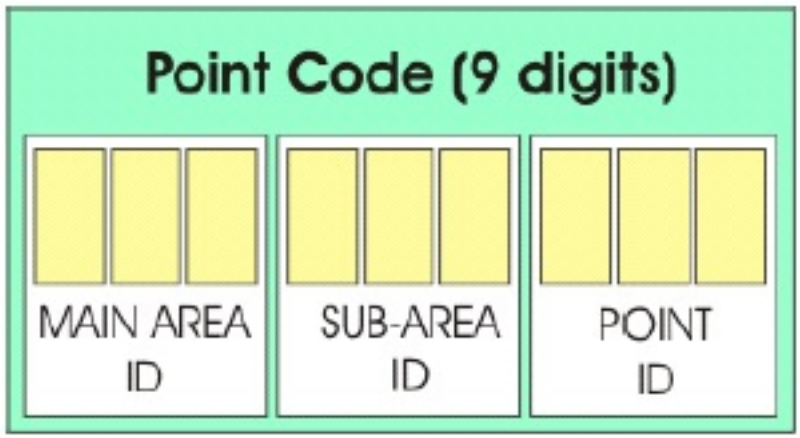
3.47.2 Point code format (CHN)

The 24-bit PC value is organized into the following eight-bit fields:

- A three-digit Main Area ID, which is a number that distinguishes this network from other networks. For example, 254 is the network number.
- A three-digit Sub-area ID, which is a number for one grouping of signaling points within the network. The Sub-Area ID number is assigned by the network administrator.
- A three-digit Point ID, which is a number for one signaling point within a cluster.

Figure 3-8, “Point code Format (CHN)” (p. 172) illustrates the point code format.

Figure 3-8 Point code Format (CHN)



3.47.3 Point code totals per network (CHN)

The following are the limits on how many point codes a can register:

- 25 networks (Main Area IDs)
- 384 clusters within the 25 networks (Sub-area IDs)
- 1,024 members within the 384 clusters (Point IDs)

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3.48 Setting Point Codes (CHN)

3.48.1 Purpose

Network elements (NEs), such as Service Switching Points (SSPs), must be registered in the RC/V system on the platform so that these elements will be known to the platform.

To register each NE in the RC/V system, perform the following procedure.

3.48.2 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

4

Select the **POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **i** and press **Enter**.

Result: The **POINT CODE FORM** displays.

6

Enter a number value from 0 through 255 in the **MAIN AREA ID** field (the first three digits of the point code) and press **Enter**.

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7

Enter a number value from 0 through 255 in the **SUB-AREA ID** field (the middle three digits of the point code) and press **Enter**.

8

Enter a number value from 0 through 255 in the **POINT ID** field (the last three digits of the point code) and press **Enter**.

9

Enter a point code type in the **POINT CODE TYPE** field and press **Enter**. For a list of valid point code types, see 3.48.3 “Point code types” (p. 174).

10

Enter a routing pattern index (RPI) in the **ROUTING PATTERN INDEX** field and press **Enter**.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

11

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **POINT CODE FORM** displays.

12

Type **<** and press **Enter**.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

13

Type command **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

3.48.3 Point code types

Valid point code types are as follows:

- SEP - Indicates that all point codes in this cluster use the same routing data.
- STP - Indicates when a signalling point is used as a transfer point.
- STEP - Indicates when a signaling point is used as a transfer point and an end point.

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3.49 Setting Alias Point Codes (ANSI)

3.49.1 Purpose

Alias point codes must be registered in the RC/V system on the platform so that these elements will be known to the platform. To register each alias point code in the RC/V system, perform the following procedure.

Each alias point code is unique. It is not the same as STP1, STP2, the true platform point code, or any other point code on the alias point code list.

3.49.2

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

4

Select the **ALIAS POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **i** and press **Enter**.

Result: The **ALIAS POINT CODE FORM** displays.

6

Enter a numeric value from 1 through 8 in the **INDEX** field and press **Enter**.

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7

Enter a numeric value from 0 through 255 in the **NETWORK ID** field (the first three digits of the true point code on Form 2.6) and press **Enter**.

8

Enter a numeric value from 0 through 255 in the **CLUSTER ID** field (the middle three digits of the point code) and press **Enter**.

9

Enter a numeric value from 0 through 255 in the **MEMBER ID** field (the last three digits of the point code) and press **Enter**.

10

Enter a **Y** or **N** in the **FORWARD** field (specifies whether a message is forwarded to the mated) and press **Enter**.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

11

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **ALIAS POINT CODE FORM** displays.

12

Type **<** and press **Enter**.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

13

Type command **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.50 Setting Alias Point Codes (ITU)

3.50.1 Purpose

Alias point codes must be registered in the RC/V system on the platform so that these elements will be known to the platform. To register each alias point code in the RC/V system, perform the following procedure.

Each alias point code is unique. It is not the same as STP1, STP2, the true platform point code, or any other point code on the alias point code list.

3.50.2 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

4

Select the **ALIAS POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **i** and press **Enter**.

Result: The **ALIAS POINT CODE FORM** displays.

6

Enter a numeric value from 1 through 8 in the **INDEX** field and press **Enter**.

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7

Enter a numeric value from 1 through 16383 in the **ALIAS POINT CODE** field (the Point code form) and press **Enter**.

8

Enter a **Y** or **N** in the **FORWARD** field (specifies whether a message is forwarded to the mated) and press **Enter**.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

9

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **ALIAS POINT CODE FORM** displays.

10

Type **<** and press **Enter**.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

11

Type command **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.51 Setting Alias Point Codes (CHN)

3.51.1 Purpose

Alias point codes must be registered in the RC/V system on the platform so that these elements will be known to the platform. To register each alias point code in the RC/V system, perform the following procedure.

Each alias point code is unique. It is not the same as STP1, STP2, the true platform point code, or any other point code on the alias point code list.

3.51.2 Procedure

1

At the subshl message prompt, enter a RC/V session by typing the following command:

```
RCV:MENU;
```

Result: The **NETWORK PLATFORM MAIN MENU** displays.

2

Select the **SS7 SERVICE CIRCUIT HANDLER SUBMENU** option.

Result: The **SS7 SERVICE CIRCUIT HANDLER SUBMENU** displays.

3

Select the **SS7 ROUTE MANAGEMENT SUBMENU** option.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

4

Select the **ALIAS POINT CODE FORM** option.

Result:

```
Enter Database Operation
I=Insert R=Review U=Update D=Delete QR=QueryR
QU=QueryU QD=QueryD :
```

5

Type menu command **i** and press **Enter**.

Result: The **ALIAS POINT CODE FORM** displays.

6

Enter a numeric value from 1 through 8 in the **INDEX** field and press **Enter**.

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7

Enter a numeric value from 0 through 255 in the **MAIN AREA ID** field (the first three digits of the true point code on Form 2.6) and press **Enter**.

8

Enter a numeric value from 0 through 255 in the **SUB-AREA ID** field (the middle three digits of the point code) and press **Enter**.

9

Enter a numeric value from 0 through 255 in the **POINT ID** field (the last three digits of the point code) and press **Enter**.

10

Enter a **Y** or **N** in the **FORWARD** field (specifies whether a message is forwarded to the mated) and press **Enter**.

Result:

```
Enter Insert, Change, Edit, Validate, or Print:
```

11

When you are sure the information you entered is correct, type menu command **i** and press **Enter**.

Result:

`inserting... FORM INSERTED` The **ALIAS POINT CODE FORM** displays.

12

Type **<** and press **Enter**.

Result: The **SS7 ROUTE MANAGEMENT SUBMENU** displays.

13

Type command **!** and press **Enter**.

Result: RC/V exits.

END OF STEPS

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3.52 Platform configuration file administration

3.52.1 Procedures in this section

The procedures in this section are required for network elements that require CLLI code.

3.52.2 Configuration data

The configuration data that is specified in this section must be correctly populated before you start the application.

3.52.3 Overview of CLLI codes

Common Language Location Identifier (CLLI) codes are codes (addresses) that are used in the SS7 network in message routing. They uniquely identify switches, STPs, and in the network.

When a is first set up, the param_platform and table contain a placeholder CLLI code. The placeholder values must be replaced by a CLLI code that is specific to the network element of the system.

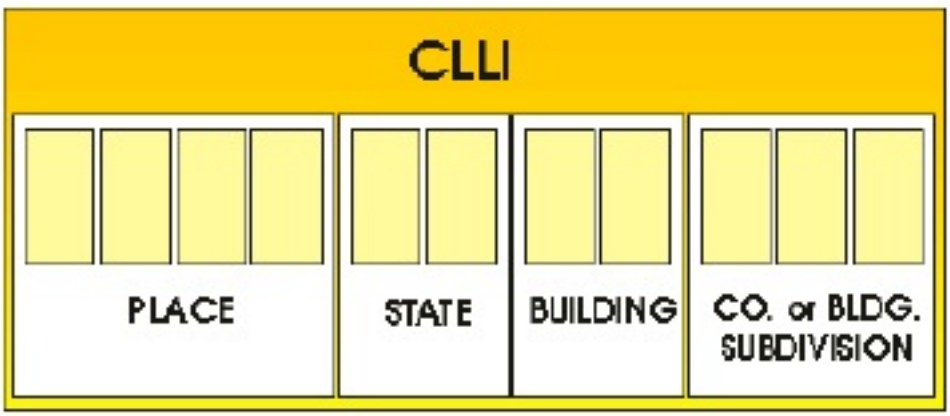
3.52.4 CLLI code format

A CLLI code is a string of up to 11 characters. in the following format

- A four-character value that represents the city or town where the network element is located
- A two-character value that represents the state or province where the network element is located
- A two-character value that identifies the building where the network element is located
- A three-character value that represents the traffic unit identifier that refers to the 's physical location (for example, the company or building subdivision)

The format of a CLLI code is shown in Figure 3-9, “CLLI code format” (p. 181).

Figure 3-9 CLLI code format



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3.53 Updating the param_platform Table

3.53.1 Purpose

To update the param_platform table, perform the following procedure.

3.53.2 Procedure

1

To access the ainet, login and enter:

```
LOGIN:UNIX=ainet;
```

Result: You are prompted for the ANS password.

2

Enter the ainet password.

Result: The `UNIX System V Release...` message appears, followed by the hostname prompt.

3

At the hostname prompt, enter the following information as shown to access Standard Query Language (SQL):

```
psql ops//$scncraft/SQLpassword
```

where SQLpassword = password for scncraft access

Result: The **SQL**> prompt is returned.

4

Execute the following command:

```
select * from param_platform;
```

Result: The param_platform table is displayed. Note the USLI_CLLI field in the table. This field represents the CLLI for the .

It has up to 11 characters in the following format:

CCCCSSBBUUU

where

- cccc is the four-character city, town, or locality code.
- ss is the two-character state or province code.
- bb is the two-character building code.
- uuu is the three-character traffic unit identifier.

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5

Update the USLI_CLLI field with the CLLI code of this by entering the following command on a single line:

```
UPDATE param_platform SET USLI_CLLI='CLII code';
```

See your network administrator for the CLLI code of the .

6

Execute the following command:

```
commit;
```

7

Verify that the CLLI code has been changed to the value that you specified. Enter:

```
select * from param_platform;
```

END OF STEPS

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3.54 Setting Virtual Link Sets (ITU Version)

3.54.1 Setting Virtual Link sets via RCV configuration

The current platform in ITU point code format can support outgoing traffic through a virtual link set containing multiple direct link set. Craft person can provision the virtual link set in the RCV from 3.1.1 SS7 LINK SET FORM for those direct link sets, then the platform can load share the traffic among those link sets within this virtual link set.

Following are the guidelines for these capabilities:

- In the non-cluster configuration, platform can support a virtual link set, which can be composed up to 8 direct link sets and all these direct link sets must have the same adjacent point code. Local secondary point code can be defined within those direct link sets if needs to support multiple local point code.
- In the cluster configuration, a virtual link set can be composed of a set of up to 4 direct link sets, which have different adjacent point code. Outgoing traffic which uses this virtual link set will perform load sharing evenly over those direct link sets. No local secondary point code support for this configuration. Platform also needs to define two combined link sets for those direct link sets in this virtual link set, and the need to provision those combined link set as the first alternate link set and second alternate link set in the RCV form 3.2.1 ROUTING PATTERN INDEX FORM when the virtual link set is provisioned as the normal link set in that routing pattern index.

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Administering SIGTRAN protocols

3.55 Overview

3.55.1 Purpose

This section describes the procedure to administer SIGTRAN protocols.

3.55.2 Contents

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3.56 M2PA configuration

3.56.1 Purpose

M2PA is MTP2 Peer-to-Peer Adaptation Layer. M2PA allows for full MTP3 message handling and network management capabilities between any two SS7 nodes communicating over an IP network.

M2PA provides MTP3 with an interface and services similar to MTP2. In effect, MTP2 and lower layers of the traditional SS7 protocol stack are replaced by an IP equivalent. The SCTP association acts as one SS7 link between the IPSPs. An IPSP may have the Signaling Connection Control Part (SCCP) and other SS7 layers above MTP3.

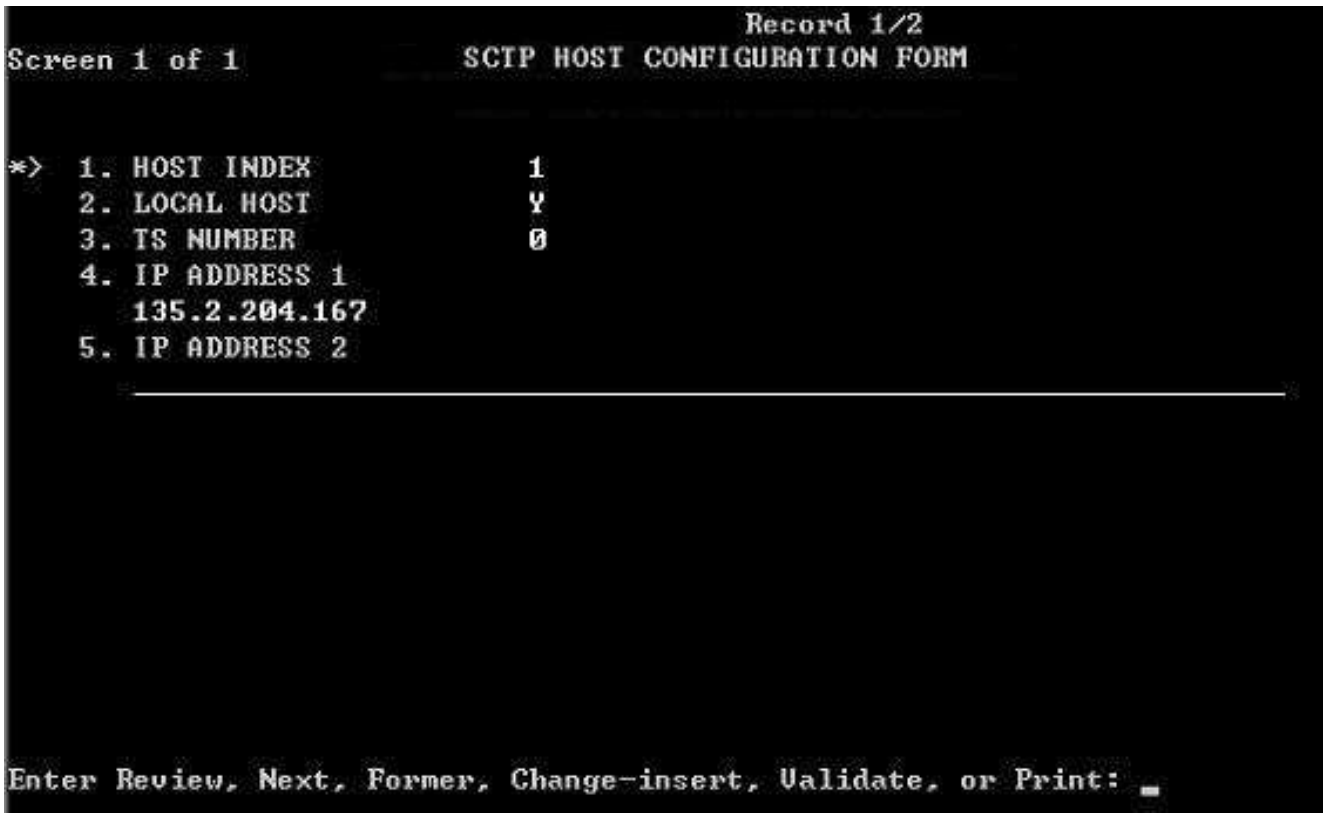
3.56.2 Before you begin

- The procedure in 3.60 “Setting SIGTRAN environment” (p. 212) is already executed.

3.56.3 Steps

1

Configure local host and remote host in Form 12.1 SCTP HOST CONFIGURATION FORM. For example:



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```
                                        Record 2/2
Screen 1 of 1              SCTP HOST CONFIGURATION FORM


*>  1. HOST INDEX              2
    2. LOCAL HOST              N
    3. TS NUMBER               0
    4. IP ADDRESS 1
       135.2.205.30
    5. IP ADDRESS 2
       ____________________________________________________________________


Enter Review, Next, Former, Change-insert, Validate, or Print:
```

2

Configure a M2PA association in Form 12.2 SCTP ASSOCIATION FORM. For example:

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```
                              Record 1/8
Screen 1 of 1
                         SCTP ASSOCIATION FORM

*>1. NODE INDEX               4
*>2. ASSOCIATION INDEX        5
  3. TREATMENT                M2PA

4. LOCAL PORT NUMBER        3565  6. REMOTE PORT NUMBER        3565
5. LOCAL SCTP HOST INDEX    3     7. REMOTE SCTP HOST INDEX    7
8. M3UA ASP INDEX           0     9. M3UA SGP/RASP INDEX       0

10. RTO.INITIAL (millisec)   400  17. HEARTBEAT INTERVAL       1
11. RTO.MIN (millisec)       200  18. T1 INIT TIMER (millisec)  3000
12. RTO.MAX (millisec)       2000 19. T1 COOKIE TIMER           4
13. VALID COOKIE LIFE        60   20. ASSOCIATION MODE        CLIENT
14. ASSOCIATION MAX RETRAN   20   21. FIXED PRIMARY             _____
15. PATH MAX RETRANSMISSIONS 9    22. SACK TIMER (millisec)    _____
16. MAX INIT RETRANSMISSIONS 8

Enter Review, Next, Former, Change-insert, Validate, or Print:
```

3

In the following steps, you may treat M2PA link as one kind of SS7 link to proceed the normal SS7 link configuration. Configure SS7 board for M2PA in FORM 3.1.2 INTERFACE CONTROLLER BOARD FORM. For example:

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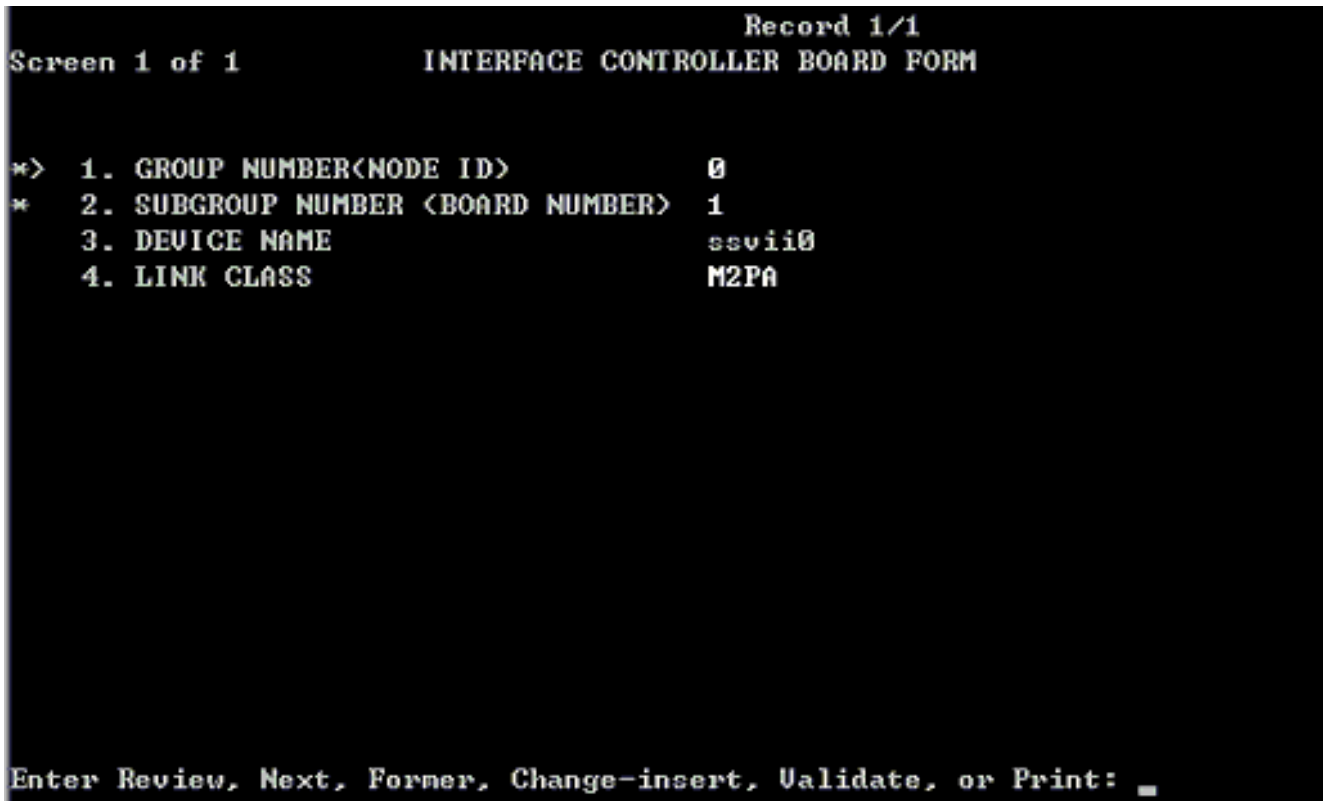

4

Insert a SS7 link in FORM 3.1.3 MTP2 LINK FORM with association index same as the one configured in Form12.2(an M2PA treatment association). And adjust the link timers and link thresholds accordingly.

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```
                                        Record 1/1
Screen 1 of 1                  MTP2 LINK FORM


*>  1. GROUP NUMBER (NODE ID)              0   4. LINK SET NUMBER 1
*   2. SUBGROUP NUMBER (BOARD NUMBER)      1   5. LINK CODE (SLC) 0
*   3. MEMBER NUMBER (PORT/CHANNEL NUMBER) 1   6. ASSOCIATION INDEX 1

            LINK TIMERS                          LINK THRESHOLDS
            -----------                          ---------------
    7. ALIGNED AND READY          (T1) 13000   15. ABATE LEVEL 1   16000
    8. NOT ALIGNED                (T2) 11500   16. ONSET LEVEL 1   24000
    9. ALIGNED                    (T3) 11500   17. DISCARD LEVEL 1 32000
   10. NORMAL PROVE-IN           (T4N) 2300    18. ABATE LEVEL 2   30000
   11. EMERGENCY PROVE-IN        (T4E) 600     19. ONSET LEVEL 2   36000
   12. LOCAL CONGESTION           (T5) 80      20. DISCARD LEVEL 2 48000
   13. REMOTE CONGESTION          (T6) 3000    21. ABATE LEVEL 3   42000
   14. DELAY OF ACK               (T7) 2000    22. ONSET LEVEL 3   50000
                                               23. DISCARD LEVEL 3 60000
                                               24. SUERM           64

Enter Review, Next, Former, Change-insert, Validate, or Print: _
```

5

If the M2PA link's far end is SG(Signaling Gateway), skip this step. If the far end is adjacent signaling point as connection is IPSP to IPSP, need to configure adjacent point code in Form 3.1.1 LINK SET FORM.

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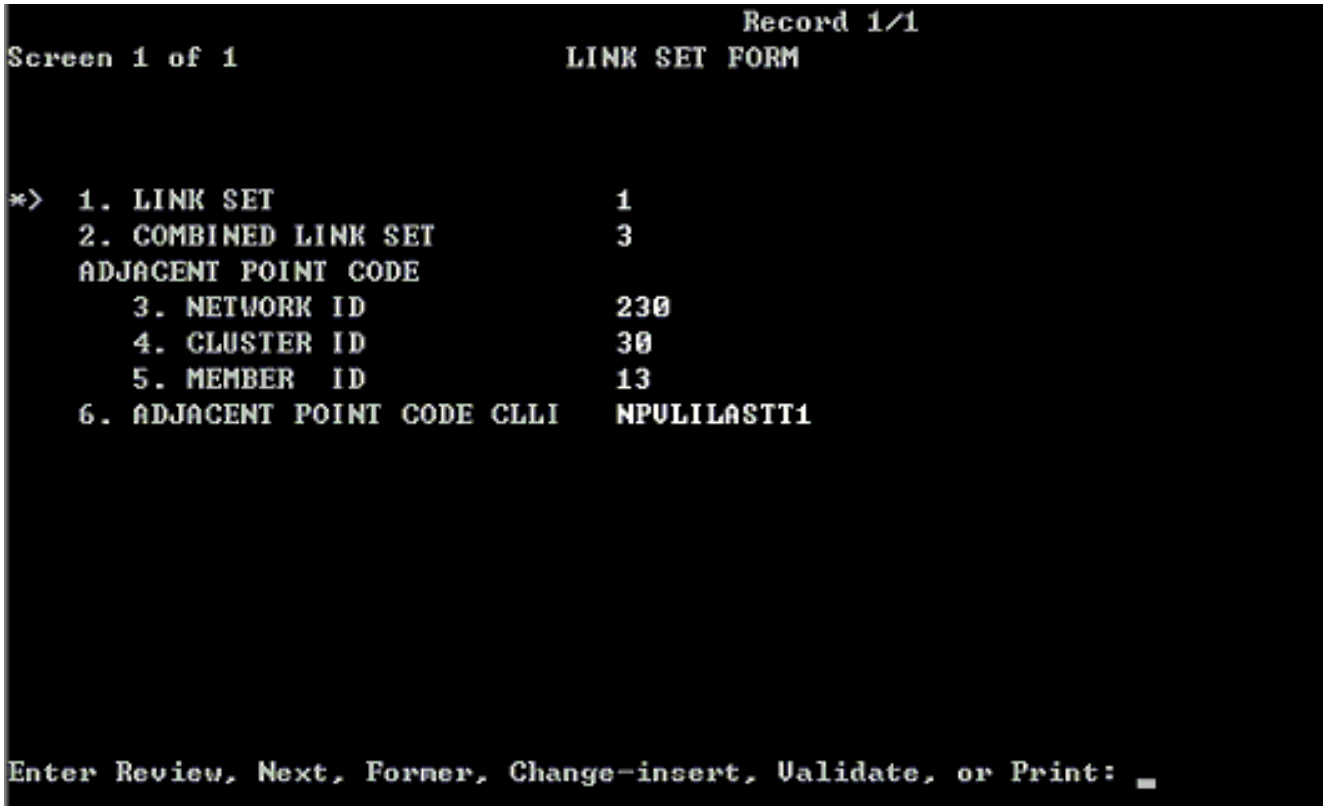

6

Start up SS7 board with command **rst:ss7brd**. Using command **op:status,ss7brd** to check SS7 board status should be active.

7

Start up association with commands rst:assoc. Using command op:status,assoc to check association status should be active.

8

Start up SS7 link with command **rst:slk**. Using command **op:slk** to check SS7 link status should be active.

9

If you want to take down the link by "rmv:slk", you have to take down the association first by "rmv:assoc".

END OF STEPS

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3.56.4 Additional notes

Figure 3-10, “Form 3.1.3 MTP2 LINK FORM” (p. 193) contains parameters for M2PA (RFC4165). The Table 3-8, “M2PA SIGTRAN parameters range” (p. 191) lists a set of sample parameters tested in the same lab for M2PA SIGTRAN. The value set is the recommended default value from vendor ADAX.

It is important to set the value of "DELAY OF ACK(T7)" timer (field 14 in Figure 3-10, “Form 3.1.3 MTP2 LINK FORM” (p. 193)) to be close or greater than the multiplication of "ASSOCIATION MAX RETRAN" (field 14 in Figure 3-11, “Form 12.2 SCTP ASSOCIATION FORM” (p. 201)) and "RTO.MIN" (field 11 in Figure 3-11, “Form 12.2 SCTP ASSOCIATION FORM” (p. 201)).

Figure 3-11, “Form 12.2 SCTP ASSOCIATION FORM” (p. 201) contains SCTP network related parameters (field 10 - field 19). The default values for these parameters are chosen based on RFC2960.

But these parameters are closely related to the customer network condition. Listed in the Figure 3-11, “Form 12.2 SCTP ASSOCIATION FORM” (p. 201) are a set of recommended parameters that have been tested in lab environment. The user can adjust the parameters based on customer's network performances and RFC2960.

Table 3-8 M2PA SIGTRAN parameters range

Field	Range	Recommended value
7. ALIGNED AND READY (T1):	1000-60000	45000
8. NOT ALIGNED (T2):	1000-60000	60000
9. ALIGNED (T3):	1000-1500	1000
10. NORMAL PROVE-IN (T4N);	1000-60000	10000
11. EMERGENCY PROVE-IN (T4E);	400 -600	500
12. LOCAL CONGESTION (T5):	(Not applicable to M2PA)	
13. REMOTE CONGESTION (T6);	1000-6000	4500
14. DELAY OF ACK (T7);	500-2000	2000

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Figure 3-10 Form 3.1.3 MTP2 LINK FORM

```
                                Record 1/2
Screen 1 of 1
                                 MTP2 LINK FORM
*>  1. GROUP NUMBER (NODE ID)                0   4. LINK SET NUMBER 2
*   2. SUBGROUP NUMBER (BOARD NUMBER)        1   5. LINK CODE (SLC) 1
*   3. MEMBER NUMBER (PORT/CHANNEL NUMBER) 1     6. ASSOCIATION INDEX 1
              LINK TIMERS                          LINK THRESHOLDS
              -----------                          ---------------
    7. ALIGNED AND READY          (T1) 45000   15. ABATE LEVEL 1   1600
    8. NOT ALIGNED                (T2) 60000   16. ONSET LEVEL 1   2400
    9. ALIGNED                    (T3) 1000    17. DISCARD LEVEL 1 3200
   10. NORMAL PROVE-IN           (T4N) 10000   18. ABATE LEVEL 2   3000
   11. EMERGENCY PROVE-IN        (T4E) 500     19. ONSET LEVEL 2   3600
   12. LOCAL CONGESTION           (T5) 80      20. DISCARD LEVEL 2 4800
   13. REMOTE CONGESTION          (T6) 4500    21. ABATE LEVEL 3   4200
   14. DELAY OF ACK               (T7) 2000    22. ONSET LEVEL 3   5000
                                               23. DISCARD LEVEL 3 6000
                                               24. SUERM           64
```

Reference

Additionally, see *Recent Change and Verify Guide, 9YZ-04432-4221-RKZZA* for form details.

- For Form 12.1 - 12.2 M2PA SIGTRAN configuration, see chapter *Provisioning SIGTRAN protocols (SCTP, M3UA, and M2PA)*.
- For Form 3.1.1 - 3.1.3 SS7 LINK configuration, see chapter *Administering SS7, Submenu 3.1: SS7 LINK MANAGEMENT SUBMENU*.

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3.57 M3UA AS-SG configuration

3.57.1 Purpose

M3UA provides support for SS7 MTP level 3 layer functionality for network elements in an IP network. The assumes there is a Signaling Gateway in the network. The following procedure is for setting up an AS-SG association.

3.57.2 Before you begin

- The procedure in 3.60 “Setting SIGTRAN environment” (p. 212) section is executed.

3.57.3 Steps

1

Configure local host and remote host in Form 12.1 SCTP HOST CONFIGURATION FORM. If multi-home is supported, both IP addresses needs to be configured. And the two IP addresses have to be in different subnet. Below configuration shows single-home example:

```
                                                Record 1/2
Screen 1 of 1              SCTP HOST CONFIGURATION FORM


*>  1. HOST INDEX                1
    2. LOCAL HOST                Y
    3. TS NUMBER                 0
    4. IP ADDRESS 1
       135.2.204.167
    5. IP ADDRESS 2
    ____________________________________________________________________________


Enter Review, Next, Former, Change-insert, Validate, or Print: _
```

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```
                                        Record 2/2
Screen 1 of 1              SCTP HOST CONFIGURATION FORM


*>  1. HOST INDEX              2
    2. LOCAL HOST              N
    3. TS NUMBER               0
    4. IP ADDRESS 1
       135.2.205.30
    5. IP ADDRESS 2
       ____________________________________________________________________


Enter Review, Next, Former, Change-insert, Validate, or Print:
```

2

Configure local ASP in Form 12.3 M3UA APPLICATION SERVER PROCESS (ASP) FORM. For SG-AS type configuration, ASP always act as client. For example:

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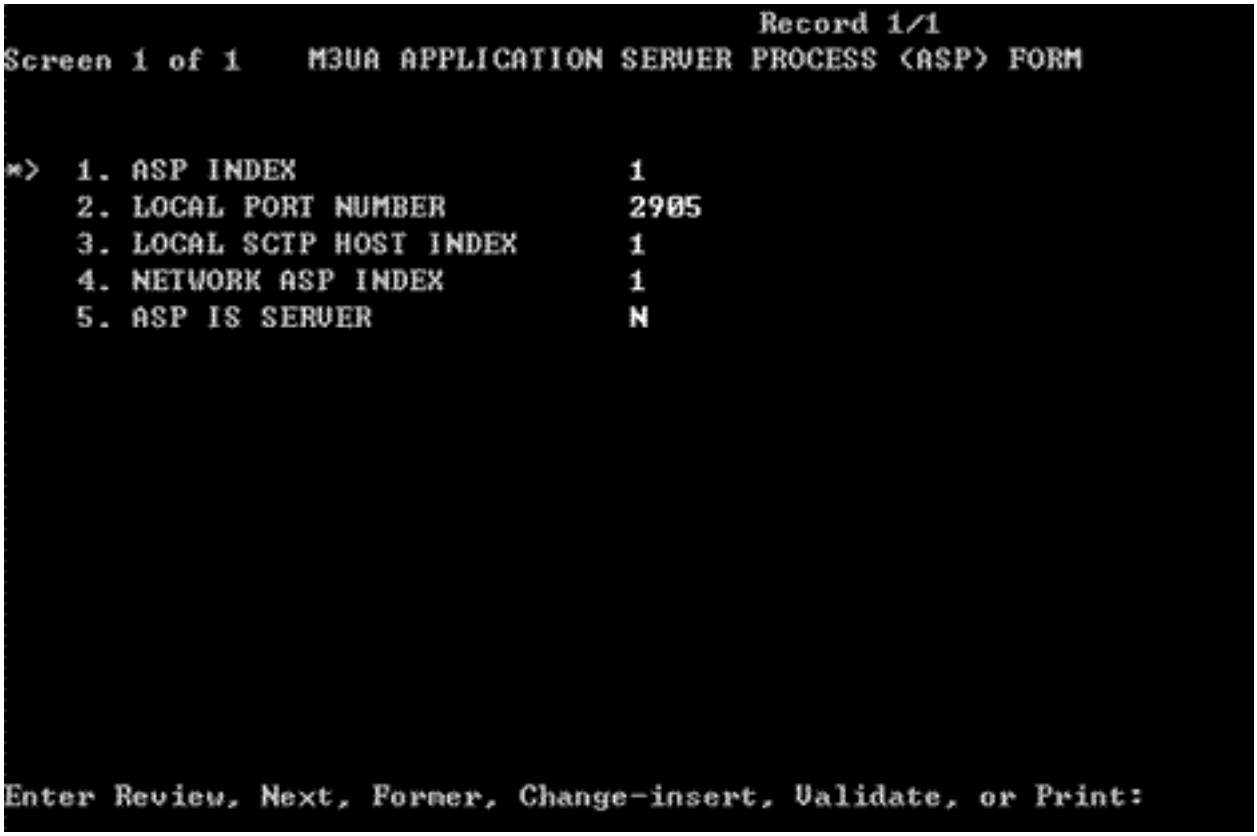

3

Configure SGP in Form 12.4 M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. For example:

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```
Screen 1 of 1      M3UA SIGNALING GATEWAY PROCESS (SGP) FORM


*>  1. SGP INDEX                  1
    2. REMOTE PORT NUMBER         2905
    3. REMOTE SCTP HOST INDEX     2
    4. ROUTING CONTEXT            1









Enter Insert, Change, Edit, Validate, or Print:
```

4

Configure SG in FORM 12.5 M3UA SIGNALING GATEWAY (SG) FROM. For example:

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```
Screen 1 of 1          M3UA SIGNALING GATEWAY (SG) FORM


*>  1. SG INDEX                          1
    2. SG CLLI                           THIS_IS_SG1
    3. SG TRAFFIC DISTRIBUTION MODE      L
    4. PRIMARY SGP INDEX                 1
    5. SECONDARY SGP INDEX               0

    POINT CODE
       6. NETWORK                        231
       7. CLUSTER                        11
       8. MEMBER                         0









Enter Insert, Change, Edit, Validate, or Print:
```

5

Configure local AS in FORM 12.6 M3UA APPLICATION SERVER(AS) FORM. For example:

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```
                                        Record 1/1
Screen 1 of 2
        M3UA APPLICATION SERVER (AS) FORM


*> 1. AS INDEX                  1__        3. ROUTING KEY TYPE   RKD
   2. APPLICATION SERVER MODE   0          4. POINT CODE TYPE    ____
   5. NETWORK APPEARANCE       NONE
   6. ASP INDEX 1     __     20. ASP INDEX 15  0    34. ASP INDEX 29  0
   7. ASP INDEX 2      0     21. ASP INDEX 16  0    35. ASP INDEX 30  0
   8. ASP INDEX 3      0     22. ASP INDEX 17  0    36. ASP INDEX 31  0
   9. ASP INDEX 4      0     23. ASP INDEX 18  0    37. ASP INDEX 32  0
  10. ASP INDEX 5      0     24. ASP INDEX 19  0    38. RSP INDEX 1   __
  11. ASP INDEX 6      0     25. ASP INDEX 20  0    39. RSP INDEX 2   0
  12. ASP INDEX 7      0     26. ASP INDEX 21  0    40. RSP INDEX 3   0
  13. ASP INDEX 8      0     27. ASP INDEX 22  0    41. RSP INDEX 4   0
  14. ASP INDEX 9      0     28. ASP INDEX 23  0    42. RSP INDEX 5   0
  15. ASP INDEX 10     0     29. ASP INDEX 24  0    43. RSP INDEX 6   0
  16. ASP INDEX 11     0     30. ASP INDEX 25  0    44. RSP INDEX 7   0
  17. ASP INDEX 12     0     31. ASP INDEX 26  0    45. RSP INDEX 8   0
  18. ASP INDEX 13     0     32. ASP INDEX 27  0    46. RSP INDEX 9   0
  19. ASP INDEX 14     0     33. ASP INDEX 28  0    47. RSP INDEX 10  0



AS INDEX. Enter 1-16 for stand alone config and 1 for cluster config
```

```
Screen 2 of 2
                M3UA APPLICATION SERVER (AS) FORM


    48. RSP INDEX 11  0
    49. RSP INDEX 12  0
    50. RSP INDEX 13  0
    51. RSP INDEX 14  0
    52. RSP INDEX 15  0
    53. RSP INDEX 16  0
    54. RSP INDEX 17  0
    55. RSP INDEX 18  0
    56. RSP INDEX 19  0
    57. RSP INDEX 20  0
```

6

Configure association in FORM 12.2 SCTP ASSOCIATION FORM. For example:

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```
                                        Record 1/1
Screen 1 of 1              SCTP ASSOCIATION FORM


*>  1. NODE INDEX               0
*>  2. ASSOCIATION INDEX        1
    3. TREATMENT                M3UA

    4. LOCAL PORT NUMBER        2905       6. REMOTE PORT NUMBER          2905
    5. LOCAL SCTP HOST INDEX    1          7. REMOTE SCTP HOST INDEX      2

    8. M3UA ASP INDEX           1          9. M3UA SGP/RASP INDEX         1

   10. RTO.INITIAL (millisec)   3000      15. PATH MAX RETRANSMISSIONS    5
   11. RTO.MIN (millisec)       1000      16. MAX INIT RETRANSMISSIONS    8
   12. RTO.MAX (millisec)       60000     17. HEARTBEAT INTERVAL          30
   13. VALID COOKIE LIFE        60        18. T1 INIT TIMER (millisec)    3000
   14. ASSOCIATION MAX RETRAN   10        19. T1 COOKIE TIMER             4
                                          20. ASSO_MODE                 CLIENT


Enter Insert, Change, Edit, Validate, or Print: _
```

7

Configure Point Code in Form 12.7 SCTP ASSOCIATION FORM.

```
Screen 1 of 1
                          M3UA POINT CODE FORM

*>  1. NETWORK ID                      230
*   2. CLUSTER ID                      35
*   3. MEMBER ID                       12
*   4. NETWORK APPEARANCE              2
    5. NORMAL SG INDEX                 1
    6. FIRST ALTERNATE SG INDEX        0
    7. SECOND ALTERNATE SG INDEX       0
    8. TRAFFIC DISTRIBUTION MODE       0


NETWORK ID. Enter a value between 0 and 255.
```

8

Start up association with command rst:assoc.

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Using command **op:status,assoc** to check sctp association status should be active. Using command **op:status,assoc,m3ua** to check m3ua connection and ASP status should be active.

9

Remove association with command rmv:assoc.

Using command **op:status,assoc** to check sctp association status should become MOOS. Using command **op:status,assoc,m3ua** to check m3ua connection and ASP status should become MOOS.

Important! For cluster configuration, each node has one local ASP, the ASP index must be equal with node index+1. Each node in the cluster will contain the configuration of the other nodes in the cluster so the configuration for all nodes in the cluster will appear the same.

END OF STEPS

3.57.4 Additional notes

3.57.4 Figure 3-11, “Form 12.2 SCTP ASSOCIATION FORM” (p. 200) contains SCTP network related parameters (field 10 - field 19). The default values for these parameters are chosen based on **RFC2960**.

But these parameters are closely related to the customer network condition. Listed below are a set of recommended parameter that have been tested in lab environment. The user can adjust the parameters based on customer's network performances and **RFC2960**.

Figure 3-11 Form 12.2 SCTP ASSOCIATION FORM

```
                                Record 1/2
Screen 1 of 1
                            SCTP ASSOCIATION FORM
*>  1. NODE INDEX               0
*>  2. ASSOCIATION INDEX        1
    3. TREATMENT                M3UA
    4. LOCAL PORT NUMBER        8000     6. REMOTE PORT NUMBER          3565
    5. LOCAL SCTP HOST INDEX    1        7. REMOTE SCTP HOST INDEX      3
    8. M3UA ASP INDEX           0        9. M3UA SGP/RASP INDEX         0
   10. RTO.INITIAL (millisec)   400      15. PATH MAX RETRANSMISSIONS   5
   11. RTO.MIN (millisec)       200      16. MAX INIT RETRANSMISSIONS   8
   12. RTO.MAX (millisec)       2000     17. HEARTBEAT INTERVAL         1
   13. VALID COOKIE LIFE        60       18. T1 INIT TIMER (millisec)   3000
   14. ASSOCIATION MAX RETRAN   10       19. T1 COOKIE TIMER            4
                                         20. ASSO_MODE                  CLIENT
```


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3.58 M3UA IPSP-IPSP configuration

3.58.1 Purpose

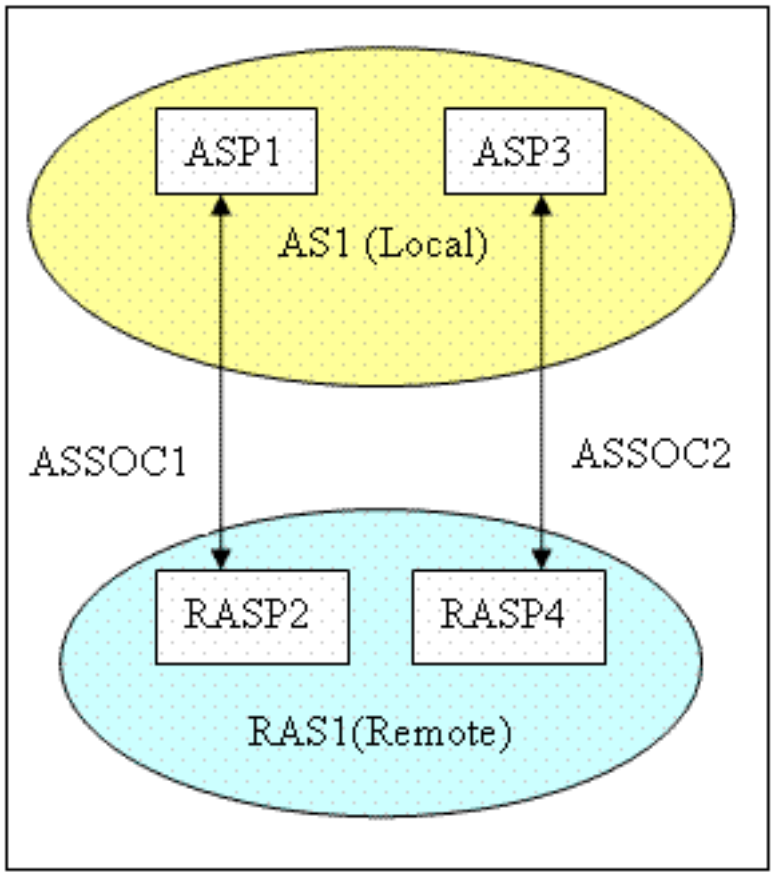
M3UA provides support for SS7 MTP level 3-layer functionality for network elements in an IP network. An IPSP is essentially the same as an ASP, except that it uses M3UA in a point-to-point fashion. The following procedure is for setting up an IPSP-IPSP association.

3.58.2 Before you begin

- The procedure in 3.60 “Setting SIGTRAN environment” (p. 212) section is executed.

The procedure is used to setup a IPSP-IPSP configuration. See the *Recent Change and Verify Guide* for the details on each form shown in the example.

Figure 3-12 IPSP-IPSP configuration



Before configuration, check that the *SS7 OFFICE PARAMETERS FORM* has been configured correctly with field 6 **DISTRIBUTED_SS7** set to **C** (for clustered configuration of running SS7 processes as single stacks within a single SS7 I/O node) or **M** (for allowing SS7 processes to run as multiple SS7 stacks within a single SS7 I/O node).

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```
                                Record 1/1
Screen 1 of 1
                       SS7 OFFICE PARAMETERS FORM
*>  1. NETWORK ID                        ABCDE
    2. OFFICE ID                         444
    3. SEAS CLLI                         ABCDEFGHIJK
    4. POINT CODE FORMAT                 ANSI
    5. NETWORK INDICATOR                 NATL
    6. DISTRIBUTED SS7                   C
    7. INTERNAL CARGO TIMER              50
                     NETWORK ID   CLUSTER ID   MEMBER ID
                     ----------   ----------   ----------
    LOCAL POINTCODE  8. LN  230   9. LC  030  10. LM  013
    STP 1           11. S1N 230  12. S1C 001  13. S1M 000
    STP 2           14. S2N 230  15. S2C 002  16. S2M 000
```

3.58.3 Steps

1

Configure local host and remote host in *Form 12.1 SCTP HOST CONFIGURATION FORM*. For example:

```
                                  Record 1/2
Screen 1 of 1
                            SCTP HOST CONFIGURATION FORM
*>  1. HOST INDEX              1
    2. LOCAL HOST              Y
    3. TS NUMBER               0
    4. IP ADDRESS 1
       10.1.1.125

    5. IP ADDRESS 2
       10.1.1.125
```


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```
                                  Record 2/2
Screen 1 of 1
                          SCTP HOST CONFIGURATION FORM
*>  1. HOST INDEX            3
    2. LOCAL HOST            N
    3. TS NUMBER             0
    4. IP ADDRESS 1
       10.1.1.100
    5. IP ADDRESS 2
       10.1.1.100
```

2

Configure local ASP in Form 12.3 *M3UA APPLICATION SERVER PROCESS (ASP) FORM*. For IPSP to IPSP communication, the peer endpoints using M3UA may be configured so that one takes on the role of client and the other takes the role of server for initiating SCTP association. In this example, the local ASP acts as client and the remote ASP acts as server.

```
                                  Record 1/2
Screen 1 of 1
                  M3UA APPLICATION SERVER PROCESS (ASP) FORM
*>  1. ASP INDEX                  1
    2. LOCAL PORT NUMBER          2905
    3. LOCAL SCTP HOST INDEX      1
    4. NETWORK ASP INDEX          1
    5. ASP IS SERVER              N
```

```
                                  Record 2/2
Screen 1 of 1
                  M3UA APPLICATION SERVER PROCESS (ASP) FORM
*>  1. ASP INDEX                  3
    2. LOCAL PORT NUMBER          8003
    3. LOCAL SCTP HOST INDEX      1
    4. NETWORK ASP INDEX          3
    5. ASP IS SERVER              N
```

3

Before configuring Remote ASP, Remote AS must be configured in Form 12.8 M3UA REMOTE APPLICATION SERVER (RAS) FORM. For example:

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```
                                  Record 1/1
Screen 1 of 1
                  M3UA REMOTE APPLICATION SERVER (RAS) FORM
*>  1. REMOTE AS INDEX                 1
    2. REMOTE AS CLLI                  THIS_RAS_01
    3. REMOTE APPLICATION SERVER MODE  L
    4. ROUTING CONTEXT                 1
    POINT CODE
    5. NETWORK                         230
    6. CLUSTER                         30
    7. MEMBER                          12
```

4

Configure Remote ASP in Form 12.9 *M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM*. The REMOTE PORT NUMBER, NETWORK ASP INDEX, and INITIALIZATION METHOD should be consistent with far end ASP. For example:

```
Screen 1 of 1
          M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM

*>  1. REMOTE ASP INDEX           2
    2. REMOTE PORT NUMBER         8001
    3. REMOTE SCTP HOST INDEX     3
    4. NETWORK ASP INDEX          2
    5. INITIALIZATION METHOD      SE
    6. REMOTE AS INDEX            1
    7. ROUTING CONTEXT            2
```

```
                                  Record 2/2
Screen 1 of 1
              M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM
*>  1. REMOTE ASP INDEX           4
    2. REMOTE PORT NUMBER         2905
    3. REMOTE SCTP HOST INDEX     3
    4. NETWORK ASP INDEX          4
    5. INITIALIZATION METHOD      SE
    6. REMOTE AS INDEX            1
```

5

Configure local AS in FORM 12.6 *M3UA APPLICATION SERVER (AS) FORM*. For example

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```
                                  Record 1/1
Screen 1 of 2
                      M3UA APPLICATION SERVER (AS) FORM
*>  1. AS INDEX                  1           3. ROUTING KEY TYPE  RKD
    2. APPLICATION SERVER MODE   L           4. POINT CODE TYPE   TPC
     5. ASP INDEX 1   1       19. ASP INDEX 15  0       33. ASP INDEX 29  0
     6. ASP INDEX 2   3       20. ASP INDEX 16  0       34. ASP INDEX 30  0
     7. ASP INDEX 3   0       21. ASP INDEX 17  0       35. ASP INDEX 31  0
     8. ASP INDEX 4   0       22. ASP INDEX 18  0       36. ASP INDEX 32  0
     9. ASP INDEX 5   0       23. ASP INDEX 19  0       37. RSP INDEX 1   2
    10. ASP INDEX 6   0       24. ASP INDEX 20  0       38. RSP INDEX 2   4
    11. ASP INDEX 7   0       25. ASP INDEX 21  0       39. RSP INDEX 3   0
    12. ASP INDEX 8   0       26. ASP INDEX 22  0       40. RSP INDEX 4   0
    13. ASP INDEX 9   0       27. ASP INDEX 23  0       41. RSP INDEX 5   0
    14. ASP INDEX 10  0       28. ASP INDEX 24  0       42. RSP INDEX 6   0
    15. ASP INDEX 11  0       29. ASP INDEX 25  0       43. RSP INDEX 7   0
    16. ASP INDEX 12  0       30. ASP INDEX 26  0       44. RSP INDEX 8   0
    17. ASP INDEX 13  0       31. ASP INDEX 27  0       45. RSP INDEX 9   0
    18. ASP INDEX 14  0       32. ASP INDEX 28  0       46. RSP INDEX 10  0
```

6

Configure association in Form 12.2 *SCTP ASSOCIATION FORM*.

```
                                  Record 1/2
Screen 1 of 1
                            SCTP ASSOCIATION FORM
*>  1. NODE INDEX                0
*>  2. ASSOCIATION INDEX         1
    3. TREATMENT                 IPSP
    4. LOCAL PORT NUMBER         2905        6. REMOTE PORT NUMBER          8001
    5. LOCAL SCTP HOST INDEX     1           7. REMOTE SCTP HOST INDEX      3
    8. M3UA ASP INDEX            1           9. M3UA SGP/RASP INDEX         2
   10. RTO.INITIAL (millisec)    3000       15. PATH MAX RETRANSMISSIONS    5
   11. RTO.MIN (millisec)        1000       16. MAX INIT RETRANSMISSIONS    8
   12. RTO.MAX (millisec)        60000      17. HEARTBEAT INTERVAL          10
   13. VALID COOKIE LIFE         60         18. T1 INIT TIMER (millisec)    3000
   14. ASSOCIATION MAX RETRAN    10         19. T1 COOKIE TIMER             4
                                            20. ASSO_MODE                   CLIENT
```

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```
                                Record 2/2
Screen 1 of 1
                           SCTP ASSOCIATION FORM
*>  1. NODE INDEX               0
*>  2. ASSOCIATION INDEX        2
    3. TREATMENT                IPSP
    4. LOCAL PORT NUMBER        8003       6. REMOTE PORT NUMBER         2905
    5. LOCAL SCTP HOST INDEX    1          7. REMOTE SCTP HOST INDEX     3
    8. M3UA ASP INDEX           3          9. M3UA SGP/RASP INDEX        4
   10. RTO.INITIAL (millisec)   3000      15. PATH MAX RETRANSMISSIONS   5
   11. RTO.MIN (millisec)       1000      16. MAX INIT RETRANSMISSIONS   8
   12. RTO.MAX (millisec)       60000     17. HEARTBEAT INTERVAL         10
   13. VALID COOKIE LIFE        60        18. T1 INIT TIMER (millisec)   3000
   14. ASSOCIATION MAX RETRAN   10        19. T1 COOKIE TIMER            4
                                          20. ASSO_MODE                CLIENT
```

7

Start up association with command **rst:assoc**. In the same time, ensure that the far end has configured consistently to be able to do successful handshaking.

Using command **op:status,assoc** to check that sctp association status should be active. Using command **op:status,assoc,m3ua** to check m3ua connection, ASP, and remote ASP status should be active.

8

Remove association with command **rmv:assoc**. Using command **op:status,assoc** to check that sctp association status should become MOOS. Using command **op:status, assoc,m3ua** to check m3ua connection, ASP, and remote ASP status should become MOOS.

Important! For cluster configuration, each node can act as up to one ASP, the ASP index must be equal with node index+1. Each node in the cluster contains the configuration of the other nodes in the cluster so the configuration for all nodes in the cluster appears the same.

Additional steps required for cluster configuration In the clustered configuration, you also need to configure the RC/V forms to complete the configuration on one node of the cluster. The similar configuration is to be performed across the cluster.

Check the Form *SS7 OFFICE PARAMETERS FORM* to ensure field 6 **DISTRIBUTED SS7** is set to **C**.

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```
                                    Record 1/1
Screen 1 of 1
                            SS7 OFFICE PARAMETERS FORM
*>  1. NETWORK ID                        ABCDE
    2. OFFICE ID                         444
    3. SEAS CLLI                         ABCDEFGHIJK
    4. POINT CODE FORMAT                 ANSI
    5. NETWORK INDICATOR                 NATL
    6. DISTRIBUTED SS7                   C
    7. INTERNAL CARGO TIMER              50
                      NETWORK ID   CLUSTER ID   MEMBER ID
                      ----------   ----------   ----------
    LOCAL POINTCODE  8. LN  230   9. LC  030  10. LM  013
    STP 1           11. S1N 230  12. S1C 001  13. S1M 000
    STP 2           14. S2N 230  15. S2C 002  16. S2M 000
```

Check Form *CLUSTER PARAMETERS FORM* to ensure field 3 **CLUSTER NODE ID** set to the correct node id. Inside the cluster, each node should have different node id. In the example, the node id is **0** for this node.

```
                                    Record 1/1
Screen 1 of 1
                             CLUSTER PARAMETERS FORM
*>  1. NETWORK ID                        ABCDE
    2. OFFICE ID                         444
    3. CLUSTER NODE ID                   0
    4. CLUSTER ROUTING                   LS
    5. BLOCK CLUSTER SS7 LINKS           N
    6. BLOCK LOCAL SS7 LINKS             N
    7. NAMING RULE FOR CLUSTER NAME      P
    8. CONNECTION DELAY TIMER            0
    9. NUMBER OF NODES UP TO CONNECT     0
```

Configure form *NODE TO LAN ASSIGNMENT* to have the correct **LAN ID** for each node id. In the example, the node 0 and node 1 all belong to the same LAN ID 1.

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```
                                  Record 1/1
Screen 1 of 1
                        NODE TO LAN ASSIGNMENT FORM
*>  1. NETWORK ID                       ABCDE
    2. OFFICE ID                        444
     NODE ID   LAN ID   NODE ID   LAN ID   NODE ID   LAN ID   NODE ID   LAN ID
   ---------- ------ ---------- ------ ---------- ------ ---------- ------
    3. NODE 0   1     11. NODE 8   0     19. NODE 16  0     27. NODE 24  0
    4. NODE 1   1     12. NODE 9   0     20. NODE 17  0     28. NODE 25  0
    5. NODE 2   0     13. NODE 10  0     21. NODE 18  0     29. NODE 26  0
    6. NODE 3   0     14. NODE 11  0     22. NODE 19  0     30. NODE 27  0
    7. NODE 4   0     15. NODE 12  0     23. NODE 20  0     31. NODE 28  0
    8. NODE 5   0     16. NODE 13  0     24. NODE 21  0     32. NODE 29  0
    9. NODE 6   0     17. NODE 14  0     25. NODE 22  0     33. NODE 30  0
   10. NODE 7   0     18. NODE 15  0     26. NODE 23  0     34. NODE 31  0
```

END OF STEPS

Note:

Figure 3-13, “Form 12.2 SCTP ASSOCIATION FORM” (p. 208) contains few SCTP network-related parameters (field 10 - field 19). And the default values for these fields are chosen based on **RFC2960**.

But these parameters are closely related to the customer network condition. The example shows a set of recommended parameters that has been tested in lab environment. The user can adjust the parameters based on customer network performance and **RFC2960**.

Figure 3-13 Form 12.2 SCTP ASSOCIATION FORM

```
                               Record 1/2
Screen 1 of 1
                            SCTP ASSOCIATION FORM
*>  1. NODE INDEX               0
*>  2. ASSOCIATION INDEX        1
    3. TREATMENT                IPSP
    4. LOCAL PORT NUMBER        8000       6. REMOTE PORT NUMBER         3565
    5. LOCAL SCTP HOST INDEX    1          7. REMOTE SCTP HOST INDEX     3
    8. M3UA ASP INDEX           0          9. M3UA SGP/RASP INDEX        0
   10. RTO.INITIAL (millisec)   400       15. PATH MAX RETRANSMISSIONS   5
   11. RTO.MIN (millisec)       200       16. MAX INIT RETRANSMISSIONS   8
   12. RTO.MAX (millisec)       2000      17. HEARTBEAT INTERVAL         1
   13. VALID COOKIE LIFE        60        18. T1 INIT TIMER (millisec)   3000
   14. ASSOCIATION MAX RETRAN   10        19. T1 COOKIE TIMER            4
                                          20. ASSO_MODE                CLIENT
```


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3.59 M3UA Network Appearance Configuration

3.59.1 Overview

The use of Network Appearance (NA) is a M3UA local reference shared by SG and AS (typically an integer) that, together with a Signaling Point Code, uniquely identifies an SS7 node by indicating the specific SS7 network to which it belongs. It can be used to distinguish between signaling traffic associated with different networks that are sent between the SG and the ASP over a common SCTP association. An example scenario is where an SG appears as an element in separate national SS7 networks and the same Signaling Point Code value may be reused in different networks. The use of Network Appearance in M3UA messaging is optional. The platform must choose to be configured as either:

1. NO Network Appearance M3UA Configuration – All **NETWORK APPEARANCE** field in form 12.6 and 12.7 must be **NONE**. This is the DEFAULT configuration.

   OR

2. Network Appearance M3UA Configuration – The **NETWORK APPEARANCE** field in form 12.6 and 12.7 must be a valid value in the range of [0, 4294967294].

Reinitialize of **STSCH** is needed if the configuration is switched back and force between the above configuration 1 and 2.

3.59.2 Setup for all Network Appearance

The following procedure details the correct RCV form provisioning sequence:

1. Provision 12.1 *SCTP HOST CONFIGURATION FORM* entries

   a) INSERT entries that will be used for the side ASP's with LOCAL HOST=Y.

   b) INSERT entries that will be used for the SG side SGP's with LOCAL HOST=N.

2. Provision 12.3 *M3UA APPLICATION SERVER PROCESS (ASP) FORM* entries

   a) INSERT an entry for each ASP

3. Provision 12.4 *M3UA SIGNALING GATEWAY PROCESS (SGP) FORM*

   a) INSERT an entry for each SGP

4. Provision 12.2 *SCTP ASSOCIATION FORM* entries

   a) INSERT an entry for each association.

5. Provision 12.6 *M3UA APPLICATION SERVER (AS) FORM*

   a) INSERT the entry for the Application Server with a single Network Appearance.

   b) Each SGP and ASP defined for the AS should already be associated on the RCV 12.2 *SCTP ASSOCIATION FORM*.

6. Provision 12.5 *M3UA SIGNALING GATEWAY (SG) FORM*.

   a. INSERT an entry for each Signaling Gateway

7. Provision 12.7 *M3UA POINT CODE FORM*

   a) INSERT an entry for each Point Code(PC)

   i. Specify the NETWORK APPEARANCE value for this PC

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ii. Notice that the PC Status CEP's display the status of this PC per NA value provisioned

a. ANSI configuration: **< op:rs=a-b-c,m3ua**

b. China configuration: **< op:chnrs=a-b-c,m3ua**

c. ITU configuration: **< op:iturs=a,m3ua**

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3.60 Setting SIGTRAN environment

3.60.1 Purpose

This section describes the procedure to set up SIGTRAN environment before the SIGTRAN configuration.

Perform the following steps for setting the SIGTRAN environment:

3.60.2 1. Setup SIGTRAN license keys

See 3.62 “Setting SIGTRAN license file” (p. 223) in the chapter *Administering SIGTRAN Protocols* for more details on setting up the SIGTRAN license keys.

3.60.3 2. Install the appropriate drivers

The purpose of this procedure is to setup the correct TS0 option to install the appropriate drivers (that is, SCTP and M2PA) using "RstS7Drivers" utility.

2.1. Choose the correct ts0

User needs to choose correct ts0 options based on needs to install the appropriate SIGTRAN drivers. If user is changing the ts0 option, then first the user needs to change ts0 to 0, run **`RstS7Drivers`** to remove all the drivers. Then change ts0 to your target ts0 option, repeat **`RstS7Drivers`** to make the proper driver installation.

There has been the change on the arrangement of ts0 options with the new development.

In R29 and later releases, the SIGTRAN related ts0 options are 89,90,91,92, 95, and 96. In Linux, only 89,90 are supported.

- ts0=89: boardless sctp only
- ts0=90: boardless sctp + m2pa
- ts0=91: ITU: sctp + E1
- ts0=92: ANSI: sctp + T1
- ts0=95: ITU: sctp + m2pa + E1
- ts0=96: ANSI: sctp + m2pa + T1

Command to change ts0 option

The **`ChangeConfigDb`** command can be used to change the ts0 option

Example:

To check the value of ts0:

```
n440sa41:/-# DisplayConfigDb|grep ts0

ts0             0     Telecom Server 0 uses option 0
```

To change ts0 option:

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```
n440sa41:/-# ChangeConfigDb ts0=89
```

2.2. RstS7Drivers

2.2.1. Before "RstS7Drivers"

After setup correct TS0 option, if "SCTPSCH[0-3]" or "S7TSSCH[0-3]" process is running, need to bring them down with below CEP command or STOP the MCAS platform. In live machine, you may prefer the CEP instead of stopping the MCAS platform to minimize downtime or run Astop on the system. In the live machine, you may prefer the CEP instead of "Astop" to minimize impact.

Example:

```
Subshl>inh:restart,proc=SCTPSCH,ucl
Subshl>init:proc=SCTPSCH,level=1,ucl
Subshl>inh:restart,proc=S7TSSCH,ucl
Subshl>init:proc=S7TSSCH,level=1
```

or run

```
n440sa41:/-# /etc/Astop
```

If you prefer to STOP the MCAS platform, then go to the OSP to shutdown the MCAS platform by running the following commands:

1. **su - linus**
2. **sepman -d stop**
3. **sepman -t masinit-$HOSTNAME**

   where $HOSTNAME is the hostname of the OSP server.

   Wait for the sepman -t to finishing stopping platform INIT After sepman -t is done, ensure MCAS is not running anymore.
4. **exit** (exit as linus and back to root user)
5. **/sn/init/init.sh stop**
6. **ps -afe**

   There should be no Platform processing running like MSGH, MHRORIC, DBMON, DBNI, CSOP and so on.

2.2.2. Start "RstS7Drivers"

```
n440sa41:/-#RstS7Drivers
```

2.2.3 After "RstS7Drivers"

After "RstS7Drivers" complete successfully and if it is a Linux system, then the STSCH[0-3] and SCTPSCH[0-3] process has to be bought up as:

a) Enable SCTPSCH[0-3] and STSCH[3] from */sn/init/initlist* file.

Example:

```
#ChangeInitlist enable STSCH
#ChangeInitlist enable SCTPSCH
```


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b) subshl> set:runlvl=100;

You need to recover the processes if you used a CEP to bring them down before "RstS7Drivers".

Subshl>set:runlvl=100; (You may have other unwanted processes brought up, then you have to bring them down).

Or you can recover the system with the following command if */etc/Astop* was issued:

```
n440sa41:/-# /etc/Astart
```

Drivers list

The following are the list of drivers the user may observe after running the above commands.

```
at002s01c09h0:/sn/log-# lsmod|grep streams

streams_sctp         1296888  0
streams_strmip         78768  0
ipv6                  410017  84 streams_strmip
streams_a_m2pa        123584  0
streams              1170012  9
streams_sctp,streams_strmip,streams_a_m2pa
```

Or you can recover the system with the following command if the OSP was asked to STOP the MCAS software:

Go to OSP to start up the MCAS again after the shutdown and run the following commands:

1. **su - linus**
2. **sepman -d start**
3. **exit**

At this point, wait for the platform to start up by monitoring the OMlogs.

3.60.4 3. Setup the appropriate IP address and IP route for SIGTRAN traffic

Static route setup

Configure static route via the */etc/sysconfig/network-scripts/route-e** file.

Sample static route setup:

Example:

If "10.1.1.0/24" is far end, "10.241.1.94" is the gateway IP and "eth0.31" is the local IP interface

```
/etc/sysconfig/network-scripts/route-eth0.31:
10.1.1.0/24 via 10.241.1.94 dev eth0.31
```

If multi-homing is used, the provisioning of static route for eth1.32 interface is required. Eth0.31 interface will be used as the primary path and eth1.32 interface is used as the secondary path.

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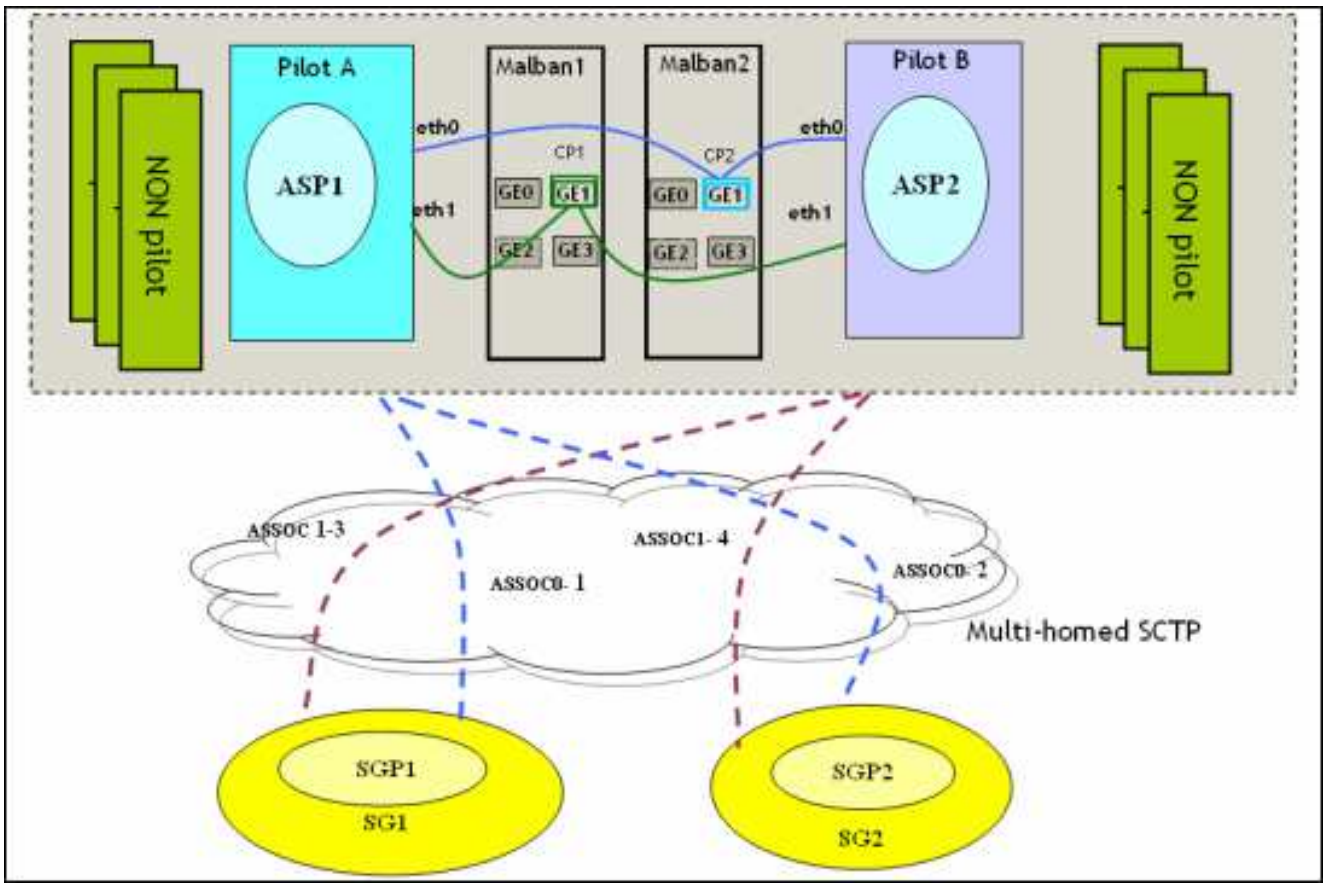
3.60.5 SIGTRAN M3UA network setup

For platform, the SIGTRAN network configuration in the Figure 3-14, “SIGTRAN M3UA network setup” (p. 214) is tested and verified.

Figure 3-14 SIGTRAN M3UA network setup



3.60.6 SIGTRAN M2PA network setup

For platform, the SIGTRAN network configuration in the Figure 3-15, “SIGTRAN M2PA network setup” (p. 216) is tested and verified.

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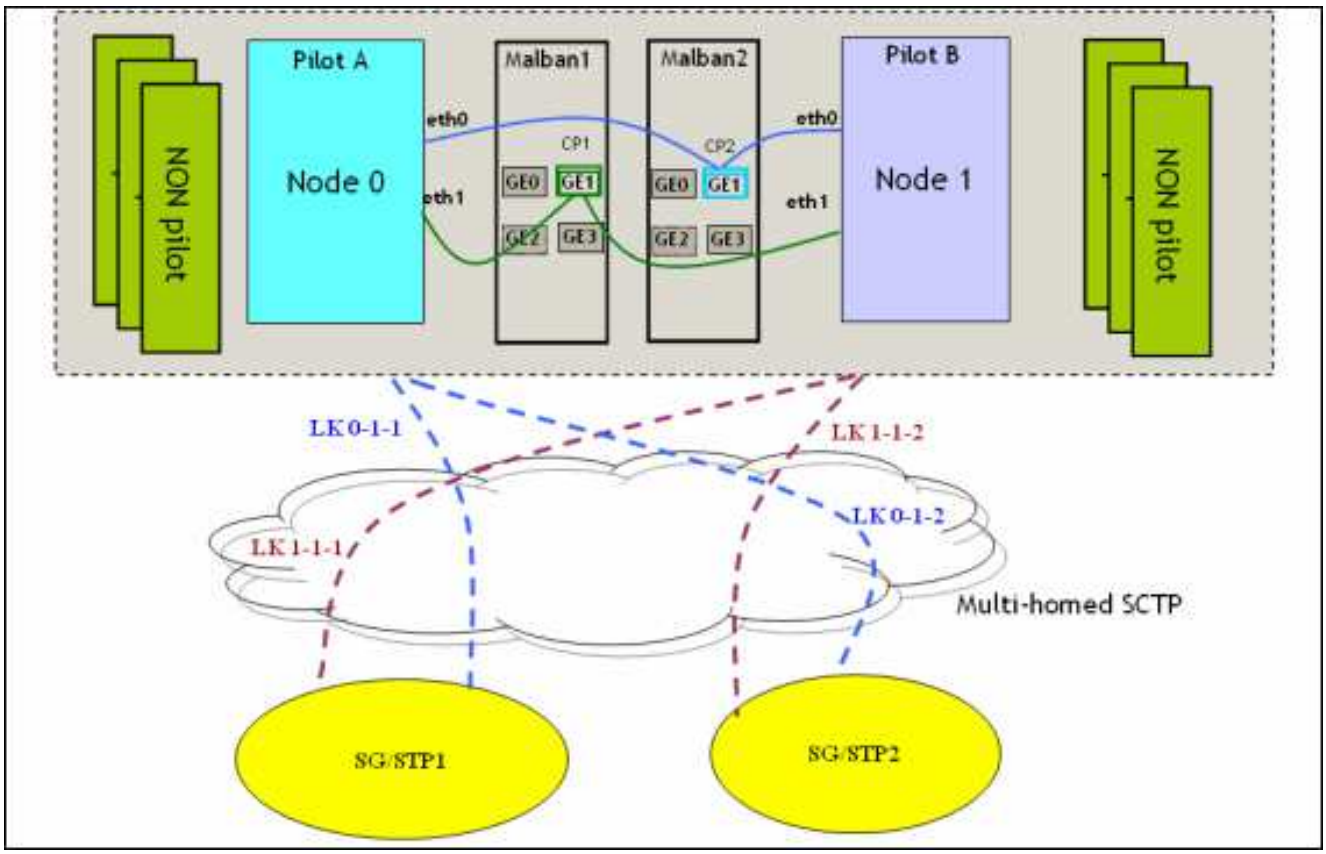
Figure 3-15 SIGTRAN M2PA network setup



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3.61 Configuring multiple SIGTRAN processes

3.61.1 Purpose

This section describes how to configure multiple SIGTRAN processes in Linux platform.

3.61.2 Overview of multiple SS7/SIGTRAN processes

Multiple processes are supported for SS7/SIGTRAN processing to use multiple threads. The main processes used by SS7 are the S7SCH, the STSCH, and the SCTPSCH.

The S7SCH is used for all SS7 MTP3 and SCCP processing. The STSCH and SCTPSCH are used for SIGTRAN processing(M2PA and M3UA).

Note: The SCTPSCH is also used by the DIAMSCH and MUX2SCH; however, Diameter/SCTP traffic is NOT supported on a platform that uses multiple SCHs.

You can deploy the platform in two different SS7 configurations:

- Single-System SS7 configuration
- Multi-System SS7 configuration

3.61.3 Multiple processes support in Single-System SS7

Platform can support multiple SS7/SIGTRAN processes within one system. This functionality basically reuses existing SS7/SIGTRAN cluster architecture with the difference that a number of virtual SS7/SIGTRAN cluster nodes (up to 4) are running within one blade. And in each SS7/SIGTRAN virtual cluster node, the set of the processes with the same process ID (for example: S7SCH0, STSCH0, SCTPSCH0) serves for one independent virtual cluster node. The same processes with different process ID (for example: STSCH0, STSCH1, STSCH2) are independent from each other.

The user needs to know the physical node ID and virtual SS7/SIGTRAN cluster node id (virtual node ID) to do the configuration. Most of the other functionalities are transparent to the user between SS7/SIGTRAN cluster architecture and SS7/SIGTRAN multiple processes architecture.

Following are high-level figures showing the SIGTRAN multiple processes architecture.

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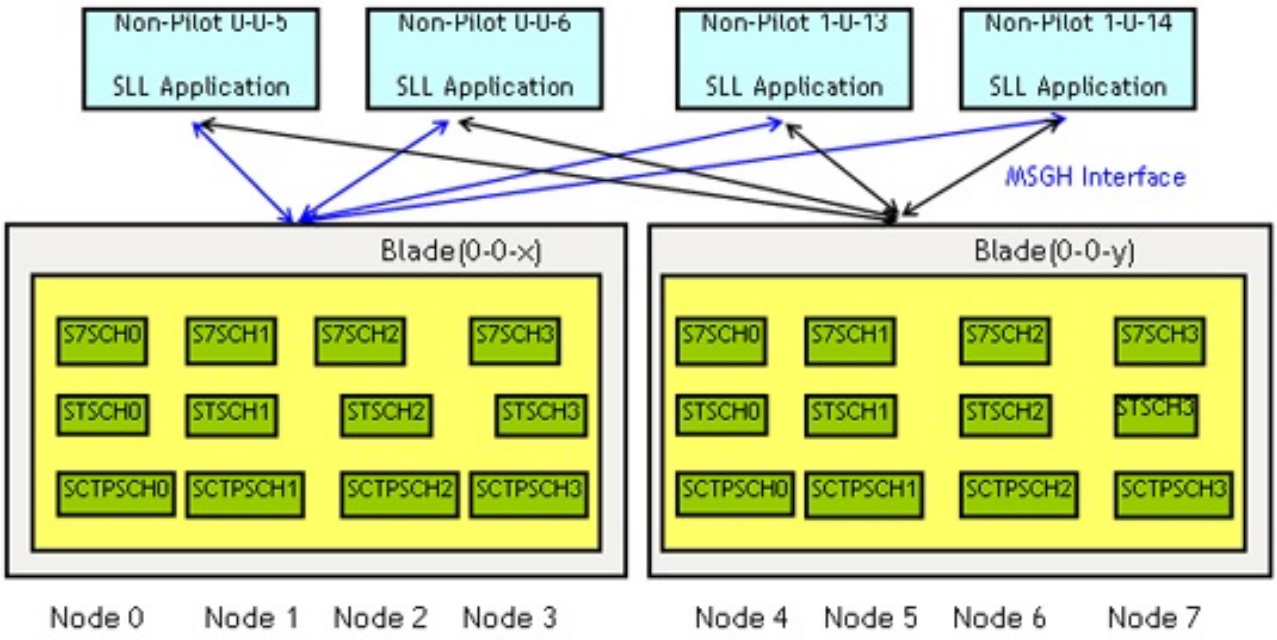
Figure 3-16 Multiple processes in single-system SS7 configuration



If as shown above, SIGTRAN is used, a maximum of 16 M3UA/SCTP associations per SCH set is supported for a total of 128 associations. They would be numbered as follows:

Associations 0-1 through 0-16 for SCH0 set in blade 0-0-x

Associations 1-1 through 1-16 for SCH1 set in blade 0-0-x

Associations 2-1 through 2-16 for SCH2 set in blade 0-0-x

Associations 3-1 through 3-16 for SCH3 set in blade 0-0-x

Associations 4-1 through 4-16 for SCH0 set in blade 0-0-y

Associations 5-1 through 5-16 for SCH1 set in blade 0-0-y

Associations 6-1 through 6-16 for SCH2 set in blade 0-0-y

Associations 7-1 through 7-16 for SCH3 set in blade 0-0-y

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If SS7 processes and SS7 M2PA links are used, they would also need to be numbered by SCH process. For example, assuming equipped with 64-M2PA links, they could be numbered as follows (or as specified in engineering guidelines):

Links 0-1-1 through 0-1-8 (where only the link number varies as the SCH and virtual board remain the same) for SCH0 set in blade 0-0-x

Links 1-1-1 through 1-1-8 for SCH1 set in blade 0-0-x

Links 2-1-1 through 2-1-8 for SCH2 set in blade 0-0-x

Links 3-1-1 through 3-1-8 for SCH3 set in blade 0-0-x

Links 4-1-1 through 4-1-8 for SCH0 set in blade 0-0-y

Links 5-1-1 through 5-1-8 for SCH1 set in blade 0-0-y

Links 6-1-1 through 6-1-8 for SCH2 set in blade 0-0-y

Links 7-1-1 through 7-1-8 for SCH3 set in blade 0-0-y

Note: In the case of M2PA link, the board number is not significant since it uses platform Ethernet resources as the virtual board.

In this configuration, the **dist_ss7** in param_scp (form 2.6) should be set to **M**. The **LAN ID** field in **s7_lan** (form 3.6.2) should set to **non-zero** for those equipped logical SS7 node stacks. The SS7 NODE ID for **NODE 0** and **NODE 1** field in s7_nodeid2uname (form 3.6.3) should enter the blade name such as **`uname -n`** where SS7 stacks are running.

Up to 4 virtual cluster node id is supported (0-3) and 0-3 is the suffix of the multiple processes which differentiate the virtual cluster node each individual process serves, that is, SCTPSCH1 and STSCH1 and S7SCH1 are the server of virtual cluster node 1 and in the configuration form 12.2, the node id should be 1 which represents the SIGTRAN virtual cluster node 1.

3.61.4 Multiple processes support in cluster configuration

In the Distributed SS7 point code cluster which is composed with more than one physical system. The **dist_ss7** in param_scp (form 2.6) should be set to **M**. The **LAN ID** field in s7_lan (form 3.6.2) should set to **non-zero** for those equipped logical SS7 node stacks across multiple system. From SS7 NODE ID **NODE 0** to **NODE 31** field in s7_nodeid2uname (form 3.6.3) should enter the blade name, such as **`uname -n`** where SS7 stacks are running across multiple system.

Note: If the **dist_ss7** in **param_scp** (form 2.6) set to **C** for Multi-System configuration, each blade name which defined in s7_nodeid2uname (form 3.6.3) only supports one-SS7 stack (SCTPSCH, STSCH, and S7SCH).

Based on the physical node id, the virtual cluster node id supported within each blade should be between “4*ss7_node_id” and “4*ss7_node_id + 3”. The following are the virtual cluster node id each blade that are supported. We can support up to 8 physical blades across single-system or multi-system and up to 32 virtual cluster nodes in one cluster.

If the blade which assigns the ss7_node_id is 0, the virtual cluster node id supported within the physical node is 0, 1, 2, 3;

If the blade which assigns the ss7_node_id is 1, the virtual cluster node id supported within the physical node is 4, 5, 6, 7;

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If the blade which assigns the ss7_node_id is 2, the virtual cluster node id supported within the physical node is 8, 9, 10, 11;

If the blade which assigns the ss7_node_id is 3, the virtual cluster node id supported within the physical node is 12, 13, 14, 15;

If the blade which assigns the ss7_node_id is 4, the virtual cluster node id supported within the physical node is 16, 17, 18, 19;

If the blade which assigns the ss7_node_id is 5, the virtual cluster node id supported within the physical node is 20, 21, 22, 23;

If the blade which assigns the ss7_node_id is 6, the virtual cluster node id supported within the physical node is 24, 25, 26, 27;

If the blade which assigns the ss7_node_id is 7, the virtual cluster node id supported within the physical node is 28, 29, 30, 31;

Within each physical node, user can choose to run 1 to 4 processes. Again the process set composed with the same suffixed processes serves one virtual cluster node, that is, SCTPSCH1 and STSCH1 and S7SCH1 in node1 all serve virtual cluster node 5 and in the configuration form 12.2, the node id should be 5 which represents the SIGTRAN cluster node 5. Same applies to other SS7 forms that contain the node id.

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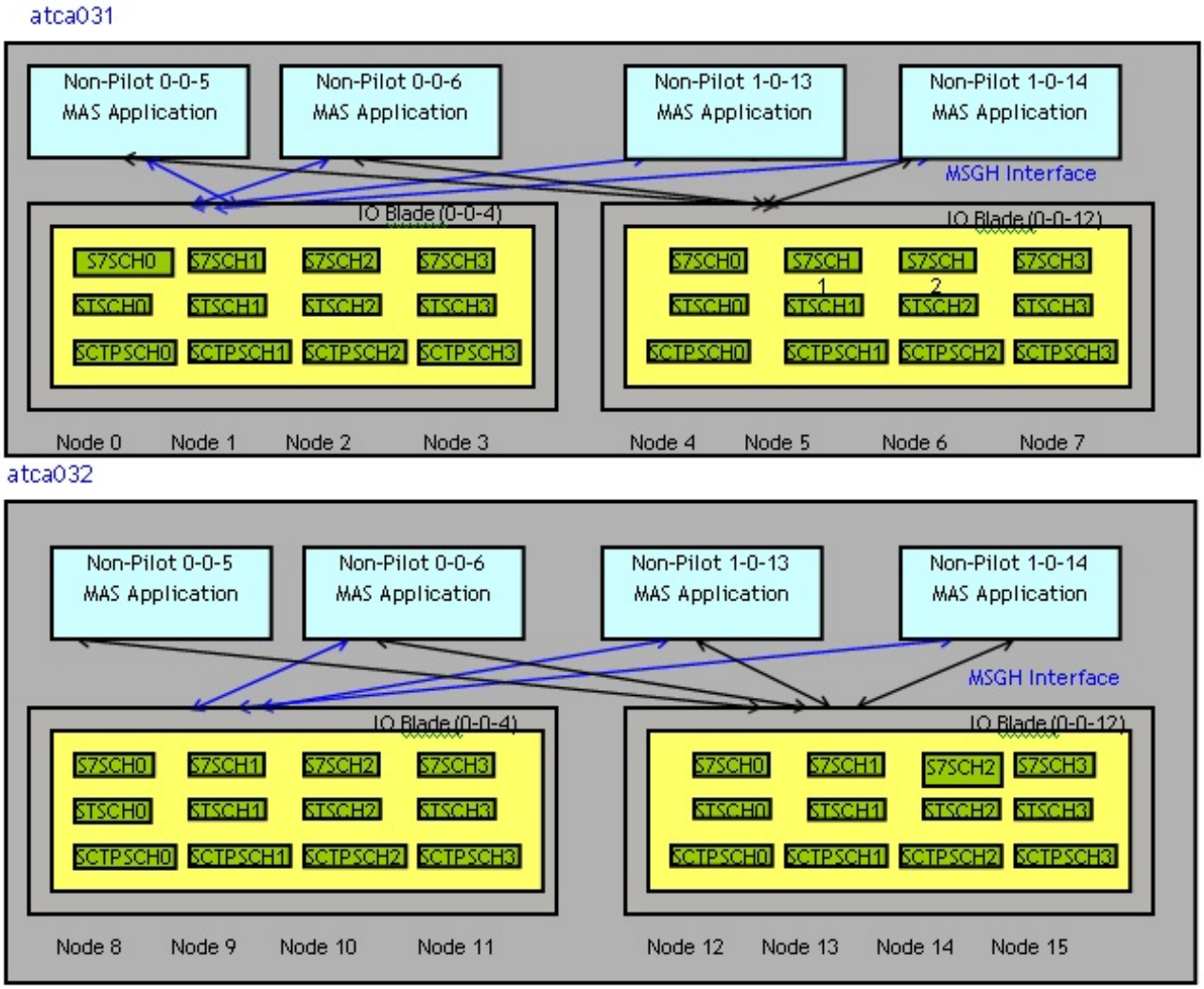
Figure 3-17 Multiple processes in Multi-System SS7 configuration



Note: atca031-0-04 is SS7 node Id 0
atca031-0-0-12 is SS7 node Id 1
atca031-0-0-4 is SS7 node Id 2
and
atca032-0-0-12 is SS7 node Id 3

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3.61.5 Multi-process SIGTRAN configuration procedure highlight

1

Update the site info date parameter SI_SS7_PARAM_SCP_DIST_SS7=M and SI_SS7_ NUMBER_OF PROCS=4 during the New Install of the system

2

Form 2.6 (*SS7 OFFICE PARAMETERS FORM*): Set field **DISTRIBUTED SS7** to **M**

3

Form 3.6.2 (*NODE TO LAN ASSIGNMENT FORM*): Need to set the **LAN ID** for all configured virtual SS7/SIGTRAN nodes (0-31).

4

Form 3.6.3 (**SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM**):

Need to add the **`uname -n`** for all the blade which have SS7 stacks running in this SS7 point code.

5

Form 2.4 (**MEASUREMENT INTERVAL**):

- Disable the existing measurement for the disabled processes (S7SCH, STSCH)
- Enable the measurement for new processes (S7SCH0-S7SCH3, STSCH0-STSCH3)

6

Other form configuration rules are the same as in the clustered configuration.

END OF STEPS

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3.62 Setting SIGTRAN license file

3.62.1 Overview

The platform is a clustered architecture of blades/servers where SIGTRAN is running on two of the blades/servers in the cluster.

A valid SIGTRAN license file should be available on each of the blade that runs SIGTRAN. You can use “HELPME SIGTRAN” to validate the license file after setting up the license key file. Be aware that the validation will fail if the license file is not in Unix format and you may use **dos2unix** command to filter the license file.

3.62.2 Setup SIGTRAN license files

Two scenarios to setup the SIGTRAN license files are present. Note, inside each license file there can be up to three-license keys included for redundancy purpose.

1

During NewInstall

If the license keys are accessible before the machine is *NewInstalled*, the license keys can be put in the USB key location along with other *NewInstall* files. These license key file names have to be pre-defined. The “NODE_NAME” needs to be replaced with the specific blade’s hostname that runs SIGTRAN and has the MAC specified in the license key file. Following is an example of the license key file name. The NODE_NAME suffix is “uname –n” output of the SIGTRAN blade.

```
atca100-0-0-1:/cs/sn/stsch-> ls sctp_macs*
sctp_macs.atca100-0-0-12  sctp_macs.atca100-0-0-4
atca100-0-0-4:/root-# uname -n
atca100-0-0-4
```

The NewInstall tools identifies the SIGTRAN license files by name and deliver them in the */cs/sn/stsch* directory. The license files is downloaded into the SIGTRAN blades when the blade is *NewInstalled*. The SIGTRAN process then copies the license file to the official location */usr/net/Adax/sctp/sctp_macs* which is used by ADAX drivers.

2

After NewInstall

a) Identify the SIGTRAN blades

If the system has finished *NewInstall*, the blade running SIGTRAN can be obtained by the following command (example follows):

```
atca100-0-0-1:/cs/sn/stsch->
/cs/sn/utest/stsch/get_ss7_node

0-0-12
0-0-4
```

b) Deliver the license key files to the active pilot blade

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In the above example, blade 0-0-4 and blade 0-0-12 are running SIGTRAN. The user can obtain the license keys for these two blades and deliver the two license key files under */cs/sn/stsch/* directory on the active pilot blade (example follows):

```
atca100-0-0-1:/cs/sn/stsch-> ls sctp_macs*
sctp_macs.atca100-0-0-12  sctp_macs.atca100-0-0-4
```

c) Sync up the license files to the SIGTRAN blades and standby pilot blade.

```
/opt/config/bin/PlatformSync /cs/sn/stsch 0-0-4 0-0-12 0-0-9
```

The SIGTRAN process copies the license file to the official location as */usr/net/Adax/sctp/sctp_macs* which is used by ADAX drivers.

End of steps

3.62.3 Updating license files

In any situation, if the license files need to be updated, follow this procedure:

1

Update the license files located in the */cs/sn/stsch/* directory on the active pilot. For example:

```
atca100-0-0-1:/cs/sn/stsch-> ls sctp_macs*
sctp_macs.atca100-0-0-12  sctp_macs.atca100-0-0-4
```

2

Sync up the license files to the SIGTRAN blades and standby pilot blade.

```
/opt/config/bin/PlatformSync /cs/sn/stsch 0-0-4 0-0-12 0-0-9
```

3

Remove the old license files from the official location

```
atca100-0-0-1:/cs/sn/stsch-# ssh 0-0-4 "rm /usr/net/Adax/sctp/sctp_
macs"
atca100-0-0-1:/cs/sn/stsch-# ssh 0-0-12 "rm /usr/net/Adax/sctp/sctp_
macs"
```

4

After 2 minutes, check if the updated license files have been copied by SIGTRAN process automatically to the official location

```
atca100-0-0-1:/cs/sn/stsch-# ssh 0-0-4 "cat /usr/net/Adax/sctp/sctp_
macs"
```

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```
atca100-0-0-1:/cs/sn/stsch-# ssh 0-0-12 "cat /usr/net/Adax/sctp/sctp_
macs"
```

END OF STEPS

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3.63 Managing SCTP license keys and license request

3.63.1 Overview

This section describes the procedure to manage SCTP license keys.

Important! The customer program or project manager is your single point of contact for the SIGTRAN license request. The project manager will co-ordinate with field engineers or customer support to collect the mandatory data from the site or from project inventory. The license request should include mandatory information as in request template.

Request template for new license

For any new license key request	How to collect
sales order #	program or project manager to obtain from project inventory
part #	program and project manager to obtain from project inventory
Quantity	Number of license needed
Mac address of target host location	Refer to step 3.63.5 “4. Collect target MAC” (p. 227)

Request template for license update or replacement

For any license update/replacement request	How to collect
Original sales order #	program or project manager to obtain information from project inventory
part #	program and project manager to obtain from project inventory
Quantity	Number of license needed
Mac address of prior host location	Refer to step 3.63.6 “5. Collect previous MAC address for license update and replacement” (p. 227)
Mac address of new host/target location	Refer to step 3.63.5 “4. Collect target MAC” (p. 227)

3.63.2 1. Sales order

Obtain from the project inventory.

3.63.3 2. part number

The part number is also called **product family**. The part number depends on the SIGTRAN type (M3UA, M2PA, or SCTP only). The customer project should obtain part number from project inventory.

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3.63.4 3. Quantity

The project manager should consult system engineer to determine the number of licenses needed for the new or replacement.

3.63.5 4. Collect target MAC

All systems running with SIGTRAN requires a valid SCTP license key. The target license key file is */usr/net/Adax/sctp/sctp_macs*

MAC address is mandatory information for license request.

For target MAC: execute **`/cs/sn/utest/stsch/scheck -m`** to obtain the list of the MAC addresses.

Figure 3-18 An example

The list of MAC addresses is not necessarily associated with SIGTRAN Ethernet port. The addresses (up to 3) chosen are the first two and the last MAC addresses shown in the

ifconfig –a output. As long as one of the three keys is valid, the SCTP functions normally. The multiple keys are for redundancy purpose in case few of the MACs are replaced.

```
t5440da02:/usr/net/Adax/sctp-# /cs/sn/utest/stsch/scheck -m
Adax License Key Check Tool

=========================================================
Getting a list of MAC addresses for SCTP license request
=========================================================
Detected OS: SunOS
Valid macs which can be used for licensing:
0:21:28:26:7e:3c
0:21:28:39:b7:68
0:21:28:39:b7:68
In addition to these MAC addresses you will need the correct
part number (product code). Contact Adax Sales for part number
and provide the above output exactly as it appears when
requesting licenses.
```

3.63.6 5. Collect previous MAC address for license update and replacement

In case the blade is already replaced and/or is no more available, to retrieve the MAC address that was previously used, you can look in */cs/sn/stsch* directory on pilot, there is a file per board with the MAC address which was saved during the last license installation.

The files name convention is as follows:

sctp_mcas.host name

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Figure 3-19 An example

```
XSY-SDM-FE5-0-0-1:/root-# cd /cs/sn/stsch
XSY-SDM-FE5-0-0-1:/cs/sn/stsch-# ls -l
total 8316
-rwxr-xr-x 1 root  root      116 Dec  5 14:38 sctp_macs.XSY-SDM-FE5-0-0-13
-rwxr-xr-x 1 root  root      116 Dec  5 14:38 sctp_macs.XSY-SDM-FE5-0-0-14
-rwxr-xr-x 1 root  root      116 Dec  5 14:37 sctp_macs.XSY-SDM-FE5-0-0-5
-rwxr-xr-x 1 root  root      116 Dec  5 14:37 sctp_macs.XSY-SDM-FE5-0-0-6
-rwxr-xr-x 1 ainet ainet 8495242 Mar 12  2014 stsch
XSY-SDM-FE5-0-0-1:/cs/sn/stsch-#
XSY-SDM-FE5-0-0-1:/cs/sn/stsch-#
XSY-SDM-FE5-0-0-1:/cs/sn/stsch-#
XSY-SDM-FE5-0-0-1:/cs/sn/stsch-# vi sctp_macs.XSY-SDM-FE5-0-0-13
XSY-SDM-FE5-0-0-1:/cs/sn/stsch-# cat sctp_macs.XSY-SDM-FE5-0-0-13
00:11:3F:C4:8F:C8 96996 6c5c850023ca71d081fec8f1deb12d19
00:11:3F:C4:8F:C9 96996 9ee67284ed6fb0fdc5c7bad69921f9f3

Where:
00:11:3F:C4:8F:C8 96996 6c5c850023ca71d081fec8f1deb12d19
00:11:3F:C4:8F:C9 96996 9ee67284ed6fb0fdc5c7bad69921f9f3
     ^              ^                  ^
     |              |                  |
    MAC          Family         Keys (Generated by Adax)
  Addresses       Code
```

3.63.7 6. Validate the SCTP License Key

The methods used to validate the SCTP license key are listed as follows:

1. SCTPSCH process validates the SCTP license key file once a day and also validates when the process is restarted. A transient critical alarm is triggered when either a license file is not available or an invalid license file is used.
2. The user can invoke **HELPME SIGTRAN** on demand to validate the license. An error appears when a valid license key does not exist.
3. You can invoke **/cs/sn/utest/stsch/scheck -v** on the target machine to validate the license. The following example shows that no valid license key available even though valid MAC addresses are found in the license file.

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```
t5440da02:/snlog-# /cs/sn/utest/stsch/scheck -v
Adax License Key Check Tool

-Two or more (2) valid MAC addresses were found in /usr/net/Adax/sct p/sctp_macs.


MAJOR WARNING: No valid License keys were found for use on this system.
```

3.63.8 7. Point of contact and request submission email address

The project manager is the point of contact and accoutable party to co-ordinate information collection through the field engineer or customer support. The project manager should submit the license request with mandatory information.

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3.64 Monitoring SIGTRAN Nodes on WebMT

3.64.1 Overview

To display the SIGTRAN nodes on the WebMT, the process SYSTAT must be running on the Active Pilot.

For information on how the SIGTRAN nodes are displayed on the WebMT, see the section *Signaling View*, in the chapter *WebMT* of the *MCAS System Administration guide*. .

Start the SYSTAT process as follows:

3.64.2 On the Active pilot blade

Perform the following steps:

1

Login as root and from the UNIX prompt, execute the following command:

```
ChangeInitlist enable SYSTAT
```

2

In the subshl, execute the following command:

```
SET:RUNLVL=100
```

For information on the Input Message **SET:RUNLVL**, refer to the *MAS/mCAS User Reference Guide, 270-700-176*.

End of steps

3.64.3 On the Standby pilot blade

1

Login as root and from the UNIX prompt, execute the following command:

```
ChangeInitlist enable SYSTAT
```

End of steps

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3.65 Merging SIGTRAN IPv4 to IPv6

3.65.1 Purpose

This procedure is used to merge SIGTRAN Host IP from IPv4 to IPv6.

3.65.2 Procedure for M3UA configuration

M3UA configuration is as follows:

1. Login to active pilot blade as root
2. Update node 0 using psql to change the host address of node 0 associations from ipv4 to ipv6
3. Stop the incoming SS7 traffic on node 0
4. Initialize the STSCH process on node 0
5. Bring up the IPv6 SS7 traffic on node 0
6. Soaking the load
7. Update node 1 using psql to change the host address of node 0 associations from ipv4 to ipv6
8. Stop the incoming SS7 traffic on node 1
9. Initialize the STSCH process on node 1
10. Resuming the SS7 traffic on node 1
11. Update node 1 using psql to change the host address of node 0 associations from ipv4 to ipv6
12. Stop the incoming SS7 traffic on node 1
13. Initialize the STSCH process on node 1
14. Bring up the IPv6 SS7 traffic on node 1
15. Stop the incoming SS7 traffic on node 0
16. Initialize the STSCH process on node 0
17. Bring up the IPv6 SS7 traffic on node 0

Example:

Diagram 1

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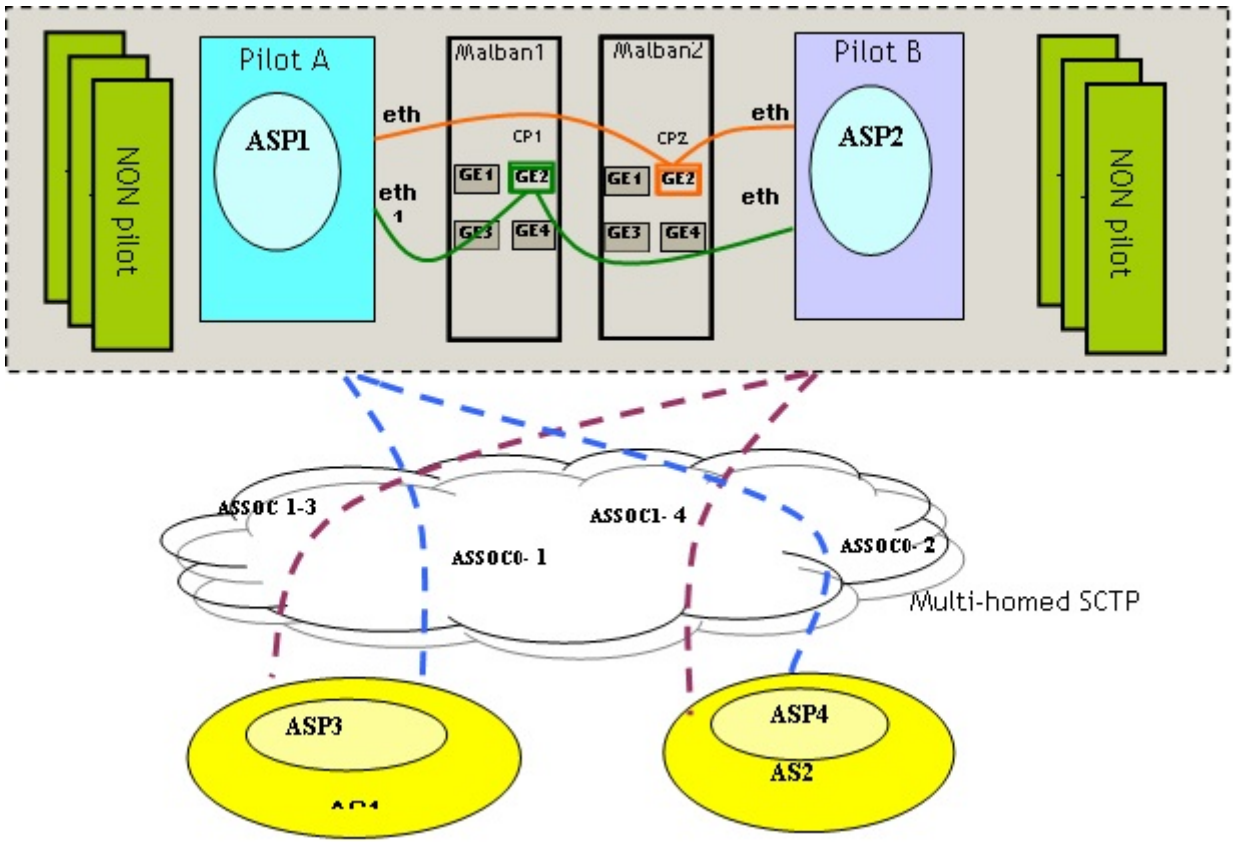


```
IP assignment from Diagram 1 : Pilot A
Eth0 interface 10.241.41.1
Eth1 interface 10.241.41.33

Change to : Pilot A
Eth0 interface abcd:0:0:abcd::abcd:ab:7
Eth1 interface abcd:0:0:abcd::abcd:ab:8


IP assignment from Diagram 1 : Pilot B
Eth0 interface 10.241.41.9
Eth1 interface 10.241.41.41

Change to : Pilot B
Eth0 interface abcd:0:0:abcd::abcd:ab:9
Eth1 interface abcd:0:0:abcd::abcd:ab:10


Check master SS7 node
```

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Change sg_sctphost record from IPv4 to IPv6 on node 0 (pilot A) by using psql tool

```
Atca041-0-0-1:/u/ainet-> psql -U scncraft

Original configuration:

A=> select * from sg_sctphost;
```

sctp_host_idx	local_host	ts_number	ip_addr_1	ip_addr_2
1	Y	0	10.241.41.1	10.241.41.33
2	Y	0	10.241.41.9	10.241.41.41
3	N	0	10.1.1.40	10.101.7.1
4	N	0	10.1.1.41	10.101.7.2

```
New configuration

Delete the entries that are related to node 0, in our example it will be
#1 and
#3 entries.

A=> delete from sg_sctphost where sctp_host_idx = '1';
DELETE 1
A=> delete from sg_sctphost where sctp_host_idx = '3';
DELETE 1
A=> select * from sg_sctphost;
```

sctp_host_idx	local_host	ts_number	ip_addr_1	ip_addr_2
2	Y	0	10.241.41.9	10.241.41.41
4	N	0	10.1.1.41	10.101.7.2

```
A=> INSERT INTO sg_sctphost VALUES ('1', 'Y', '0', 'abcd:0:0:abcd::abcd:
ab:7',
'abcd:0:0:abcd::abcd:ab:8');
INSERT 0 1
A=> INSERT INTO sg_sctphost VALUES ('3', 'N', '0', 'abcd::abcd:0:0:abcd',

'abcd::abcd:0:0:abcd');
INSERT 0 1

A=> select * from sg_sctphost;
```


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sctp_host_ idx	local_host	ts_number	ip_addr_1	ip_addr_2
2	Y	0	10.241.41.9	10.241.41.41
4	N	0	10.1.1.41	10.101.7.2
1	Y	0	abcd:0:0:abcd ::abcd:ab:7	abcd:0:0:abcd ::abcd:ab:8
3	N	0	abcd::abcd:0:0 :abcd:abcd	abcd::abcd:0:0 :abcd:abcd

Bring down node 0 SS7 traffic

Initialize the node 0 STSCH process to take the new data

```
init:proc=STSCH,level=1,machine=0-0-1,ucl;
```

Bring up node 0 SS7 SGP traffic based on IPv6 address

Soaking the SS7 traffic with the new configuration.

Bring down master node 1 SS7 traffic

Initialize the master node 1 (Plat B) STSCH process to sync the database

```
init:proc=STSCH,level=1,machine=0-0-9,ucl;
```

Bring up node 1 SS7 traffic

Change sg_sctphost record from IPv4 to IPv6 on node 1 (pilot B) by using psql tool

```
A=> delete from sg_sctphost where sctp_host_idx = '2';
DELETE 1
A=> delete from sg_sctphost where sctp_host_idx = '4';
DELETE 1

A=> select * from sg_sctphost;
```

sctp_host_ idx	local_host	ts_number	ip_addr_1	ip_addr_2
1	Y	0	abcd:0:0:abcd ::abcd:ab:7	abcd:0:0:abcd ::abcd:ab:8
3	N	0	abcd::abcd:0:0 :abcd:abcd	abcd::abcd:0:0 :abcd:abcd

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```
A=> INSERT INTO sg_sctphost VALUES ('2', 'Y', '0', 'abcd:0:
0:abcd::abcd:ab:9', 'abcd:0:0:abcd::abcd:ab:10');
INSERT 0 1
A=> INSERT INTO sg_sctphost VALUES ('4', 'N', '0', 'abcd::abcd:0:
0:abcd:abcd', 'abcd::abcd:0:0:abcd:abcd');
INSERT 0 1

A=> select * from sg_sctphost;
```

sctp_host_idx	local_host	ts_number	ip_addr_1	ip_addr_2
1	Y	0	abcd:0:0:abc ::abcd:ab:7	abcd:0:0:abcd ::abcd:ab:8
3	N	0	abcd::abcd:0:0 :abcd:abcd	abcd::abcd:0:0 :abcd:abcd
2	Y	0	abcd:0:0:abcd ::abcd:ab:9	abcd:0:0:abcd ::abcd:ab:10
4	N	0	abcd::abcd:0:0 :abcd:abcd	abcd::abcd:0:0 :abcd:abcd

Bring down node 1 SS7 traffic

Initialize the node 1 STSCH process to take the IPv6 data

```
init:proc=STSCH,level=1,machine=0-0-9,ucl;
```

Bring up node 1 SS7 traffic

Bring down node 0 SS7 traffic

Initialize the node 0 STSCH process to sync the IPv6 data

```
init:proc=STSCH,level=1,machine=0-0-1,ucl;
```

Bring up node 0 SS7 traffic

3.65.3 Procedure for M2PA configuration

M2PA configuration is as follows:

1. Add new IPv6 hosts on 12.1 form
2. Add new M2PA configurations based on the new IPv6 hosts.
3. Bring up all the traffic on the new M2PA links
4. Bring down the traffic on the IPv4 M2PA links
5. Remove the IPv4 M2PA entries

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3.66 Growing SS7 on non-pilot blades

3.66.1 Purpose

This procedure can be used to grow SS7 on non-pilot blades. This procedure is used when no MCAS IDs are assigned to any blade in the system.

3.66.2 Prerequisite

- The SS7 is already defined on the pilot blades.
- The IP configuration is done prior to procedure. For more information, refer to the *Ethernet Port* section in the *Platform IP Network and Ethernet Ports* chapter for growing IP and route.
- The SIGTRAN license for the non-pilot blades are acquired and applied according to the 3.62 “Setting SIGTRAN license file” (p. 223).

3.66.3 Steps

The following procedure is performed to grow SS7 on non-pilot blades:

1

Update TS0 option for the target non-pilot blades on active pilot blade

Example:

```
#ChangeConfigDb TS0-0-4 ts0=90
#ChangeConfigDb TS0-0-12 ts0=90
```

Note: This only changes the TS0 configuration saved on active pilot blades used when restoring non-pilot blades. It does not incur any change on the non-pilot blade.

2

On each target non-pilot blade, update TS0 option and RstS7Drivers. Alternatively, this step can be done by rebooting the blade

Example:

```
atca060-0-0-4:/root# ChangeConfigDb ts0=90;RstS7Drivers
atca060-0-0-12:/root# ChangeConfigDb ts0=90;RstS7Drivers
```

3

On each target non-pilot blade, update initlist

3a) Add SPMAN in the initlist by running the **ConfigurePlatform** command. This generates a new file "initlist.app_SPMAN" in */sn/init* directory.

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```
#ConfigurePlatform initlist SPMAN run_lvl=79 path=/sn/sa/spm
user_id=60 2 q_size=500000 msg_limit=500

atca060-0-0-4:/sn/init#cat initlist.app_SPMAN

--SPMAN
msgh_name=SPMAN run_lvl=79 path=/sn/sa/spm user_id=602 q_size=500000
msg_limit=500
```

3b) Run **ChangeInitlist** command for SS7 processes and MUX process to generate the initlist modification files. You may enable the number of SS7 stacks based on your need.

#ChangeInitlist enable MUXSCH

For single SS7 stack:

#ChangeInitlist enable S7SCH

#ChangeInitlist enable STSCH

#ChangeInitlist enable SCTPSCH

For multiple SS7 stack:

#ChangeInitlist enable S7SCH0

#ChangeInitlist enable S7SCH1

#ChangeInitlist enable S7SCH2

#ChangeInitlist enable S7SCH3

#ChangeInitlist enable STSCH0

#ChangeInitlist enable STSCH1

#ChangeInitlist enable STSCH2

#ChangeInitlist enable STSCH3

#ChangeInitlist enable SCTPSCH0

#ChangeInitlist enable SCTPSCH1

#ChangeInitlist enable SCTPSCH2

#ChangeInitlist enable SCTPSCH3

Alternatively, the **/cs/sn/utest/stsch/enable_s7** tool can be used.

For single SS7 stack:

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#/cs/sn/utest/stsch/enable_s7 0

For multiple SS7 stack:

(4 can be any number between 1 to 4)

#/cs/sn/utest/stsch/enable_s7 4

For example, the following intlist modification files are created if four SS7 stacks are enabled, .

```
atca061-0-0-4:/sn/init-# ls -lrt *SCH*
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_STSCH0
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_S7SCH0
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_STSCH1
-rw-r----- 1 root root 25 Nov 17 10:58 initlist.MODapp_SCTPSCH0
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_S7SCH1
-rw-r----- 1 root root 25 Nov 17 10:58 initlist.MODapp_SCTPSCH1
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_S7SCH2
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_STSCH2
-rw-r----- 1 root root 25 Nov 17 10:58 initlist.MODapp_SCTPSCH2
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_STSCH3
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_S7SCH3
-rw-r----- 1 root root 25 Nov 17 10:58 initlist.MODapp_SCTPSCH3
-rw-r----- 1 root root 23 Nov 17 10:58 initlist.MODapp_MUXSCH

atca061-0-0-4:/sn/init-# cat initlist.MODapp_STSCH0
enable_process STSCH0
```

4

Initialize MUXSCH, SPMAN, and SS7 processes

Run the following command to initialize MUXSCH, SPMAN, and SS7 processes:

< set:runlvl=100,machine=blade_name; PF

Example:

To initialize the target processes on blade 0-0-4, run the following commands:

```
< set:runlvl=100,machine=0-0-4; PF
    +++ ATCA060 2011-11-15 14:27:23 MAINT /IN033 #000842 0-0-1 >
M  SET RUNLVL=100 MACHINE=0-0-4 COMPLETED FOR NEW SYSTEM RUN LEVEL
100, 14
PROCS STARTED
```

5

Run the standard configuration procedures

Refer to the *Administering SIGTRAN Protocols* and *Administering SS7* chapters.

Example: Configuring a M2PA link on blade 0-0-10

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5a) Configure IP and network route for MUX and SCTP associations.

5b) In RC/V Form 3.6.3, add "atca061-0-0-2" and "atca061-0-0-10" :

```
Screen 1 of 4
                 SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

*>  1. NETWORK ID      ABCDE
*   2. OFFICE ID      444

  SS7 NODE ID              HOST IDENTIFIER
  ------------  ----------------------------------------
   3. NODE 0    atca061-0-0-1
   4. NODE 1    atca061-0-0-9
   5. NODE 2    atca061-0-0-4
   6. NODE 3    atca061-0-0-12
   7. NODE 4    atca061-0-0-2
   8. NODE 5    atca061-0-0-10
   9. NODE 6    ________________________________________
  10. NODE 7    ________________________________________

 WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3],
 and MUXSCH of the corresponding node is required for each
 form update to take effect.
```

5c) In RC/V Form 3.6.2, update "LAN ID" from 0 to 1 for Node 20-23

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```
 Screen 1 of 1
                      NODE TO LAN ASSIGNMENT FORM



 *>  1. NETWORK ID               ABCDE
     2. OFFICE ID                444

     NODE ID  LAN ID  NODE ID  LAN ID   NODE ID  LAN ID  NODE ID   LAN ID
   ---------- ------ --------- ------ ---------- ------ ---------- ------
    3. NODE 0   1   11. NODE 8   1    19. NODE 16  1    27. NODE 24  0
    4. NODE 1   1   12. NODE 9   1    20. NODE 17  1    28. NODE 25  0
    5. NODE 2   1   13. NODE 10  1    21. NODE 18  1    29. NODE 26  0
    6. NODE 3   1   14. NODE 11  1    22. NODE 19  1    30. NODE 27  0
    7. NODE 4   1   15. NODE 12  1    23. NODE 20  1    31. NODE 28  0
    8. NODE 5   1   16. NODE 13  1    24. NODE 21  1    32. NODE 29  0
    9. NODE 6   1   17. NODE 14  1    25. NODE 22  1    33. NODE 30  0
   10. NODE 7   1   18. NODE 15  1    26. NODE 23  1    34. NODE 31  0
```

5d) In RC/V Forms 12.1 and 12.2, 3.6.1, 3.6.2, 3.6.3 and other forms as needed, configure the M2PA associations and links to bring up the link:

Example:

```
 < op:status,assoc=20-1; IP
    +++ ATCA061 2011-11-30 10:01:25 MAINT /SG016 #180887 0-0-9 >
 M  OP STATUS ASSOC=20-1  COMPLETED SUCCESSFULLY.
       ASSOCIATION     PATH STAT            DESTINATION IP ADDR
    ------------------ ---- ---- ---------------------------------
     20- 1 M2PA CLIENT  PRI MOOS 0.0.0.0
     20- 1 M2PA CLIENT  SEC MOOS 0.0.0.0

    END OF REPORT #180887++-
```

```
< rst:assoc=20-1; IP
    +++ ATCA061 2011-11-30 10:02:00 MAINT   #180902 0-0-9 >
 M  RST ASSOC=20-1 COMMAND ACCEPTED SUCCESSFULLY
    END OF REPORT #180902++-
```

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```
< op:status,assoc=20-1; IP
   +++ ATCA061 2011-12-01 09:01:07 MAINT /SG016 #183058 0-0-9 >
M  OP STATUS ASSOC=20-1  COMPLETED SUCCESSFULLY.
      ASSOCIATION     PATH STAT            DESTINATION IP ADDR
   ------------------ ---- ---- ----------------------------------
    20- 1 M2PA CLIENT  PRI  ACT 10.241.81.12
    20- 1 M2PA CLIENT  SEC  OOS 0.0.0.0

   END OF REPORT #183058++-
```

```
< op:slk=20-1-16; PF
   +++ ATCA061 2011-11-30 10:02:24 MAINT   #180906 0-0-9 >
   OP SLK=20-1-16 COMPLETED

   +-----------------------------+----------------------+--------+-----------+
   |        LINK DATA            |     STATUS FLAGS     |  LINK  |    LINK   |
   +-----------------------------+----------------------+ACTIVITY|AVAILABILTY|
   |  No.   |LS|SLC|Cg|LFC|CLASS |FAIL|BLK|RBLK|INH|RINH|  STATE |    STATE  |
   +--------+--+---+--+---+------+----+---+----+---+----+--------+-----------+
   | 20-1-16| 1|  0| 0|   |M2PA  |  Y |   |    |   |    |INACTIVE|UNAVAILABLE|
   +--------+--+---+--+---+------+----+---+----+---+----+--------+-----------+

   END OF REPORT #180906++-
```

```
< rst:slk=20-1-16; PF
   +++ ATCA061 2011-11-30 10:02:55 MAINT /S7209 #180912 0-0-9 >
M  RST SLK=20-1-16 COMPLETED, PROTOCOL HANDSHAKING IN PROGRESS.
   END OF REPORT #180912++-
```


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```
< op:slk=20-1-16; PF
    +++ ATCA061 2011-12-01 09:01:39 MAINT   #183059 0-0-9 >
    OP SLK=20-1-16 COMPLETED

    +-----------------------------+----------------------+---------+-----------+
    |        LINK DATA            |     STATUS FLAGS     |  LINK   |    LINK   |
    +-----------------------------+----------------------+ACTIVITY|AVAILABILTY|
    |  No.   |LS|SLC|Cg|LFC|CLASS |FAIL|BLK|RBLK|INH|RINH|  STATE  |    STATE  |
    +--------+--+---+--+---+------+----+---+----+---+----+---------+-----------+
    | 20-1-16| 1|  0| 0|   |M2PA  |    |   |    |   |    | ACTIVE  | AVAILABLE |
    +--------+--+---+--+---+------+----+---+----+---+----+---------+-----------+

    END OF REPORT #183059++-
```

5e) In Form 16.1 and 16.2, configure MUX sockets and reinitialize MUXSCH on the target non-pilot blade for the changes to take effect:

Form 16.1:

```
                                Record 3/6
Screen 1 of 1
                         MUX LOCAL IP CONFIGURATION FORM

 *> 1. LOCAL HOST IP           169.254.128.4
 *> 2. PORT NUMBER             8888
    3. HOST ID                 0-0-4
    4. USED BY MUX2SCH         F

  WARNING: Level 1 initialization of MUXSCH (or/and MUX2SCH)
 is required for each form change to take effect.
```

Form 16.2:

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```
 Screen 1 of 1
                              MUX SSN CONFIGURATION FORM

*>  1. HOST ID                                0-0-4
    2. LOCAL SUBSYSTEM NUMBER 1               239
    3. LOCAL SUBSYSTEM NUMBER 2               0
    4. LOCAL SUBSYSTEM NUMBER 3               0
    5. LOCAL SUBSYSTEM NUMBER 4               0
    6. LOCAL SUBSYSTEM NUMBER 5               0
    7. LOCAL SUBSYSTEM NUMBER 6               0
    8. LOCAL SUBSYSTEM NUMBER 7               0
    9. LOCAL SUBSYSTEM NUMBER 8               0
   10. LOCAL SUBSYSTEM NUMBER 9               0
   11. LOCAL SUBSYSTEM NUMBER 10              0
   12. LOCAL SUBSYSTEM NUMBER 11              0
   13. LOCAL SUBSYSTEM NUMBER 12              0
   14. LOCAL SUBSYSTEM NUMBER 13              0
   15. LOCAL SUBSYSTEM NUMBER 14              0
   16. LOCAL SUBSYSTEM NUMBER 15              0
 WARNING: MUXSCH level 1 init is needed for the form change
 to take effect.
```

Example:

```
 < init:proc=MUXSCH,level=1,ucl,machine=0-0-4; PF
    +++ ATCA061 2011-11-30 10:18:18 MAINT /IN014 #181007 0-0-9 >
 M  INIT PROC=MUXSCH LEVEL=1 MACHINE=0-0-4 UCL REQUEST SUCCESSFULLY ACKNOWLEDGED
    END OF REPORT #181007++-
```

```
< op:muxskt,machine=0-0-4; IP
    +++ ATCA061 2011-11-30 10:18:30 MAINT /MX001 #181025 0-0-9 >
 M  OP MUXSKT MACHINE=0-0-4 COMPLETED SUCCESSFULLY, LOCAL HOST IP = 169.254.128.4
     PORT = 8888.
    END OF REPORT #181025++-
```


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```
< op:muxagt,machine=0-0-4; IP
   +++ ATCA061 2011-11-30 10:19:29 MAINT   #181035 0-0-9 >
   OP MUXAGT MACHINE=0-0-4 COMPLETED

   HW ID  AGT NAME                    AGENT IP ADDRESS
   ===== ========== ============================================================
     0   ATCA061-    169.254.128.2

   END OF REPORT #181035++-
```

Note: If the measurement has been enabled for the existing SS7 stacks, then further changes are not needed. Otherwise, form 2.4 is updated to enable the measurement for S7SCH0 – S7SCH3 and STSCH0 - STSCH3 based on the number of SS7 stacks running in the system.

END OF STEPS

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Measurements

3.67 Overview

3.67.1 Purpose

This section describes measurement reports related to SS7.

3.67.2 Contents

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3.68 Platform performance measurement report

3.68.1

The MS_PERF_MEAS report contains performance measurements of all nodes in the Operations, Administration, and Maintenance (OA&M) group

Note: Reports in the following table is collected once in every 30 minutes by default.

Table 3-9 Platform performance measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected.
% Running in User Mode	The percentage of time that the machine was running in user mode (executing user-level instructions).
% Running in System Mode	The percentage of time that the machine was running in system mode (executing system-level instructions)
% Waiting for Blocked I/O	The percentage of time that the machine was waiting for blocked input or output.
% Idle	The percentage of time that the machine was idle.
Peak Page Faults in Any 1 Min. Intvl.	The highest number of virtual memory page faults that occur during any 1 minute period.
Avg. Page Faults per Second	The average number of virtual memory page faults per second . The faults are calculated by dividing the total number of page faults by the number of seconds in the collection interval .
Avg. Page Out per Second	The average number of page outs per second. The page outs are calculated by dividing the total number of page outs by the number of seconds in the collection interval.
Avg. Page Scan per Second	The rate at which the operating system (OS) is scanning pages per second. If the pages are not enough, the OS looks for pages to page out.

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3.69 Process measurement report

3.69.1

The MS_PROCESS_MEAS report contains measurements of the CPU utilization for each process which exceeds a percentage (currently set at 0.5%) of one CPU's cycles.

Note: The data in this report is collected every 30 minutes by default.

Table 3-10 Process measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected.
Process Name	Name of process being measured.
% CPU	The percentage of utilization of one CPU.

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3.70 SS7 front end processor measurement report

3.70.1 Description

The S7_FEP_MEAS report contains the SS7 link-related measurements that SS7 Service Circuit Handlers (S7SCHs) retrieve from each SS7 interface controller (S7IC) that is equipped on the platform. All of the measurements in this report are stored on a per-link basis.

3.70.2 Example

The following figure is a sample S7_FEP_MEAS report.

Figure 3-20 S7_FEP_MEAS sample report

Traffic measurements

DURATION	ENTID	MSURECD	MSUTRAN	OCTRECD	OCTTRAN
1800	A000001-11	62114	55229	5151382	4497671
1800	A000001-12	62114	55152	5151382	4491280
1800	A000001-21	62114	55237	5151382	4498331
1800	A000001-22	62114	55190	5151382	4494434

Traffic measurements

DURATION	ENTID	NEGACKS	MSURTRAN
1800	A000001-11	0	0
1800	A000001-12	0	0
1800	A000001-21	0	0
1800	A000001-22	0	0

Link errors

DURATION	ENTID	MSURCERR	ERRSEC	ZERRINTV
1800	A000001-11	0	0	0
1800	A000001-12	0	0	0
1800	A000001-21	0	0	0
1800	A000001-22	0	0	0

3.70.3 Measurement fields

This section describes the measurement fields in the S7_FEP_MEAS report.The description provides per-link overall traffic volume measurements information.

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Fields	Description
Duration	The time interval for which measurements are collected (in seconds).
ENTID	The signaling link (SLK) denoted in the following format: A00000xx-yz where A00000xx is the SLK set number yz is the signaling link code (SLC) for this SLK
MSURECD	The measurement specifies the number of MSUs (Message Signaling Units) received on the link
MSUTRAN	The measurement specifies the number of MSUs transmitted on the link.
OCTRECD	The measurement specifies the number of octets (bytes) received on the link.
OCTTRAN	The measurement specifies the number of octets (bytes) transmitted on the link.
NEGACKS	The measurement specifies the "number of negative acknowledgements received" on the link.
MSURTRAN	The measurement specifies the "number of MSUs retransmitted" on the link.
MSURCERR	The measurement specifies the "number of MSUs received in error" on the link.
ERRSEC	The measurement specifies the "number of seconds in which an error condition existed" on the link.
ZERRINTV	The measurement specifies the "number of intervals in which an error condition existed" on the link. This measurement is only valid for MTP2AA link class.

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3.71 SG_SCTP_MEAS measurement report

3.71.1 Purpose

The SG_SCTP_MEAS provides information on the activity of SCTP messages. It has a default duration value of 30 minutes.

3.71.2 Sample SG_SCTP_MEAS measurement report

The following is a sample `SG_SCTP_MEAS` measurement report. The report can be generated by typing the following command at a local maintenance terminal:**`OP:MEAS=TRFC30,TABLE="SG_SCTP_MEAS";`**

Figure 3-21 SG_SCTP_MEAS measurement report

```
Duration  LOCAL_NODEID     AssocID INCSCTPASSOC INCBYTESASSOC OUTSCTPASSOC
---------- ------------ ---------- ------------ ------------- ------------
     300             0          1       665947      54654225       664244
     300             0          3       665698      54632539       664038
     300             1          2       666659      54702255       663728
     300             1          4       665934      54681896       662954

Duration   LOCAL_NODEID    AssocID OUTBYTESASSOC SCTPERRORASSOC RETRANSASSOC
---------- ------------ ---------- ------------- -------------- ------------
     300           0          1        60130888           0             84
     300           0          3        60125094     0             79
     300           1          2         60117366           0              89
     300           1          4         60095694           0              88

Duration   LOCAL_NODEID   AssocID   SCTPCONASSOC SWITCHOVERSUM PUTMSGERRASSOC
---------- ------------  ---------  ------------ ------------- --------------
     300          0             1             0             0              0
     300          0             3             0             0              0
     300          1             2             0             0              0
     300          1             4             0             0              0
```

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```
  Duration LOCAL_NODEID   AssocID  ASSOCACTSEC
  -------- ------------ ---------- -----------
    300          0           1          300
    300          0           3          300
    300          1           2          300
    300          1           4          300

SUM(INCSCTPASSOC) SUM(INCBYTESASSOC) SUM(OUTSCTPASSOC) SUM(OUTBYTESASSOC)
----------------- ------------------ ----------------- ------------------
       2664238          218670915           2654964          240469042

SUM(SCTPERRORASSOC) SUM(RETRANSASSOC) SUM(SCTPCONASSOC) SUM(SWITCHOVERSUM)
------------------- ----------------- ----------------- ------------------
           0                340                 0                  0

SUM(PUTMSGERRASSOC) SUM(ASSOCACTSEC)
------------------- ----------------
           0              1200
```

3.71.3 Measurement descriptions

This section describes the fields in the SG_SCTP_MEAS measurement report.

Field	Description
Duration	The number of seconds in the interval for which measurements are collected.
LOCAL_NODEID	The Local Node ID which the Association defined.
AssocID	Association Identifier. The values are 1 to 42.
INCSCTPASSOC	Number of incoming SCTP data messages received for all associations.
SUM(INCSCTPASSOC)	Number of SCTP messages received for all associations
INCBYTESASSOC	Number of bytes received on a single SCTP association incoming SCTP data messages.
SUM(INCBYTESASSOC)	Number of bytes received on all SCTP associations incoming SCTP data messages.
OUTSCTPASSOC	Number of outgoing SCTP data messages sent per association.
SUM(OUTSCTPASSOC)	Number of bytes sent from all SCTP associations outgoing SCTP data messages.
OUTBYTESASSOC	Number of bytes sent per a single SCTP association

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Field	Description
SUM(OUTBYTESASSOC)	Number of bytes sent from all SCTP associations
SCTPERRORASSOC	Number of errors occurred per association
SUM(SCTPERRORASSOC)	Number of errors occurred from all associations
RETRANSASSOC	Number of retransmissions of SCTP data messages per association
SUM(RETRANSASSOC)	Number of retransmissions of SCTP data messages from all associations
SCTPCONASSOC	Number of SCTP data messages discarded due to congestion per association
SUM(SCTPCONASSOC)	Number of SCTP data messages discarded due to congestion from all associations
SWITCHOVERSUM	Number of times SCTP connection switched over (from primary to secondary and back) per association
SUM(SWITCHOVERSUM)	Number of times SCTP connection switched over (from primary to secondary and back) for all associations
PUTMSGERRASSOC	Number of putmsg errors per association
SUM(PUTMSGERRASSOC)	Number of putmsg errors for all associations
ASSOCACTSEC	Number of seconds that SCTP association is active
Number of seconds that SCTP association active for all associations	Number of seconds SCTP association active for all associations

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3.72 SS7 Link Measurement Report

3.72.1 Overview

The S7_LK_MEAS report contains the SS7 link-related measurements that are retrieved by the Message Transfer Part, Level 3 (MTPL3) of the SS7 protocol. All of the measurements in this report are stored on a per-link basis.

3.72.2 Example

The following figure shows a sample S7_LK_MEAS report. The measurement fields of this report are described as follows:

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Figure 3-22 S7_LK_MEAS report sample (part 1 of 3)

```
Duration ENTID           RPROOUTG RPROUTGE DRFEORO
-------------------------------------------------
1800     A0000001-01            0        0       0
1800     A0000002-01            0        0       0
1800     A0000001-02            0        0       0
1800     A0000002-02            0        0       0
1800     A0000001-03            0        0       0
1800     A0000002-03            0        0       0
1800     A0000001-04            0        0       0
1800     A0000002-04            0        0       0
Duration ENTID       ECCNGLV1 ECCNGLV2 ECCNGLV3 ECCNGLV4
-------------------------------------------------------
1800     A0000001-01        0        0       0       0
1800     A0000002-01        0        0       0       0
1800     A0000001-02        0        0       0       0
1800     A0000002-02        0        0       0       0
1800     A0000001-03        0        0       0       0
1800     A0000002-03        0        0       0       0
1800     A0000001-04        0        0       0       0
1800     A0000002-04        0        0       0       0
```

Figure 3-23 S7_LK_MEAS report sample (part 2 of 3)

```
Duration ENTID       TDCNGLV1 TDCNGLV2 TDCNGLV3 TDCNGLV4
-------------------------------------------------------
1800     A0000001-01        0        0       0       0
1800     A0000002-01        0        0       0       0
1800     A0000001-02        0        0       0       0
1800     A0000002-02        0        0       0       0
1800     A0000001-03        0        0       0       0
1800     A0000002-03        0        0       0       0
1800     A0000001-04        0        0       0       0
1800     A0000002-04        0        0       0       0
Duration ENTID       MSUDISC0 MSUDISC1 MSUDISC2 MSUDISC3
-------------------------------------------------------
1800     A0000001-01        0        0       0       0
1800     A0000002-01        0        0       0       0
1800     A0000001-02        0        0       0       0
1800     A0000002-02        0        0       0       0
1800     A0000001-03        0        0       0       0
1800     A0000002-03        0        0       0       0
1800     A0000001-04        0        0       0       0
1800     A0000002-04        0        0       0       0
Duration ENTID           NDCFLABN NDCFLKDA NDCFLXER
-------------------------------------------------
1800     A0000001-01            0        0        0
```

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```
1800     A0000002-01            0        0        0
1800     A0000001-02            0        0        0
1800     A0000002-02            0        0        0
1800     A0000001-03            0        0        0
1800     A0000002-03            0        0        0
1800     A0000001-04            0        0        0
1800     A0000002-04            0        0        0
```

Figure 3-24 S7_LK_MEAS report sample (part 3 of 3)

```
Duration ENTID           ACHGOVRS ACHGBCKS TLNKACTV
-------------------------------------------------
1800     A0000001-01            0        0        0
1800     A0000002-01            0        0        0
1800     A0000001-02            0        0        0
1800     A0000002-02            0        0        0
1800     A0000001-03            0        0        0
1800     A0000002-03            0        0        0
1800     A0000001-04            0        0        0
1800     A0000002-04            0        0        0
Duration ENTID              C7ACB  C7ACOCOV   C7MCOF
-------------------------------------------------
1800     A0000001-01            0        0        0
1800     A0000002-01            0        0        0
1800     A0000001-02            0        0        0
1800     A0000002-02            0        0        0
1800     A0000001-03            0        0        0
1800     A0000002-03            0        0        0
1800     A0000001-04            0        0        0
1800     A0000002-04            0        0        0
Duration ENTID         RMTP3MSG XMTP3NSG NMDCLFLR DRDCLFLR
-------------------------------------------------
1800     A0000001-01          0        0       0       0
1800     A0000002-01          0        0       0       0
1800     A0000001-02          0        0       0       0
1800     A0000002-02          0        0       0       0
1800     A0000001-03          0        0       0       0
1800     A0000002-03          0        0       0       0
1800     A0000001-04          0        0       0       0
1800     A0000002-04          0        0       0       0
```

3.72.3 Measurement fields

This section describes the measurement fields in the S7_LK_MEAS report.

Field	Description
Duration	The time interval for which measurements are collected (in seconds).

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Field	Description
ENTID	The signaling link (SLK) denoted in the following format: A00000xx-yz where A00000xx is the SLK set number yz is the signaling link code (SLC) for this SLK

Remote processor outage measurements

This section of the report describes remote processor outage events and includes the following measurements:

- The RPROOUTG measurement specifies the number of remote processor outage events that occurred.
- The RPROUTGE measurement specifies the number of remote processor outage events that ended.
- The DRFEORO measurement specifies duration of remote processor outage occurred.

Link congestion events

This section of the report describes link congestion events. The congestion states are represented in this report:

- The ECCNGLV1 measurement specifies the number of events that reached Congestion Level1.
- The ECCNGLV2 measurement specifies the number of events that reached Congestion Level 2.
- The ECCNGLV3 measurement specifies the number of events that reached Congestion Level 3.
- The ECCNGLV4 measurement specifies the number of events that reached Congestion Level 4.

Link congestion duration

This section of the report describes the duration of signaling link congestion events.

Duration data for the congestion states are represented in this report:

- TDCNGLV1 specifies the duration of signaling link congestion for Level1.
- TDCNGLV2 specifies the duration of signaling link congestion for Level 2.
- TDCNGLV3 specifies the duration of signaling link congestion for Level 3.
- TDCNGLV4 specifies the duration of signaling link congestion for Level 4.

MSUs discarded due to link congestion

This section of the report describes counts for the number of MSUs that have been discarded due to link congestion duration. The discarded MSUs are reported per priority level (Levels 0 through 3):

- The MSUDISC0 measurement specifies the number of Priority 0 MSUs that have been discarded due to congestion.
- The MSUDISC1 measurement specifies the number of Priority 1 MSUs that have been discarded due to congestion.

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- The MSUDISC2 measurement specifies the number of Priority 2 MSUs that have been discarded due to congestion.
- The MSUDISC3 measurement specifies the number of Priority 3 MSUs that have been discarded due to congestion.

Link failure reasons

This section of the report identifies link failure reasons for each signaling link (by entity ID).

These measurements include the following:

- The NDCFLABN measurement specifies the number of signaling link declared failures due to abnormal Forward Indicator Bits Received (FIBR) and abnormal Backward Sequence Number Received (BSNR). Indicator bits are used in transmission verification algorithms in the SS7 protocol.
- The NDCFLXDA measurement specifies the number of signaling link declared failures due to excessive delay of acknowledgment (Level 2 ACK) from the far end.
- The NDCFLXER measurement specifies the number of signaling link declared failures due to excessive failure rate.

Changeovers/changebacks

The section of the report describes automatic changeovers and changebacks.

These measurements include the following:

- The ACHGOVRS measurement specifies the number of times automatic changeover occurs for a link. This measurement includes automatic changeovers that are initiated at the near end and those that are initiated at the far end.
- The ACHGBCKS measurement specifies the number of times automatic changeback occurs for a link. This measurement includes automatic changebacks that are initiated at the near end and those that are initiated at the far end.
- The TLNKACTV measurement specifies time link active in seconds.
- The C7ACB measurement records the number of times that a link changes back before the craft terminal timer (T19) expires for the first time.
- The C7ACCOCOV measurement records the number of automatic changeovers that are initiated by the far end of the link.
- The C7MCOF measurement records the number of manual changeovers that are initiated by the far end of the link.

Other miscellaneous measurements

This section of the report describes miscellaneous reasons for link failures (that is, reasons that were not covered in the previous sections of the report).

- The RMTP3MSG measurement specifies the number of messages received by MTP Level 3 on a per-link basis.
- The XMTP3MSG measurement specifies the number of messages transmitted by MTP Level 3 on a per-link basis.

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- The NMDCLFLR measurement specifies signaling link declared failures. This count is pegged whenever a signaling link fails to prove in after a changeover.
- The DRDCLFLR measurement specifies duration of declared signaling link failure. This measurement is tied to the NMDCLFLR measurement; if nonzero NMDCLFLR counts are generated, then counts for DRDCLFLR are also generated.

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3.73 SS7 message transfer part measurement report

3.73.1

The S7_MTP_MEAS report records measurement data for Message Transfer Part Level 3 (MTPL3).

Note: The data in this report is collected once in every 30 minutes by default.

Table 3-11 SS7 message transfer part measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected.
ENTID	Has the value MTP, which indicates that the data is associated with Global MTPL3
INVSIO	Number of MSUs that are received and then discarded due to invalid Service Information Octets (SIOs), which are segments of the MSU that contain information such as the service indicator and the sub service field. Link nodes use the service indicator to perform some signal handling functions and message routing. The sub service field contains the national and access priority code bits.
INVDPC	Number of MSUs that are received and discarded due to an invalid Destination Point Code (DPC). The DPC uniquely identifies the network node for which the MSU is desired.
NNISOLF	Number of times that a node was isolated due to signaling link failures
LNISOLF	Duration (in seconds) of the node isolation due to signaling link failures

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3.74 SS7_SCCP_MEAS measurement report

3.74.1

The S7_SCCP_MEAS report tracks SS7 Signaling Connection Control Part (SCCP) measurements that are collected on a global basis on the platform. The SCCP layer of the SS7 protocol provides signaling connections within the SS7 network. This report has multiple sections.

Note: The data in this report is collected once in every 30 minutes by default.

Table 3-12 SS7 signaling connection control part measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected
ENTID	Has the value SCCP, which indicates that the data is associated with the SCCP layer of the SS7 protocol
Incoming application messages	
INCQRYMSG	Number of incoming queries that are received by the node
INCSCCP	Number of incoming SCCP unit data messages/chunks, or the total of incoming SS7 application messages
Unprocessed incoming application messages	
QRYSSNOOS	Number of incoming queries that are received for all SSNs that the host put in the prohibited (out-of-service) state
FAILEDQRY	Number of incoming queries that have been discarded
TOTSSNOOS	Number of incoming messages that are received for all SSNs that the node put in the prohibited (out-of-service) state
FAILEDATTMT	Number of failed attempts for all incoming application messages. A failed call is a call that does not complete due to either (1) congestion at the near-end switch or (2) a full receiving queue that prevents the node from accepting additional calls
UNEQPDSSN	Total number of application messages that are received for all SSNs left unequipped by the host
INCSCCPE	Total number of incoming application messages that are discarded by the node
Outgoing application messages	

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Table 3-12 SS7 signaling connection control part measurement report (continued)

Field	Description
RSPTIMEOUT	Number of calls that are dropped due to node response time-out
BADDPC	Total number of outgoing messages for which DPC is unavailable
OUTSCCP	Total number of outgoing messages that are sent out by this node
OUTQRYMSG	Number of outgoing queries that are sent from the node
QRYSNDFAIL	Number of failed outgoing queries that are sent from the node
Transaction ID table usage per node	
PEAKITID	Peak, or maximums number of incoming transactions that are received by the node
PEAKOTID	Peak, or maximum number of outgoing transactions that are sent out by the node
AVGITID	Average number of incoming transactions that are received by the node
AVGOTID	Average number of outgoing transactions that are sent out by the node
Local messages per node	
LINCSCCP	Number of local incoming SCCP messages that are received by the node
LOUTSCCP	Number of local outgoing SCCP messages that are sent out by the node
Error performance per node	
NETWKCONG	Number of routing failure SCCP messages due to network congestion that are sent out by the node
SUBSYSCONG	Number of routing failure SCCP messages due to subsystem congestion that are received by the node
INCSYNER	Number of syntax error detected SCCP messages that are received by the node
NMRTGFLR	Total number of unqualified routing failure SCCP messages that are received or sent out by the node
RSMTIMEOUT	Number of reassembly error messages due to timer expiry that are received by the node

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Table 3-12 SS7 signaling connection control part measurement report (continued)

Field	Description
RSMOOSEQ	Number of reassembly error messages due to segment received out of sequence that are received by the node
RSMNOSPACE	Number of reassembly error messages due to no reassembly space that are received by the node
SGMLGMSGE	Number of too large messages for segmentation that are received by the node
SGMFAIL	Number of segmentation failed messages that are received by the node
NTWKCTMN	Number of messages discarded by network containment controls
SSN availability and utilization per node	
NMSOGRCV	Total number of subsystem out-of-service grant messages that are received by the node
NMSORDEN	Total number of subsystem out-of-service request denied (Tcoord expiry) messages that are sent out by the NODE
OUTLXUDT	Total number of (X)UDT messages originated per class and source SSN that are sent out by the node
INCLXUDT	Total number of (X)UDT messages terminated per class and sink SSN that are received by the node

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3.75 SS7 subsystem number measurement report

3.75.1

The S7_SSN_MEAS report shows SS7 Signaling Connection Control Part (SCCP) measurements that are collected on a per-SSN basis.

Note: The data in this report is collected once in every 30 minutes by default.

This report has multiple sections.

Table 3-13 SS7 subsystem number measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected
ENTID	A Subsystem Number (SSN)
Incoming application messages per SSN	
INCQRYMSG	Number of incoming queries messages for this SSN
INCSCCP	Number of incoming SCCP unit data messages/chunks, or the total of incoming SS7 application messages
INC_SCCP_BYTES	Total number of SCCP bytes received by this SSN
Unprocessed incoming application messages per SSN	
QRYSSNOOS	Number of incoming queries that are received for the SSN while that SSN was in the prohibited (out-of-service) state
FAILEDQRY	Number of incoming queries that have been discarded for this SSN
TOTSSNOOS	Number of incoming messages that are received for this SSN while that SSN was in the prohibited (out-of-service) state
FAILEDATTMT	A miscellaneous count of calls that this SSN cannot process for any reason and that is not covered by other count. For example, this measurement may include various discard messages, such as message queue is full.
Outgoing application messages per SSN	
RSPTIMEOUT	Number of calls that are dropped for this SSN due to node response time-out

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Table 3-13 SS7 subsystem number measurement report (continued)

Field	Description
BADDPC	Total number of outgoing messages for this SSN for which DPC is unavailable
OUTSCCP	Number of outgoing SCCP unit data messages/chunks, or the total number of outgoing SS7 application messages for this SSN
OUT_SCCP_BYTES	Total number of SCCP bytes sent by the SSN
OUTQRYMSG	Number of outgoing queries that are sent by this SSN
QRYSNDFAIL	Number of failed outgoing queries that are sent by this SSN
SSNOOSFWD	Number of outgoing messages forwarded to the mate node point code due to this local SSN out of service state
Availability and utilization per SSN	
NMSOGRCV	Number of subsystem out-of-service grant messages that are received by this SSN
NMSORDEN	Number of subsystem out-of-service request denied (Tcoord expiry) messages that are sent out by this SSN
OUTLXUDT	Total number of (X)UDT messages originated per class and source SSN that are sent out by this SSN
INCLXUDT	Total number of (X)UDT messages terminated per class and sink SSN that are received by this SSN

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3.76 SS7 cluster measurement report

3.76.1 Description

The S7_CLUSTER_MEAS report tracks the measurements of inter-node SS7 messages for a clustered SS7 environment. In a clustered SS7 environment, an SS7 node may forward SS7 messages to other nodes for processing. S7_CLUSTER_CLUSTER measurements are collected by the SS7 Service Circuit Handler (S7SCH) on a per node basis.

3.76.2 Example

The following figure shows a sample S7_CLUSTER_MEAS report. The measurement fields in this report are described below.

Figure 3-25 S7_CLUSTER_MEAS

```
DURATION LNODEID NODEID CMSGRECD CMSGTRAN COCTRECD COCTTRAN
-------- ------- ------ -------- -------- -------- --------
  1800      1       0       0        0        0        0
  1800      1       2       0        0        0        0
  1800      1       3       0        0        0        0


  DURATION  LNODEID  NODEID  INCCMSGE  OUTCMSGE
  --------  -------  ------  --------  --------
    1800        1       0        0         0
    1800        1       2        0         0
    1800        1       3        0         0
```

3.76.3 Measurement fields

This section describes the measurement fields in the S7_CLUSTER_MEAS report.

Field	Description
Duration	The number of seconds in the interval for which measurements are collected. For example, a 24 hour report has a duration value of 86400 seconds.
LNODEID	The local node ID in the SS7 Point code cluster.
NODEID	The node ID which the messages from/to local node ID showed in the collected measurements are.
CMSGRECD	Number of SS7 messages received from another node (indicated by NODEID) to local node in the cluster.
CMSGTRAN	Number of SS7 messages transmitted to another node (indicated by NODEID) from local node in the cluster.

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Field	Description
COCTRECD	Number of octets of SS7 messages received from another node (indicated by NODEID) to local node in the cluster.
COCTTRAN	Number of octets of SS7 messages transmitted to another node (indicated by NODEID) from local node in the cluster.
INCCMSGE	Number of SCCP/ISUP messages received from another node (indicated by NODEID) to local node in the cluster has been dropped due to called party SSN out of service. For normal operation this measurement should be 0. This is only pegged when the sending node has incorrect SSN status or in the case of a race condition.
OUTCMSGE	Number of SCCP/ISUP messages received from another node (indicated by NODEID) to local node in the cluster has been dropped due to SS7 link/association out of service. For normal operation this measurement should be 0. This is only pegged when the sending node has incorrect SLK status or in the case of a race condition.

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3.77 SS7 route measurement report

3.77.1 Description

The S7_ROUTE_MEAS report tracks the inaccessibility of the Adjacent Signaling Points. S7_ROUTE_MEAS measurements are collected by the SS7 Service Circuit Handler (S7SCH) on a per signaling point basis.

3.77.2 Example

The following figure shows a sample S7_ROUTE_MEAS report. The measurement fields in this report are described in "Measurement fields," below.

Figure 3-26 S7_ROUTE_MEAS report sample

```
DURATION  INDEX   POINTCODE   NMSPINAC   DRSPINAC
--------  -----   ---------   --------   --------
  1800      1      230-1-0        0         1800
  1800      2      230-2-0        0         1800
```

3.77.3 Measurement fields

This section describes the measurement fields in the S7_ROUTE_MEAS report.

Field	Description
DURATION	The number of seconds in the interval for which measurements are collected. For example, a 24 hour report has a duration value of 86400 seconds.
INDEX	The index of the Adjacent Signaling Point in the report.
POINTCODE	The Point Code of the Adjacent Signaling Point.
NMSPINAC	Number of times Adjacent Signaling Point becomes inaccessible
DRSPINAC	Duration of Adjacent Signaling Point inaccessibility

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3.78 SS7_M3UASCCP_MEAS measurement report

3.78.1

The S7_M3UASCCP_MEAS report presents measurements that are associated with the M3UA (MTP Level 3 User Adaptation Layer) SCCP (Signaling Connection Control Part) layer of SS7 protocol. These measurements are collected by the SS7 Service Circuit Handler (S7SCH) on a global basis for the system.

The M3UA SCCP layer of the SS7 protocol provides logical signaling connections within the SS7 network.

These measurements are similar to the SS7 measurements for S7_SCCP_MEAS. The SCCP measurements described here, however, would be populated when M3UA/SCTP (Stream Control Transmission Protocol) traffic is being processed by the system.

The SSN identifies the specific feature (application) within an SSP or an SCP that process the M3UA SCCP layer of the SS7 protocol. For each application (such as CNAM or ANC), Telcordia Technologies, Inc. assigns a unique SSN number. All network and service providers use this standard SSN number for each specific application. For example, the SSN for the CNAM application is standardized as 236.

Note: The data in this report is collected once in every 30 minutes by default.

This report has multiple sections.

Table 3-14 SS7 M3UA SCCP measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected.
ENTID	Has the value SCCP, which indicates that the data is associated with the M3UA SCCP layer of the SS7 protocol.
Incoming application messages per node	
INCQRYMSG	Number of incoming queries that are received by the node
INCSCCP	Number of incoming SCCP unit data messages/chunks, or the total of incoming SS7 application messages.
	As the M3UA SCCP layer of the SS7 protocol essentially acts as an envelope in which a message is delivered to an application, the incoming M3UA SCCP unit data messages/chunks can be equated with the incoming SS7 application messages.
	These messages include query, conversation, response, and unidirectional messages.

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Table 3-14 SS7 M3UA SCCP measurement report (continued)

Field	Description
Unprocessed incoming application messages per node	
QRYSSNOOS	Number of incoming queries that are received for all SSNs that the host put in the prohibited (out-of-service) state
FAILEDQRY	Number of incoming queries that have been discarded
TOTSSNOOS	Number of incoming messages that are received for all SSNs that the node put in the prohibited (out-of-service) state
FAILEDATTMT	Number of failed attempts for all incoming application messages. A failed call is a call that does not complete due to either (1) congestion at the near-end switch or (2) a full receiving queue that prevents the node from accepting additional calls
UNEQPDSSN	Total number of application messages that are received for all SSNs left unequipped by the host
INCSCCPE	Total number of incoming application messages that are discarded by the node
Outgoing application messages per node	
RSPTIMEOUT	Number of calls that are dropped due to node response time out
	The default value of the RSPTIMEOUT measurement is 2 secs. Coordinate the value of this field with the local SS7 network for the applications (SSNs) of concern. The recommended range is 2 seconds to 5 seconds, depending on the application.
	This value can be set through the QUERY RESPONSE TIME field of the PARAMETERS FORM, which is under the OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU.
BADDPC	Total number of outgoing messages for which DPC is unavailable

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Table 3-14 SS7 M3UA SCCP measurement report (continued)

Field	Description
OUTSCCP	Total number of outgoing messages that are sent out by this node
	Because the M3UA SCCP layer of the SS7 protocol essentially acts as an envelope in which a message is delivered to an application, the outgoing M3UA SCCP unit data messages/chunks can be equated with the outgoing SS7 application messages.
	These messages include query, conversation, response, and unidirectional messages.
OUTQRYMSG	Number of outgoing queries that are sent from the node
QRYSNDFAIL	Number of failed outgoing queries that are sent from the node

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3.79 SG M3UA cluster measurement report

3.79.1 Overview

The SG_M3UACLU_MEAS report tracks the measurement of inter-node M3UA (Message Transfer Part 3 User Adaptation Layer) messages for a SS7 clustered environment. In a clustered environment, an SS7 node may forward M3UA messages to other nodes for processing. SG_M3UACLU_MEAS measurements are collected by the STSCH (SIGTRAN Service Circuit Handler) on a per node basis.

3.79.2 Example

Figure 3-27 SG_M3UACLU_MEAS measurement report

```
       Measurements for SG_M3UACLU_MEAS table

Wednesday, 12/08/2004, 06:40; Expected Duration: 300 Seconds (5 minutes)

Duration  LOCAL_NODEID   RMT_NODEID   MSG_RECD  MSG_SENT  OCT_RECD
--------  ------------   ----------   --------  --------  --------
   299           1              2            0          31          0

OCT_SENT  ERR_IN_MSG    ERR_OUT_MSG  BC_RECD_MSG  BC_SENT_MSG
--------  ----------    -----------  -----------  ------------
    420         0                0           39             0
```

3.79.3 Measurement descriptions

This section describes the fields in the SG_M3UACLU_MEAS measurement report.

Field	Description
Duration	The time interval for which measurements are collected (in seconds).
LOCAL_NODEID	The local node ID is the SS7 cluster local node ID which defined in the RCV from Form 3.6.1 SS7 cluster parameter form.
RMT_NODEID	The remote node ID from/to which the messages showed in the collected measurements are.
MSG_RECV	Number of M3UA messages received from another node (indicated by RMT_NODEID) in the cluster.
MSG_SENT	Number of M3UA messages transmitted to another node (indicated by RMT_NODEID) in the cluster.
OCT_RECV	Number of octets of the M3UA messages received from another node (indicated by RMT_NODEID) in the cluster.

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Field	Description
OCT_SENT	Number of octets of the M3UA messages transmitted to another node (indicated by RMT_NODEID) in the cluster.
ERR_IN_MSG	Number of M3UA messages received from another node (indicated by RMT_NODEID) in the cluster dropped due to no active SSN. Currently this field should always be 0 since STSCH is not directly handling the SSN states.
ERR_OUT_MSG	Number of M3UA messages received from another node (indicated by RMT_NODEID) in the cluster dropped due to no active associations. For normal operation this measurement should be 0. This is only pegged when the sending node has incorrect association status or in the case of a race condition.
BC_RECV_MSG	Number of M3UA broadcast messages received from another node (indicated by RMT_NODEID) in the cluster.
BC_SENT_MSG	Number of M3UA broadcast messages transmitted to another node (indicated by RMT_NODEID) in the cluster.

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3.80 SS7 Global Title Translation (GTT) report

3.80.1

The S7_GTT_MEAS report tracks the S7SCH Global Title Translation (GTT) processing of SS7 incoming and outgoing messages that have a routing indicator set to **`route by Global Title`**.

Note: The data in this report is collected once in every 30 minutes by default.

Table 3-15 SS7 Global Title Translation (GTT) report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected.
ENTID	Has the value GTT, which indicates that the data is associated with Global Title Translation.
SUCCESS	Number of successful incoming/outgoing message GTT has performed
DISCARD	Cumulative number of incoming/outgoing messages discarded due to GTT failure. This number would equal the sum of NOAFAIL + ADDRFAIL measurements
NOAFAIL	Number of incoming/outgoing GTT messages routing failures-no translation for address of such nature
ADDRFAIL	Number of incoming/outgoing messages GTT routing failures-no translation for specific address
SSNFAIL	Number of outgoing message GTT routing failures-subsystem failure
UNEQFAIL	Number of routing failures – unequipped user (not currently used)
NETPCFAIL	Number of outgoing message GTT routing failures – network failure (PC not available)
NETCGFAIL	Number of routing failures – network congestion (not currently used)
FAILEDCONV	Number of failed conversions (not currently used)
TOTFAIL	Number of incoming/outgoing message GTTs that failed for any reason
SNTTOBKUP	Number of outgoing messages in which the GTT resulted in the message being sent to the backup destination

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3.81 MX_SKT_MEAS measurement report

3.81.1 Overview

The MX_SKT_MEAS report shows MUX traffic measurements collected by MUXSCH.

Note: By default, the data in this report is collected once in every 5 minutes and inhibited.

Table 3-16 MUX traffic measurement report

Field	Description
Host ID	The ID (in asxxx or R-C-S format) of the host where the measurements are collected.
Agent Name	The Java agent host for which measurements are collected
IN_MSGS	Number of MUX messages received
OUT_MSGS	Number of MUX messages sent
IN_BYTES	Number of MUX bytes received
OUT_BYTES	Number of MUX bytes sent
IN_MSGS_FAIL	Number of received MUX messages that were dropped due to failure

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3.82 meas_admin tool

3.82.1 Overview

On an enterprise-installed system that supports SS7 stack, the **meas_admin** tool (*/cs/sn/bin/meas_admin*) can be used to enable or disable M2PA or M3UA measurements without using the RC/V interface.

3.82.2 USAGE

The general format of the **meas_admin** tool is:

meas_admin [-e type] [-i interval]

meas_admin *{-d | -h | -q | -r}*

DESCRIPTION

The **meas_admin** command only runs on an enterprise-installed system, where the RC/V interface is not used, to turn on/off measurements.

OPTIONS

`-d` to disable the installed M2PA or M3UA measurements, whichever are enabled

`-e` to enable measurements for the given type (M2PA or M3UA). If not specified, the tool would only update the collection interval of the enabled measurements.

`-h` to print usage of the command

`-i` interval can be TRFC5, TRFC15, TRFC30, PLNTHR, or PLNT24 which correspond to 5 minute, 15 minute, 30 minute, 1 hour, and 24 hour reporting intervals. If not provided, the tool would prompt for the interval value.

`-q` to query the current measurement configurations. It would print out all measurement tables that are enabled with their intervals.

`-r` to restart the MEAS process

meas_admin with “-e M2PA” option

If **meas_admin** command is run with “**-e M2PA**” option, the tool would enable the following measurements tables:

1. MS_PERF_MEAS
2. MS_PROCESS_MEAS
3. S7_FEP_MEAS
4. SG_SCTP_MEAS
5. S7_LK_MEAS
6. S7_MTP_MEAS
7. S7_SCCP_MEAS
8. S7_SSN_MEAS

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9. S7_CLUSTER_MEAS
10. S7_ROUTE_MEAS

meas_admin with “e-M3UA” option

If **meas_admin** command is run with “**-e M3UA**” option, the tool would enable the following measurements tables:

1. MS_PERF_MEAS
2. MS_PROCESS_MEAS
3. S7_M3UASCCP_MEAS
4. S7_SCCP_MEAS
5. S7_SSN_MEAS
6. SG_M3UA_CLU_MEAS

Note: All enabled tables are enabled with the same collection interval.

3.82.3 Query current measurements setting

Run **meas_admin** tool with -q option to query the current measurements setting. The tool would print the name (ms_tbl), collecting process (proc_name), and collecting interval (ms_intvl_v) of all enabled measurement tables.

Example

```
# meas_admin -q
       ms_tbl        | proc_name | ms_intvl_v
---------------------+-----------+------------
MS_PERF_MEAS         | MEASMT    | TRFC5
MS_PROCESS_MEAS      | MEASMT    | TRFC5
S7_M3UASCCP_MEAS     | S7SCH     | TRFC5
S7_SCCP_MEAS         | S7SCH     | TRFC5
S7_SSN_MEAS          | S7SCH     | TRFC5
SG_M3UA_CLU_MEAS     | STSCH     | TRFC5
(6 rows)
```

3.82.4 Enable M2PA or M3UA measurements

Run **meas_admin** with -e option to enable M2PA or M3UA measurements.

Example

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```
# meas_admin -e M2PA -i TRFC30
BEGIN
UPDATE 15
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
COMMIT
Restart MEAS process
meas_admin completed successfully

# meas_admin -q
     ms_tbl      | proc_name | ms_intvl_v
-----------------+-----------+------------
MS_PERF_MEAS     | MEASMT    | TRFC30
MS_PROCESS_MEAS  | MEASMT    | TRFC30
S7_CLUSTER_MEAS  | S7SCH     | TRFC30
S7_FEP_MEAS      | S7SCH     | TRFC30
S7_LK_MEAS       | S7SCH     | TRFC30
S7_MTP_MEAS      | S7SCH     | TRFC30
S7_ROUTE_MEAS    | S7SCH     | TRFC30
S7_SCCP_MEAS     | S7SCH     | TRFC30
S7_SSN_MEAS      | S7SCH     | TRFC30
SG_SCTP_MEAS     | STSCH     | TRFC30
(10 rows)
meas_admin completed successfully
```

Example

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```
# meas_admin -e M3UA -i PLNTHR
BEGIN
UPDATE 10
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
COMMIT
Restart MEAS process
meas_admin completed successfully

# meas_admin -q
      ms_tbl       | proc_name | ms_intvl_v
-------------------+-----------+------------
MS_PERF_MEAS      | MEASMT    | PLNTHR
MS_PROCESS_MEAS   | MEASMT    | PLNTHR
S7_M3UASCCP_MEAS | S7SCH     | PLNTHR
S7_SCCP_MEAS      | S7SCH     | PLNTHR
S7_SSN_MEAS       | S7SCH     | PLNTHR
SG_M3UA_CLU_MEAS | STSCH     | PLNTHR
(6 rows)
meas_admin completed successfully
```

Example

If `-e` option is specified without `-i` (interval), then user will be prompted for the collection interval.

Example

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```
# meas_admin -e M3UA
Enter interval (TRFC5, TRFC15, TRFC30, PLNTHR, or PLNT24), or Q to quit:
trfc30
BEGIN
UPDATE 6
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
UPDATE 1
COMMIT
Restart MEAS process
meas_admin completed successfully

# meas_admin -q
      ms_tbl       | proc_name | ms_intvl_v
-------------------+-----------+------------
MS_PERF_MEAS      | MEASMT    | TRFC30
MS_PROCESS_MEAS   | MEASMT    | TRFC30
S7_M3UASCCP_MEAS | S7SCH     | TRFC30
S7_SCCP_MEAS      | S7SCH     | TRFC30
S7_SSN_MEAS       | S7SCH     | TRFC30
SG_M3UA_CLU_MEAS | STSCH     | TRFC30
(6 rows)
meas_admin completed successfully
```

3.82.5 Change collection interval

Run **meas_admin** with *-i* option to change collection interval of the enabled measurements.

Example

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```
# meas_admin -i trfc5
UPDATE 6
Restart MEAS process
meas_admin completed successfully

# meas_admin -q
      ms_tbl      | proc_name | ms_intvl_v
------------------+-----------+------------
MS_PERF_MEAS      | MEASMT    | TRFC5
MS_PROCESS_MEAS   | MEASMT    | TRFC5
S7_M3UASCCP_MEAS | S7SCH     | TRFC5
S7_SCCP_MEAS      | S7SCH     | TRFC5
S7_SSN_MEAS       | S7SCH     | TRFC5
SG_M3UA_CLU_MEAS | STSCH     | TRFC5
(6 rows)
meas_admin completed successfully
```

3.82.6 Disable all measurements

Run **meas_admin** with *-d* option to disable all measurements.

Example

```
# meas_admin -d
UPDATE 6
Restart MEAS process
meas_admin completed successfully
# meas_admin -q
ms_tbl | proc_name | ms_intvl_v
--------+-----------+------------
(0 rows)
```

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4 MCAS Enterprise Setup

4.1 Overview

4.1.1 Purpose

This chapter provides an overview on setting up MCAS Enterprise. Certain sections are only for OSP while others are for both OSP and non-OSP.

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Setting up MCAS Enterprise

4.2 Prerequisites

4.2.1 Overview

The following are the prerequisites for this procedure:

1. Platform is already installed by the platform install tool successfully.
2. The following shared memory keys are not used by the hosting environment (for example, OSP or MAB):

   0x101, 0x10101,

   0x0000,

   0x1400, 0x14ff,

   0x600, 0x601,

   0x800, 0x802,

   0x0b00, 0x0b47,

   0x1e00, 0x1e10, 0x1e20, 0x1e30,

   0x3e00, 0x3e10, 0x3e20, 0x3e30,

   0x6500, 0x6510, 0x6520, 0x6530

   0x6700, 0x6710, 0x6720, 0x6730

   0x6780, 0x6790, 0x67a0, 0x67b0

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4.3 How to set up OSP for defining and starting MCAS

4.3.1 Before you begin

Perform the following steps before starting the platform:

a) Create the OSP Service Reference for Platform called *pfmmasss7*

b) Create the OSP SEP (Service Execution Process) group also called *pfmmasss7* under (a)

c) Create the OSP SEP for platform INIT under (b) called *masinit-${HOSTNAME}*

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4.4 How to setup OSP for defining and starting MCAS

4.4.1 Purpose

This section describes the procedure to create the OSP service reference *pfmmasss7* for platform.

4.4.2 Setting up OSP for defining and starting MCAS

Perform the following steps:

1

Login to the OSP as linus user.

2

Check and see if there is already a Service Reference created called "*pfmmasss7*"

sqlminus -Fn "SELECT RI FROM SERVICE WHERE NAME=*'pfmmasss7*"'

If it returns a value, that means the Service Reference *pfmmasss7* already exists.

However, the service partition for this $HOSTNAME may not exist. Do the following to check:

At the linus UNIX command line, type:

a.) tocScheduler ospprov

This gives a "TOC>" prompt.

b.) pfmconfig.parttion.display,id="0",serv_ref="pfmmasss7",smf_ref="PSMF",host_ref="$HOSTNAME";

If it returns

RETURNCOMMENT="PARTITION NOT FOUND"

then proceed to Step 4 and do only (4c), skipping (4a) and (4b), and go to Step 7. Otherwise, skip and jump to Step 7.

3

Check what Service ID can be used to create the *pfmmasss7* Service Reference.

```
sqlminus -Fn "SELECT MIN(RI) FROM (SELECT RI FROM F_SERVICE WHERE RI>9
MINUS SELECT RI FROM SERVICE WHERE GRP_BEP IS NOT NULL)"
```

Note down the returned value and use it in the SVID in the next step.

4

Create the OSP Service Reference *pfmmasss7* and a main a partition for it using the TOC command in a file *pfmmasss7_service.cfg*. The $HOSTNAME is to be replace by the hostname of the server host. (An example is also available from */vendorpackages/osp/OSP_toc_templates.txt* file).

a) `pfmconfig.service.create,DIST_RULE="",ACN="",ALMFILTR="",FILTER="",MAXACPU="",NAME="pfmmasss7",SMFSRV="",STATE="0",SVI D="<number from step 3>";`

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b) `pfmconfig.parttion.create,serv_ref="pfmmasss7",smf_ref="PSMF",id="0",state="0";`

c) `pfmconfig.parttion.create,serv_ref="pfmmasss7",host_ref="$HOSTNAME",id="0",state="0";`

Run the command:

`ptoc -v -h psmf < pfmmasss7_service.cfg`

Example output/response that will be seen:

```
ptoc : found a web server at localhost:80
ptoc : checking for SOAP server on host psmf ...
ptoc : found a SOAP server at psmf:8088
ptoc : checking for DPE server on host psmf ...
ptoc : found a DPE server at psmf:7341
ptoc : found pfmaccess server at psmf:20005
TOC>setMethodTimeout 2147483647
Done
TOC>pfmconfig.service.create,DIST_RULE="",ACN="",ALMFI
LTR="",FILTER="",MAXACPU="",NAME="pfmmasss7",SMFSRV=""
,STATE="0",SVID="10";
pfmconfig.service.create="0",RETURNCOMMENT="SERVICE
CREATED";
TOC>#
```

```
TOC>pfmconfig.parttion.create,serv_ref="pfmmasss7",smf
_ref="PSMF",id="0",state="0";
pfmconfig.parttion.create="0",RETURNCOMMENT="PARTITION
CREATED::PARTITION CREATED";
TOC>pfmconfig.parttion.create,serv_ref="pfmmasss7",hos
t_ref="t2000sa02",id="0",state="0";
pfmconfig.parttion.create="0",RETURNCOMMENT="PARTITION
CREATED::PARTITION CREATED";
ptoc: (0) Java RC : 0
```

5

Check if an SEP group *pfmmasss7* already exists.

sqlminus -Fn "SELECT RI FROM SEPGROUP WHERE NAME=*'pfmmasss7*'"

If it returns a value, it implies that the SEP group *pfmmasss7* already exists. In this case, skip to Step 7. Else continue with the steps below.

Create the SEP group *pfmmasss7* using the TOC command in a file *pfmmasss7_sepgroup.cfg.* (An example is also available from */vendorpackages/osp/OSP_toc_templates.txt* file).

`pfmconfig.sepgroup.create,name="pfmmasss7",remark="Service sepgroup for pfmmasss7",swov_flg="0",dom_rf="<PSMF>"`

Run the command:

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ptoc -v -h psmf < pfmmasss7_sepgroup.cfg

Example output/response that will be seen:

```
ptoc : found a web server at localhost:80
ptoc : checking for SOAP server on host psmf ...
ptoc : found a SOAP server at psmf:8088
ptoc : checking for DPE server on host psmf ...
ptoc : found a DPE server at psmf:7341
ptoc : found pfmaccess server at psmf:20005
TOC>setMethodTimeout 2147483647
Done
TOC>pfmconfig.sepgroup.create,name="pfmmasss7",remark=
"Service sepgroup for
pfmmasss7",swov_flg="0",dom_rf="<PSMF>";
pfmconfig.sepgroup.create="0",RETURNCOMMENT="SEPGROUP
CREATED";
ptoc: (0) Java RC : 0
```

6

Define Alarms for OSPSCH and OSPOAM using the TOC command file in */vendorpackages/ospoam/MASalarms.toc*

```
ptoc -v -h psmf < /vendorpackages/OSPOAM/MASalarms.toc > output.txt
```

grep for CREATED and UPDATED in *output.txt* and make sure there are total of 142. Some systems may only have CREATED and some may have both CREATED and UPDATED.

Example:

```
t2000sa02 linus> grep CREATED output.txt | wc -l
114
t2000sa02 linus> grep UPDATED output.txt | wc -l
28
```

7

Check if there exists an SEP *masinit-$HOSTNAME*, where $HOSTNAME is to be replaced by the hostname of the server.

```
sqlminus -Fn "SELECT RI FROM SEP WHERE NAME='masinit- $HOSTNAME'"
```

If it returns a value, that means the SEP *masinit-$HOSTNAME* already exists. In this case, jump to Step 9. Else, continue with the next step.

8

Create the SEP *masinit-$HOSTNAME* using the TOC command in a file masinit_sep.cfg. The *$HOSTNAME* is to be replaced by the hostname of the server. (An example is also available from */vendorpackages/osp/OSP_toc_templates.txt* file).

```
pfmconfig.sep.create,CPU="0",DEFCMD="",DEFMODE="n",EXENAME=
"/sn/init/initinittab",GNAME="in",GRPREF00="pfmmasss7",HOST_REF=
```

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```
"$HOSTNAME",ID="0",NAME="masinit-$HOSTNAME",N_DLGS="1000",PRIORITY=
"0",RATE="100",SERV_REF=" pfmmasss7",SMF_REF="",STATE="0",STOPCMD=
"/sn/init/init.sh stop",STOPMODE="y
s",STRTCMD="/sn/init/startupmas",STRTMODE="y
s",UNAME="root"
```

Run the command:

ptoc -v -h psmf < masinit_sep.cfg

Example output/response that will be seen:

```
ptoc : found a web server at localhost:80
ptoc : checking for SOAP server on host psmf ...
ptoc : found a SOAP server at psmf:8088
ptoc : checking for DPE server on host psmf ...
ptoc : found a DPE server at psmf:7341
ptoc : found pfmaccess server at psmf:20005
TOC>setMethodTimeout 2147483647
Done
```

```
TOC>pfmconfig.sep.create,CPU="0",DEFCMD="",DEFMODE="n"
,EXENAME="/sn/init/init
inittab",GNAME="in",GRPREF00="pfmmasss7",HOST_REF="t20
00sa02",ID="0",NAME="masinitt2000sa02",
N_DLGS="1000",PRIORITY="0",RATE="100",SERV_
REF="pfmmasss7",SMF_REF="",STATE="0",STOPCMD="/sn/init
/init.sh stop",STOPMODE="y s",
STRTCMD="/sn/init/startupmas",STRTMODE="y s",UNAME="root";
pfmconfig.sep.create="0",RETURNCOMMENT="SEP CREATED";
ptoc: (0) Java RC : 0
```

9

At this point, OSP sepmand should be starting platform SS7 in less than 1 minute. Check for platform processes. As root UNIX user, do:

a.) subshl

b.) op:init

c.) quit

Expected example output:

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```
mab7:/root-# subshl
USLI TERMINAL IN SERVICE.
< op:init; PF
+++ MAB7 2012-03-03 11:27:15 MAINT /IN036 #007445 as001 >
M OP INIT IN PROGRESS
PROCESS STATUS INFORMATION
PROC PID TYPE TMR STEP STATE RSTRT SOFTCHK NODE GQ
-------------- ----- ---- --- ---------- -------- ----- ------- ------ --
MSGH 11391 CC 90 STEADY RUNNING ALW ALW as001 NA
MHRPROC 11392 PC 30 STEADY RUNNING ALW ALW as001 NA
MHGDPROC1 11393 PC 30 STEADY RUNNING ALW ALW as001 NA
FTMOUNTER 11394 IC 900 STEADY RUNNING ALW ALW as001 NA
DBMON 11469 IC 90 STEADY RUNNING ALW ALW as001 NA
DBSYNC 11470 NC 90 STEADY RUNNING ALW ALW as001 Y
DBI 11471 IC 90 STEADY RUNNING ALW ALW as001 Y
DBIhprA 11472 IC 90 STEADY RUNNING ALW ALW as001 NA
DBIhprB 11473 IC 90 STEADY RUNNING ALW ALW as001 NA
CSOP 11474 NC 90 STEADY RUNNING ALW ALW as001 Y
AINETDB 11475 NC 180 STEADY RUNNING ALW ALW as001 NA
SNMPMON 11476 NC 90 STEADY RUNNING ALW ALW as001 NA
RCPERM 11477 NC 0 STEADY RUNNING ALW ALW as001 NA
RCDV 11478 NC 90 STEADY RUNNING ALW ALW as001 NA
SPMAN 11483 IC 60 STEADY RUNNING ALW ALW as001 Y
MEAS 11484 NC 90 STEADY RUNNING ALW ALW as001 Y
MEASMT 11485 NC 90 STEADY RUNNING ALW ALW as001 NA
SCHED 11486 NC 120 STEADY RUNNING ALW ALW as001 NA
MOFPROC 11487 NC 90 STEADY RUNNING ALW ALW as001 Y

END OF REPORT #007445++-
```

```
+++ MAB7 2012-03-03 11:27:15 MAINT /IN037 #007446 as001 >
M OP INIT IN PROGRESS
CURRENT SYSTEM RUN LEVEL: 100
CURRENT SYSTEM INIT STATE: NOINIT
SYSTEM SOFTCHK STATE: ALW
END OF REPORT #007446++-

+++ MAB7 2012-03-03 11:27:15 MAINT /IN038 #007447 as001 >
M OP INIT IN PROGRESS
```

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```
SYSTEM RESET HISTORY
START: Thu Feb 23 17:13:36 2012
FINISH: Thu Feb 23 17:13:50 2012
RECOVERY LEVEL: LVL 5 RUN LEVEL: 100 PROC COUNT: 23
SOURCE: IN_BOOT/"INIT" ERROR: 0
```

```
START: Wed Feb 29 15:16:18 2012
FINISH: Wed Feb 29 15:16:19 2012
RECOVERY LEVEL: LVL 4 RUN LEVEL: 100 PROC COUNT: 8
SOURCE: IN_RUNLVL/"" ERROR: 0
END OF REPORT #007447++-

+++ MAB7 2012-03-03 11:27:15 MAINT /IN005 #007448 as001 >
M OP INIT COMPLETED
END OF REPORT #007448++-
< quit;
mab7:/root-#
```

10

Setup of the backup directory for platform SS7 software. The default location is set to */BACKUP*, which may not exist in OSP. This has to be updated to a directory with a free space of 4 GB or more.

a.) Determine your backup location, e.g. */osp/backup*, and create a link for */BACKUP* to point to */osp/backup*

```
mab7:/root-# cd /
mab7:/-# ln -s /osp/backup /BACKUP
mab7:/-# ls -ld BACKUP
lrwxrwxrwx. 1 root root 11 Mar 3 11:50 BACKUP -> /osp/backup
mab7:/-#
```

END OF STEPS

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4.5 ITU Configuration

4.5.1 Purpose

This sections describes ITU configurationConfiguration by default Point code format is ANSI. To change the PC format to ITU, login as root to do it using the ChangeConfigDb ss7pc=ITU command.

4.5.2 Overview

```
mab7:/root-# ChangeConfigDb -d | grep ss7pc
ss7pc ANSI SS7 Pointcode Format.
mab7:/root-# ChangeConfigDb ss7pc=ITU
ChangeConfigDb: NOTE: BEGIN - Updating platform configuration. Fri Mar 16
11:01:08 CDT
2012
ChangeConfigDb: NOTE: Updating 0-0-0 configuration file on this node.
ChangeConfigDb: NOTE: Updating local file.
ChangeConfigDb: NOTE: COMPLETE - Updating platform configuration. Fri Mar
16 11:01:08 CDT
2012

Current platform configuration values are:
FIELD     VALUE     Description
----- ----- -----------
Release     R4.0     New install software release. Cannot be changed.
System     ENTERPRISE   Cannot be changed.
type      PILOT     Blade type. Pilot Blade.
Hardware    OTHER     Hardware type. Cannot be changed.
instype     field     Installation type. Should be "lab" or "field".
mu       0       Number of Media Units.
backup_dir   /BACKUP    Repository directory for file backup.
ss7pc     ITU SS7    Pointcode Format.
TSNodes     1       Number of Telecom Servers. This is a calculated
value.
ts0      0       Telecom Server 0 uses option 0
ss7gateway   YES      Is this an SS7 gateway node?
ASID      001
DNS_IP_Address0
Domain_Name
Nodename    mab7
```

To configure the ITU stack, the SS7 driver needs to load the ITU version, which can be checked using the **`ChangeConfigDb -d`** command, and ts0 field should be:

- 89 for M3UA, or
- 90 for M2PA (LINK CLASS is M2PA in form 3.2.2 INTERFACE CONTROLLER BOARD FORM), or

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- 91 for E1 low-speed links (LINK CLASS is MTP2E1) or high-speed links (LINK CLASS is MTP2AA).

If ts0 needs to be changed, use **ChangeConfigDb** command to change it (example: **ChangeConfigDb ts0=91**), followed by reloading SS7 driver packages with the RstS7Drivers command.

4.5.3 Follow these sequence of steps:

1

Check the current value of ts0

```
mab7:/root-# ChangeConfigDb -d | grep ts0
ts0 0 Telecom Server 0 uses option 0
```

2

If the current value of ts0 is not 0, execute the command below:

```
ChangeConfigDb ts0=0; RstS7Drivers
```

3

Change the ts0 value to the desired option and then execute RstS7Drivers command to load all required drivers packages and configuration scripts (e.g., hdc3.conf.x and qcx_conf.x files).

```
mab7:/root-# ChangeConfigDb ts0=91; RstS7Drivers
ChangeConfigDb: NOTE: BEGIN - Updating platform configuration. Fri Mar
16 12:06:02 CDT
2012
/opt/config/bin/ChangeConfigDb[1202]: settsoption[221]: [: argument
expected
ChangeConfigDb: NOTE: Updating 0-0-0 configuration file on this node.
ChangeConfigDb: NOTE: Updating local file.
ChangeConfigDb: NOTE: COMPLETE - Updating platform configuration. Fri
Mar 16 12:06:02 CDT
2012

Current platform configuration values are:
FIELD VALUE Description
----- ----- -----------
Release R4.0 New install software release. Cannot be changed.
System ENTERPRISE Cannot be changed.
type PILOT Blade type. Pilot Blade.
Hardware OTHER Hardware type. Cannot be changed.
instype field Installation type. Should be "lab" or "field".
mu 0 Number of Media Units.
backup_dir /BACKUP Repository directory for file backup.
ss7pc ITU SS7 Pointcode Format.
TSNodes 1 Number of Telecom Servers. This is a calculated value.
```


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```
            ts0 91 Telecom Server 0 uses option 91
            ss7gateway YES Is this an SS7 gateway node?
            ASID 001
            DNS_IP_Address0
            Domain_Name
            Nodename mab7
            RSTS7DRIVERS:mab7: STARTED @ 2012-03-16 12:06:02
            Installing SS7 drivers on mab7 with option tsuco-91.
            OPTION=91

Prepare to restore drivers. Please wait ...
RSTS7DRIVERS:mab7: IN PROGRESS @ 2012-03-16 12:06:07
UnInstalling option [tsuco-91]. It will take a while ...
Start uninstalling Adax SIGTRAN/SS7 packages for option=91

#######################################################
     Start uninstalling HDC package
#######################################################
hdcx0 Link encap:Ethernet HWaddr 00:07:10:37:07:C6
Remove hdc [adax-hdc-1.66-1.x86_64] by rpm.
There are user generated hdc3.conf.[0-7] configuration files
in /usr/net/Adax/hdc that were not removed by rpm. Backup the
hdc3.conf.[0-7] configuration files if needed. Remove these
files and any remaining empty directories (including empty
parent directories) to completely remove this product.
Leave these files in place if you intend to install adax-hdc
in the future and want to utilize the same HDC3 configuration.

#######################################################
     Start uninstalling QCX package
#######################################################
Remove qcx [adax-qcx-1.21-1.x86_64] by rpm.
There are user generated qcx_conf.[0-99] configuration files
in /usr/net/Adax/qcx that were not removed by rpm. Backup the
qcx_conf.[0-99] configuration files if needed. Remove these
files and any remaining empty directories (including empty
parent directories) to completely remove this product.
Leave these files in place if you intend to install adax-qcx
in the future and want to utilize the same QCX configuration.

#######################################################
     Start uninstalling AHOPN package
#######################################################




ADAX ah_open Installation for LINUX
```

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```
Copying files to /usr/net and /etc/rc.d/rc[2345].d...
Adax ah_open Installation was successful.

#######################################################
     Start installing QCX package
#######################################################


There are user generated qcx_conf.[0-99] configuration files
already present in /usr/net/Adax/qcx. They will be used to
configure QCX. Verify the content of the qcx_conf.[0-99]
files to ensure they meet your QCX configuration requirements.
See the /etc/init.d/qcx script commentary and QCX documentation
for more information.
Starting Adax QCX...

#######################################################
     Start installing HDC package
#######################################################


There are user generated hdc3.conf.[0-7] configuration files
already present in /usr/net/Adax/hdc. They will be used to configure
installed HDC3 boards (if any). Verify the content of the
hdc3.conf.[0-7] files to ensure they meet your HDC3 configuration
requirements. Refer to the HDC Programmer's Reference (hdc.dlpi.pdf)
for more information.
Starting Adax HDC...
RSTS7DRIVERS:mab7: IN PROGRESS @ 2012-03-16 12:06:36
Install of Option [tsuco-91] Successful.
RSTS7DRIVERS:mab7: COMPLETED @ 2012-03-16 12:06:36
```

END OF STEPS

NOTE:

1. Check to ensure that S7TSSCH and SCTPSCH are not running before executing `RstS7Drivers` with "`ps –ef | grep S7TSSCH`" and "`ps –ef | grep SCTPSCH`" commands. If running, Use CEP commands to inhibit them:

```
mab7:/root-# ps -ef | grep S7TSSCH
root 757 1978 0 12:22 ? 00:00:00 S7TSSCH
root 764 30702 0 12:22 pts/1 00:00:00 grep S7TSSCH
mab7:/root-# ps -ef | grep S7TSSCH | grep -v grep
root 757 1978 0 12:22 ? 00:00:00 S7TSSCH
mab7:/root-# ps -ef | grep SCTPSCH | grep -v grep
```


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```
root 2142 1978 0 Mar15 ? 00:00:29 SCTPSCH
mab7:/root-# subshl
USLI TERMINAL IN SERVICE.
< INH:RESTART,PROC=S7TSSCH,UCL; PF
+++ MAB7 2012-03-16 12:23:32 MAINT /IN005 #000083 as001 >
M INH RESTART PROC=S7TSSCH UCL COMPLETED
END OF REPORT #000083++-
< INIT:PROC=S7TSSCH,LEVEL=1,UCL; PF
+++ MAB7 2012-03-16 12:23:44 MAINT /IN014 #000085 as001 >
M INIT PROC=S7TSSCH LEVEL=1 UCL REQUEST SUCCESSFULLY ACKNOWLEDGED
END OF REPORT #000085++-
< INH:RESTART,PROC=SCTPSCH,UCL; PF
+++ MAB7 2012-03-16 12:23:56 MAINT /IN005 #000088 as001 >
M INH RESTART PROC=SCTPSCH UCL COMPLETED
END OF REPORT #000088++-
< INIT:PROC=SCTPSCH,LEVEL=1,UCL; PF
+++ MAB7 2012-03-16 12:25:08 MAINT /IN014 #000090 as001 >
M INIT PROC=SCTPSCH LEVEL=1 UCL REQUEST SUCCESSFULLY ACKNOWLEDGED
END OF REPORT #000090++-
< quit;
```

To bring the processes up and running again, execute the steps below:

```
mab7:/root-# subshl
USLI TERMINAL IN SERVICE.

< set:runlvl=100; PF
+++ MAB7 2012-03-16 12:29:10 MAINT /IN033 #000096 as001 >
M SET RUNLVL=100 COMPLETED FOR NEW SYSTEM RUN LEVEL 100, 2 PROCS STARTED
END OF REPORT #000096++-
< quit;
```

2. S7TSSCH is needed for SS7 E1 links. Check if S7TSSCH process comes on the */sn/init/initlist*. If not, use **`ConfigurePlatform`** command to add it to the initlist.

```
mab7:/root-# grep "msgh_name=S7TSSCH run" /sn/init/initlist

mab7:/root-# ConfigurePlatform initlist S7TSSCH run_lvl=81
path=/sn/s7sch/s7tssch priority=4 user_id=0 process_category=PC
sanity_timer=32 procinit_timer=3600 q_size=262144 on_active=YES

Your output was saved in the file: /sn/init/initlist

The official location(s) for this file is:
/sn/init/initlist
```

After S7TSSCH is added to the initlist, CEP command **`SET:RUNLVL=100`** can be used to bring it up and running.

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3. Running Adax SIGTRAN stack requires corresponding Adax SCTP driver licenses. If you plan to run a SIGTRAN stack, refer to Administering SIGTRAN Protocols chapter of *MCAS R3.1 System Administration Guide* document for the setupfinish stopping platform INIT.p and management of the license keys.

To purchase the keys, contact your product management."

Configure ITU related platform SS7 data

Follow the sequential steps below to configure ITU related platform SS7 data as suggested by the platform team.

1. `cd /opt/config/bin`
2. `./Setup ss7`
3. `cd /sn/db/config/mab7`
4. `ls s7sch*`

   `s7sch_config.sql` is now created as the template SQL for ITU format
5. Modify `7sch_config.sql` as necessary
   - Change `DIST_SS7` to "C" and update local PC, STP1 and STP2 in `PARAM_SCP` table entry as needed
   - Update `CLUSTER_NODE_ID` field value in `S7_CLUSTER_PARAM` table to assign correct SS7 cluster node ID to local node if required.

     INSERT INTO `S7_CLUSTER_PARAM VALUES('ABCDE','444','1','LL','N','N','P','0','0','0','0');`
   - Update `S7_LAN` table entry as needed
6. Read the SQL file into database using the command `psql –U scncraft`
7. Initialize S7SCH (and STSCH if M3UA or M2PA) with level 1.

Before you install the platform software, you can also use the following lines in the */osp/tmp/install/MASinstall/siteinfo* file to update the platform with ITU and option 91:

```
SI_SYSTEM_SS7FORMAT=ITU

SI_SYSTEM_TS0=91
```


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How to perform the Software Update of MCAS Platform Enterprise Install

4.6 Overview

4.6.1 Purpose

This section describes the procedure about how to perform the software update of MCAS Platform Enterprise Install.

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4.7 How to update the platform

4.7.1 Purpose

This section describes about how to perform the software update of MCAS platform enterprise install SS7 software.

4.7.2 Procedure

As root user, do the following:

1

Obtain the new platform *MasterDisk* and all thirdParty packages.

Download the new platform *MasterDisk.tar.gz* and all thirdParty.*.tar.gz file into the staging directory as defined by */root/MDtarDir*.

Example: */osp/tmp/install/MASinstall*

2

Ensure that the original *siteinfo* file is present and has content similar to that shown below:

```
SI_SYSTEM_TYPE=ENTERPRISE
SI_SYSTEM_INSTALLDIR=/osp/3rdpty/MCASsoftware
SI_SYSTEM_ASID_1=001,mab7,mab7,mab7
```

3

Check for the target platform backup directory. For example, */osp/backup*

The preceding steps have to be done after confirming that */osp/backup* is the pre-determined backup repository.

4

Backup the MCAS SS7 Software before upgrading.

Run the Platform Backup tool to backup the current Enterprise Installed platform.

a.) **/opt/config/bin/platdbadm -a backup**

```
mab7:/root-# /opt/config/bin/platdbadm -a backup
7897: old priority 0, new priority 5
platdbadm: NOTE: BEGIN
platdbadm: NOTE: 11:52:47 Executed by uid=0(root)
platdbadm: NOTE: 11:52:47 Backup platdb calling pg_dumpall
platdbadm: tar current configuration to /BACKUP/platdb/config.tar
platdbadm: START to backup data to /BACKUP/platdb.tgz
platdbadm: /bin/tar cfz /BACKUP/platdb.tgz
/osp/3rdpty/MCASsoftware/platdb /platdb /cs/snsps
```


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```
/BACKUP/platdb/platdb_backup.sql /BACKUP/platdb/config.tar
/bin/tar: Removing leading `/' from member names
/bin/tar: Removing leading `/' from hard link targets
platdbadm: tar data to /BACKUP/platdb.tgz completed
platdbadm: NOTE: 11:53:01 Backup platdb completed
platdbadm: NOTE: COMPLETE with SUCCESS
mab7:/root-#
mab7:/root-# cd /BACKUP
mab7:/BACKUP-# ls -ltr
total 39332
-rw-r--r--. 1 root root 40275749 Mar 3 11:53 platdb.tgz
mab7:/BACKUP-#
```

5

Save copies of the following files into the backup directory (example is */osp/backup*):

```
cd /osp/backup

mkdir savefiles

cd /sn/init

cp -rp initlist* /osp/backup/savefiles

cp -rp reboot /osp/backup/savefiles

cp -rp init.sh /osp/backup/savefiles

cd /sn/msgh

cp -rp msghosts /osp/backup/savefiles

cd /opt/config/data

cp -rp config_info /osp/backup/savefiles

cd /cs/sn/s7sch

cp -p __TID_IN_OUT_CFG__ /osp/backup/savefiles

cp -p __GTT_MAX_CFG__ /osp/backup/savefiles
```

6

After the backup of files are completed, shut down the Platform software.

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6 a.) For OSP

i) **`su - linus`**

ii) **`sepman -d stop`**

iii) **`sep -t masinit-$HOSTNAME`**

Note: Where $HOSTNAME is the hostname of the OSP server. Wait for the sepman -t to finish stopping MCAS INIT. After sepman -t is complete, ensure that the MCAS is not running anymore

iv.) **`exit`**

Note: Exit as **`linus`** and back to root user.

6 b) For non-OSP and OSP

Note: Ensure that the host does not restart MCAS and then perform the following:

i) **`/sn/init/init.sh stop`**

ii) **`ps -afe`**

Note: Ensure that no platform processing are running. For example, MSGH, MHRPROC, DBMON, DBI, and CSOP.

6 c)

Ensure that you backup the current platform SS7 Software before removing anything.

To backup the current Enterprise Installed MCAS, assuming that backup directory is located at */osp/backup* and the platform software is installed at */osp/3rdpty/MASsoftware*

a.) **`/osp/3rdpty`**

b.) **`tar -zcf /osp/backup/MASsoftware_old.tgz MASsoftware`**

7

Remove older progress markers so that platform enterprise install tool will only reinstall necessary items.

```
cd /opt/config/log
rm NIPROGRESS.InstallRelease
rm NIPROGRESS.Install3rdParty
rm NIPROGRESS.RstS7Drivers
cd $SI_SYSTEM_INSTALLDIR/MasterDisk
```

where **`$SI_SYSTEM_INSTALLDIR`** is the *siteinfo* parameter defined in Step 2.

```
rm NIPROGRESS.untar
cd $SI_SYSTEM_INSTALLDIR
rm -rf root/opt cs/sn platdb vendorpackages
rm -rf /tmp/psp/.NIPROGRESS.was_mounted
```

8

Run the platform enterprise install tool

a.) **`cd /root`**

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b.) **/root/preinstall**

c.) **/root/newinstall1**

d.) **/root/postinstall**

Wait until the tool finishes running.

9

Shutdown the platform in case it starts automatically:

```
/sn/init/init.sh stop
```

10

Restore PostgreSQL from backup:

a.) **. /u/ainet/.profile**

export PATH=/platdb/bin:$PATH

This defines the necessary shell environment variables

b.) **pgstart**

This starts up MCAS PostgreSQL

c.) **SNdropTable**

This deletes all default tables/data in PostgreSQL

Repopulate PostgreSQL from backup (assuming that the backup dir is /osp/backup)

d.) **. /u/ainet/.profile**

export PATH=/platdb/bin:$PATH

e.) **cd /**

From the platdb.tgz file, extract the *platdb_backup.sql* file

f.) **tar -xf /BACKUP/platdb.tgz BACKUP/platdb/platdb_backup.sql**

g.) **su - postgres**

h.) **. /u/ainet/.profile**

i.) **cd /BACKUP/platdb**

j.) **$PGHOME/bin/psql < platdb_backup.sql**

k.) **exit** (exit as postgres user and back to root user)

11

Restore the other files from backup

a.) **cd /osp/backup/savefiles**

b.) **cp -rp initlist* /sn/init**

c.) **cp -rp reboot /sn/init/reboot**

d.) **cp -rp init.sh /sn/init/init.sh**

e.) **cp -rp msghosts /sn/msgh/msghosts**

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f.) **cp -rp config_info /opt/config/data**

g.) **cp -p __TID_IN_OUT_CFG__ /cs/sn/s7sch**

h.) **cp -p __GTT_MAX_CFG__ /cs/sn/s7sch**

12

Start-up platform:

a.) **/sn/init/init.sh start**

Wait for platform to start up and monitor the PRMlogs

tailer PRM

13

When platform is up, check the platform processes and ensure that they are in the RUNNING state.

subshl

op:init

quit

At this point, if platform is up and running properly, then go to Step 14. Else if the platform is not up properly and if a decision is to be made to roll back to the previous release, see 4.8 “How to rollback to a previous platform version after upgrading” (p. 303) for details.

14

Note: This step is only for OSP.

Shutdown the platform and let OSP sepmand start it up.

a.) **/sn/init/init.sh stop**

Enter the following commands to start the OSP sepmand:

su - linus

sepman -d start

exit

Wait for platform to start up and monitor the PRMlogs:

tailer PRM

You should see similar outputs like the following example:

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```
+++ MAB7 2012-01-29 18:24:03 MAINT #999999
as000 LEAD >
***** REPT INITIALIZATION COMPLETE *****
START TIME: Sun Jan 29 18:23:52 2012
FINISH TIME: Sun Jan 29 18:24:03 2012
21 PROCS, SN_LV5, RUNLVL: 100, SOURCE:
IN_BOOT/"INIT", err: 0
```

15

When platform is up, check the platform processes and make sure that they are in RUNNING state

subshl

op:init

quit

At this point, if platform is up and running properly, then go to Step 16. Else if the platform is not up properly and if a decision is to be made to roll back to the previous release, see 4.8 “How to rollback to a previous platform version after upgrading” (p. 303) for details.

16

Do a backup of the platform SS7 Software after the successful upgrade.

To backup the current Enterprise Installed MCAS, assuming that backup directory is located at */osp/backup* and the MCAS software is installed at */osp/3rdpty/MASsoftware*

a.) **cd /osp/3rdpty**

b.) **tar -zcf /osp/backup/MASsoftware.tgz MASsoftware**

END OF STEPS

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4.8 How to rollback to a previous platform version after upgrading

4.8.1 Overview

This section describes the steps to rollback to a previous platform version in case of an unsuccessful/incomplete upgrade.

To rollback MCAS to the previous release, perform the following steps:

1

For OSP, stop OSP defence sepmand and stop the platform init SEP

```
su - linus
sepman -d stop
sepman -t masinit-$HOSTNAME
```

where $HOSTNAME is the hostname of the OSP server.

Wait for **`sepman -t`** to finish stopping platform INIT. After **`sepman -t`** is done, ensure platform is not running anymore

`Exit` (exit as linus and back to root user).

2

Note: Ensure that the host does not restart MCAS.

If the Platform is still running, shutdown manually.

```
/sn/init/init.sh stop
```

3

Delete the currently installed Platform software (assuming it is installed in */osp/3rdpty/MASsoftware*) and then unpack the previously backed up version from the *MASsoftware_old.tgz file* :

```
a.) cd /osp/3rdpty
b.) rm -rf MASsoftware
c.) tar -xvf /osp/backup/MASsoftware_old.tgz
```

4

Start up platform:

```
/sn/init/init.sh start
```

Wait for Platform to start up and monitor the PRMlogs

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```
tailer PRM
```

5

When platform is up, check the platform processes and make sure they are in RUNNING state:

```
subshl
op:init
quit
```

6

Note: This step is for only OSP.

Start up the OSP sepman:

```
su - linus
sepman -d start
exit
```

END OF STEPS

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4.9 Other Configuration

4.9.1 Tuning the platform startup time wait timer

Depending on your setup, the WAIT time in the startup script */sn/init/init.sh* may or may not be enough. You need to test with the intended server with the intended setup and check.

The platform default WAIT time is 120 seconds. If this is not sufficient, the WAIT time can be changed to a bigger value like 180 seconds or more.

4.9.2 To configure both or more nodes into an SS7 cluster

By default, both the nodes are not in same MSGH cluster and they are not able to communicate with each other.

In order for both nodes to be in the same MSGH cluster, update */sn/msgh/msghosts* on both nodes to an example listed below. Note that the *msghosts* file content must be the same for both nodes.

Ensure that `ospf101` and `ospf201` can ping each other with the designated MSGH network.

Add the following lines in both the clustered servers in the file */sn/msgh/msghosts*:

```
0 as000 ospf101 ospf101 ospf101
1 as001 ospf201 ospf201 ospf201
```

After this configuration change, all nodes listed in the *msghosts* file must be completely stopped (i.e. none of them has platform running) and then restarted.

4.9.3 Installation and Configuration of Adax HDC3 E1/T1 boards

Inhibit S7TSSCH process before installing SS7 drivers:

```
subshl
< INH:RESTART,PROC=S7TSSCH,UCL;
< INIT:PROC=S7TSSCH,LEVEL=1,UCL;
< QUIT;
```

1. **Install SS7 drivers**
   - Check ts0 value
     `ChangeConfigDb -d` (look for ts0 line in the output)
   - If the ts0 value is not 91, re-install all SS7 drivers
     i) `ChangeConfigDb ts0=0; RstS7Drivers`
     ii) `ChangeConfigDb ts0=91; RstS7Drivers`
   - Now verify all required SS7 drivers are installed.

Example:

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```
mab7:/root-# lsmod | grep streams
streams_hdcx 542779 1
streams 1136399 2 streams_hdcx
mab7:/root-# cd /usr/net/
mab7:/usr/net-# ls
Adax ah_open.a ah_open.conf Remove
mab7:/usr/net-# cd Adax
mab7:/usr/net/Adax-# ls
hdc LiS LiS-2.19.4 qcx
mab7:/usr/net/Adax-# ls LiS
README.rpm.txt streams-ip_to_dlpi.ko streams-ldl.ko streams-pipemod.ko
streamstimod.
ko
Remove streams.ko streams-mtdrv.ko streams-relay3.ko streamstirdwr.
ko
mab7:/usr/net/Adax-# ls qcx
copyright libqcxapi.a qcx_conf qcx_conf.0.atmii qcx_conf.2 qcxtest
Remove uanc.o
flash qcxapi.h qcx_conf.0 qcx_conf.0.hdc qcx_conf.3 README
uanc32.o
libqcxapi32.a qcxcheck qcx_conf.0.apcs qcx_conf.1 qcxpoll README.rpm
uanc.h
mab7:/usr/net/Adax-# ls hdc
copyright hdc3.conf.0 hdc3.conf.3 hdc_instances_example.conf hdcsaii
hdc_user.h README.rpm st_sread
flash hdc3.conf.1 hdc_cfgether.sh hdcppc3 hdctest hs_hdc
remove-hdc.sh
hdc3.conf hdc3.conf.2 hdcd hdcsa hdc_user.c
mtp2_user.h streams-hdcx.ko
```

2. **Bring S7TSSCH up**

```
subshl
< SET RUNLVL=100;
< QUIT;
```

Options for driver installation are below:-

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```
mab7:/u/ainet/ss7-# HELPME s7sch
HELPME: NOTE: This pilot is ACTIVE.
HELPME: Version 3.00
HELPME: NOTE: Running /opt/config/lib/helpme_s7sch ...
helpme_s7sch: NOTE: Dump out the SS7 configuration table and driver information
helpme_s7sch: to the /tmp/helpme_s7sch.out
helpme_s7sch: Note: Current mab7 config to use SS7 driver option 91
helpme_s7sch: Note: ***************** SS7 Driver Options ****************
helpme_s7sch: Note: * 89 if MAS with SS7 boardless SCTP *
helpme_s7sch: Note: * 90 if MAS with SS7 boardless SCTP/M2PA *
helpme_s7sch: Note: * 91 if MAS with SS7 HDC3 boards for MTP2E1/MTP2AA *
helpme_s7sch: Note: * 92 if MAS with SS7 HDC3 boards for MTP2T1 *
helpme_s7sch: Note: * 97 if MAS with SS7 HDC3 boards for E1/ATM *
helpme_s7sch: Note: * 98 if MAS with SS7 HDC3 boards for T1/ATM *
helpme_s7sch: Note: ***************************************************
```

```
helpme_s7sch: ********* POTENTIAL PROBLEM(S) FOUND *****************
helpme_s7sch: WARNING: NO S7_BOARD OBJECT DEFINED in mab7
helpme_s7sch: WARNING: NO S7_LINK OBJECT DEFINED in mab7
helpme_s7sch: WARNING: NO S7_LINKSET OBJECT DEFINED in mab7
helpme_s7sch: WARNING: NO S7_RPI OBJECT DEFINED in mab7
helpme_s7sch: WARNING: NO S7_POINTCODE OBJECT DEFINED in mab7
helpme_s7sch: Note: chkMultiProc: DIST_SS7 configuration Mode is C
helpme_s7sch: WARNING: NO Non-zero MX_SSN DEFINED in mab7
helpme_s7sch: WARNING: NO port number MX_IP_CONFIG DEFINED in mab7
helpme_s7sch: OBSERVED: Local node has release version REL-29:SU0300, with
following MAS
upgrade history:
cat: /cs/sn/release/HISTORY: No such file or directory
helpme_s7sch: ********* END OF POTENTIAL PROBLEM FOUND ***********
HELPME: NOTE: /opt/config/lib/helpme_s7sch COMPLETED successfully.
```

Following are the options for the Links (that is, options for OP:SLK=):

MTP2AA requests a list of Message Transfer Part level 2 Clear Channel E1 SS7 links.

MTP2E1 requests a list of Message Transfer Part level 2 Channelized E1 SS7 links.

MTP2T1 requests a list of Message Transfer Part level 2 Channelized T1 SS7 links.

SAAL requests a list of all SS7/ATM (high speed links).

M2PA requests a list of SS7 links for MTP2 Peer-to-Peer User Adaptation Layer.

LOCAL requests a list of all SS7 links in the local SS7 node.

To update the drivers:

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User should not usually have to manually update the driver packages. If there is any unusual circumstance that requires a manual update, the following example demonstrates how it can be done.

1) Put the drivers in the directory

```
cd /osp/tmp/install/MASinstall/


mab7:/osp/tmp/install/MASinstall-# ls –l adax*
-rw-r----- 1 root root 406056 Mar 14 14:41 adax-hdc.rpm

mab7:/osp/tmp/install/MASinstall-# ifconfig -a | grep hdcx
hdcx0 Link encap:Ethernet HWaddr 00:07:10:39:03:9E
hdcx2 Link encap:Ethernet HWaddr 00:07:10:39:02:E8

mab7:/osp/tmp/install/MASinstall-# ifconfig hdcx0 down
mab7:/osp/tmp/install/MASinstall-# ifconfig hdcx2 down

mab7:/osp/tmp/install/MASinstall-# rpm -e adax-hdc
```

```
There are user generated hdc3.conf.[0-7] configuration files
in /usr/net/Adax/hdc that were not removed by rpm. Backup the
hdc3.conf.[0-7] configuration files if needed. Remove these
files and any remaining empty directories (including empty
parent directories) to completely remove this product.
Leave these files in place if you intend to install adax-hdc
in the future and want to utilize the same HDC3 configuration.

mab7:/osp/tmp/install/MASinstall-# rpm -i adax-hdc.rpm
```

```
There are user generated hdc3.conf.[0-7] configuration files
already present in /usr/net/Adax/hdc. They will be used to configure
installed HDC3 boards (if any). Verify the content of the
hdc3.conf.[0-7] files to ensure they meet your HDC3 configuration
requirements. Refer to the HDC Programmer's Reference (hdc.dlpi.pdf)
for more information.
```

Configure the HDC3 board ports for either HDLC Operation By default HDC3 board ports are configured for HDLC/TMA operation. The user shouldn’t have to manually do anything since RstS7Drivers command will load correct configuration files if the ts0 option is chosen correctly (i.e., 91 for E1 channelized links and clear channel links).

Configuration file:

/usr/net/Adax/hdc/hdc3.conf.x

Where x=0,1,2,3

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```
ospf201 root# cat /usr/net/Adax/hdc/hdc3.conf.0

/*****Configuartion file for board 0*****
*****Edit this file according to the Requirement*****/

trunk_type E1
port 0 HDLC
port 1 HDLC
port 2 HDLC
port 3 HDLC
port 0B HDLC
port 1B HDLC
port 2B HDLC
port 3B HDLC
```

```
# cat /usr/net/Adax/hdc/hdc3.conf.1
/*****Configuartion file for board 1*****
*****Edit this file according to the Requirement*****/

If desired, /usr/net/Adax/hdc/hdc_instances.conf allows the user to modify the
instance number of each board installed in the system. The user defined
instance number is used to map a port number to a particular board. Port
numbers 0 through 3 (and 0B through 3B on HDC3 boards) are mapped to user
instance 0, port numbers 4 through 7 are mapped to user instance 1, etc.
The format of this file is as follows:
serial <board serial number> instance <user instance number>
```

```
# cat hdc_instances.conf
/*********Modify this file for Serial number of Card**********/
serial 1012 instance 0
serial 954 instance 1
```

This file is read whenever the hdcd daemon is run and will configure all of the boards installed in the system.

```
#/usr/net/Adax/hdc/hdcd -b 0
#/usr/net/Adax/hdc/hdcd -b 1
```

By default HDC3 board ports are configured for HDLC/TMA operation. If you intend to utilize HDC3 boards for ATM cell operation you must setup this configuration file such that the desired HDC3 ports are configured for ATM cell operation. This, together with related qcx_conf.x and related Adax driver packages, can be configured using RstS7Drivers with ts0 option 97 for E1/ATM or 98 for T1/ATM.

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Miscellaneous information

4.10 Overview

4.10.1 Purpose

Use this section to perform any additional setups required as per your use of the SS7 stack.

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4.11 How to tune the msg_limit of the S7SCH processes

4.11.1 Before you begin

Ensure that:

- Your host and SS7 stack are set up.
- SS7 stack is stopped and is not running.

4.11.2 Procedure

1

Edit the */sn/init/initlist* file.

2

Search for all the uncommented S7SCH, S7SCH0, S7SCH1, S7SCH2, S7SCH3 processes in the *initlist* file.

3

Change the default *msg_limit= 300* to a larger value as required for testing.

For example, change the *msg_limit = 300* line for the respective uncommented S7SCHx processes to *msg_limit = 1000*

4

Start the SS7 stack.

The new message limit takes affect.

End of steps

4.11.3 Example: Changing the original msg_limit from 300 to 1000

Before the change

```
#--Multiple S7SCH processes
msgh_name=S7SCH0 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=300

#
msgh_name=S7SCH1 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=300

#
msgh_name=S7SCH2 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
```


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```
msg_limit=300

#
msgh_name=S7SCH3 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=300
```

After the change

```
#--Multiple S7SCH processes
msgh_name=S7SCH0 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=1000

#
msgh_name=S7SCH1 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=1000

#
msgh_name=S7SCH2 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=1000

#
msgh_name=S7SCH3 run_lvl=80 path=/sn/s7sch/s7sch user_id=0
priority=4 sanity_timer=32 process_category=PC q_size=500000
msg_limit=1000
```

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OSPSCH configuration

4.12 Overview

4.12.1 Purpose

Note: This OSPSCH section applies only to OSP.

OSPSCH is one of the fundamental components in Platform OSP SS7 stack integration project. It provides TCAP functionalities for the SEP applications in OSP platform, both for ITU TCAP and ANSI TCAP. And it also provides SEP applications interfaces of transferring SCCP Class 0 and Class 1 messages.

OSPSCH supports both single node mode and cluster mode.

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4.13 Procedure to configure OSPSCH

4.13.1 Before you being

Note: This OSPSCH section applies only to OSP.

Platform and OSP platform are already setup and running successfully.

In Default, 16 OSPSCH processes (OSPSCH01 – OSPSCH16) will be installed after platform installation. This number can be expanded to 32. See 4.13.3 “How to add more OSPSCH processes” (p. 319).

4.13.2 Procedure to configure OSPSCH

1

Enable SPMAN non-SPA routing, then initialize SPMAN

1. Login to the platform as ainet
2. psql -U scncraft
3. update param_platform set nonspa_routing='Y';
4. exit from psql
5. subshl
6. init:proc=SPMAN,level=1,ucl;

2

Create SEP ID for OSPSCHs

Note: SEP ID has to be created for each OSPSCH process.

An example for OSPSCH01 as below:

a. Login to the OSP as linus

b. Put below TOC command in a file *ospsch_sep.cfg*. The **$HOSTNAME** is to be replaced by the hostname of server.

```
pfmconfig.sep.create,CPU="0",DEFCMD="",DEFMODE="n",EXENAME="OSPSCH01",GNAME="in",

GRPREF00="pfmmasss7",HOST_REF="$HOSTNAME",ID="0",
NAME="OSPSCH01-$HOSTNAME",N_DLGS="3000",PRIORITY="0",
RATE="100",SERV_REF="pfmmasss7",SMF_REF="",STATE="0",STOPCMD="",
STOPMODE="y s",
STRTCMD="",STRTMODE="y s",UNAME="root"
```

Note: Above parameters are used by some general OSPSCH testing. Check carefully to make sure it is suitable in your machine. If you need to learn more about these parameters, contact OSP team.

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Note: OSPSCH <id eg. 01,02,03...> processes name are required to be mentioned in EXENAME during creation of SEPs.

c. Run the command:

ptoc -v -h psmf < ospsch_sep.cfg

Example output/response from that will be seen:

```
ptoc : found a web server at localhost:80
ptoc : checking for SOAP server on host psmf ...
ptoc : found a SOAP server at psmf:8088
ptoc : checking for DPE server on host psmf ...
ptoc : found a DPE server at psmf:7341
ptoc : found pfmaccess server at psmf:20005
TOC>setMethodTimeout 2147483647
Done
TOC>pfmconfig.sep.create,CPU="0",DEFCMD="",DEFMODE="n",EXENAME="
",GNAME="in",
GRPREF00="pfmmasss7",HOST_REF="t2000sa01",ID="0",NAME=
"OSPSCH01-t2000sa01",
N_DLGS="3000",PRIORITY="0",RATE="100",SERV_REF="pfmmasss7",SMF_REF=
"",STATE="0",
STOPCMD="",STOPMODE="y s",STRTCMD="",STRTMODE="y s",UNAME="root";
pfmconfig.sep.create="0",RETURNCOMMENT="SEP CREATED";

ptoc: (0) Java RC : 0
```

d. Run the command. The $HOSTNAME is to be replaced by the hostname of server.

```
sqlminus -Fn "select ri from sep where name='OSPSCH01-$HOSTNAME'"
```

Return value is SEP ID of OSPSCH01, it will be used in Step 3.

e. Repeat above steps to create SEP ID for other OSPSCH processes.

3

Provision SEP IDs in platform RCV menu

a. Login to the platform as ainet

b. subshl

c. rcv:menu

d. select 20, then select 1

e. select “i” to create

You would see a screen like this:

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```
Screen 1 of 1
                      OSPSCH REFERENCE ID FORM

*>  1. PROC_NAME          _________
    2. REFERENCE ID       0
```

f. In this form, input OSPSCH process name and corresponding sep id.

```
Screen 1 of 1
                      OSPSCH REFERENCE ID FORM

*>  1. PROC_NAME          OSPSCH01
    2. REFERENCE ID       56      <== generated in step 1)
```

g. Insert this form.

h. Repeat above steps to other OSPSCH processes.

4

Set SCCP type for OSPSCH

a. Login to the Platform as ainet

b. subshl

c. rcv:menu

d. select 20, then 3

e. select “qu” to update

You would see a screen like this:

```
*>  1. CARGO TIMER                0
    2. SCCP TYPE                  ANSI   <== SCCP type
    3. MEASUREMENT INTERVAL       TRFC1
    4. DESTINATION BLACK LIST     FALSE
    5. SSN POLL PERIOD            0
    6. DIAL ALARM PC              75
    7. CONGESTION LEVEL1 RATE     100
    8. CONGESTION LEVEL2 RATE     200
    9. CONGESTION LEVEL3 RATE     300
    10. MAX ALLOWED DIAL NUMBER   1000
    11. HOP COUNTER FLAG          FALSE
    12. IMPORTANCE FLAG           FALSE
```

f. Change field “2. SCCP TYPE” according to your network configuration.

g. Use “update” to save your change.

h. Quit RCV menu.

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5

Initialize all OSPSCH processes to activate these changes

a. Login to the Platform as ainet

b. subshl

c. init:proc=OSPSCH01,level=1,ucl;

You would see the output like this:

```
< init:proc=OSPSCH01,level=1,ucl; PF
   +++ T2000SA02 2010-08-19 02:52:24 MAINT /IN014 #000102 as000 LEAD
>
M  INIT PROC=OSPSCH01 LEVEL=1 UCL REQUEST SUCCESSFULLY ACKNOWLEDGED
   END OF REPORT #000102++-
```

d. do initialization for other OSPSCH process,

```
          init:proc=OSPSCH02,level=1,ucl;
          init:proc=OSPSCH03,level=1,ucl;
       … …
```

6

Provision local SSN in Platform as below

a. Login to the Platform as ainet

b. subshl

c. rcv:menu

d. select 3, then 1, then 1

e. select “i” to create. You would see a screen like:

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```
Screen 1 of 1
                        SUBSYSTEM NUMBER FORM

*>  1. LOCAL SUBSYSTEM NUMBER                ___
    2. MATE SUBSYSTEM NUMBER                 ___
       MATE POINT CODE:
            3. NETWORK IDENTITY              0
            4. CLUSTER IDENTITY              0
            5. MEMBER IDENTITY               0
    6. PROTOCOL TYPE                         AIN0.0
    7. ROUTING TYPE                          RK
    8. ACG OVERLOAD CONTROL                  NONE
    9. ACG DIGIT CODE                        10
   10. TRANSACTION RESPONSE TIMER            0
   11. MULTIPLE PROTOCOL DISCRIMINATOR       NONE
```

i. Input correct value for 1, 2, 6, 7

Field 1&2 : ssn value used.

Field 6 : “AIN0.0” for ANSI tcap, “GSMMAP” for ITU tcap, “SCCP01” for sccp01 message.

Field 7 : input “SSN”

```
*>  1. LOCAL SUBSYSTEM NUMBER                243  <== SSN
    2. MATE SUBSYSTEM NUMBER                 243  <== SSN
       MATE POINT CODE:
            3. NETWORK IDENTITY              0
            4. CLUSTER IDENTITY              0
            5. MEMBER IDENTITY               0
    6. PROTOCOL TYPE                         AIN0.0
    7. ROUTING TYPE                          SSN
    8. ACG OVERLOAD CONTROL                  NONE
    9. ACG DIGIT CODE                        10
   10. TRANSACTION RESPONSE TIMER            0
   11. MULTIPLE PROTOCOL DISCRIMINATOR       NONE
```

j. Select “i” to insert this form.

k.Press “<”,”<”,”<” to back to main menu.

l. Select 20, then 2, select “i” to insert

You would see a screen like this:

Change items to correct value.

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```
Screen 1 of 1
                                OSPSCH SSN FORM

*>  1. SSN                                243  <== SSN
    2. TRANSACTION TIMER                  4
    3. TCAP TYPE FOR UNI_MSG              ANSI <== TCAP TYPE
```

m. Insert this form.

n. Quit RCV menu

7

Check status of SSN you have provisioned

a. Login to the Platform as ainet

b. subshl

c. op:status,ssn=243;

You should see similar outputs like the following example:

```
      SSN          SSN STATE
   ---------     -----------
      243             IS
```

8

The procedure is complete. The OSPSCH should be able to send/receive messages now.

End of steps

4.13.3 How to add more OSPSCH processes

1

Login in as ainet.

2

Edit file */sn/init/initlist* to add new lines in the end of the file.

An example show what should be added for a new process OSPSCH17.

```
#--OSPSCH17
msgh_name=OSPSCH17 run_lvl=81 sanity_timer=200
process_category=NC user_id=0 q_size=500000
msg_limit=300 path=/vendorpackages/OSPSCH/OSPSCH.start
```

Save this file and exit.

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3

subshl

4

set:runlvl=100;

5

create and provision SEP id for this new OSPSCH process.

6

initialization this new OSPSCH process

```
init:proc=OSPSCH17,level=1,ucl;
```

End of steps

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5 Installation and replacement of Adax LPe and PCIe HDC3 boards on HP ProLiant DL380 Gx rack servers

5.1 Overview

5.1.1 Purpose

This chapter provides the procedures for installing and replacing the Adax LPe and PCIe HDC3 boards on HP ProLiant DL380 Gx rack servers.

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Adax board installation and replacement

5.2 Overview

5.2.1 Purpose

Use the procedures in this section to install or replace the Adax LPe and PCIe HDC3 boards on the HP server.

5.2.2 Contents

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5.3 How to install or replace the Adax LPe and PCIe HDC3 boards on HP ProLiant DL380 Gx rack servers

5.3.1 Before you begin

Ensure that the tool T-10/T-15 Torx screwdriver is available.

To access the components and perform certain service procedures, perform the steps required from the following list:

- Shut down MCAS platform software. For information, see 5.3.2 "How to shut down MCAS platform software" (p. 323).
- Power down the server. For information, see 5.3.5 "How to power down the server" (p. 325).
- Extend the server from the rack. For information, see 5.3.6 "How to extend the server from the rack" (p. 325).
  If you are performing service procedures in a rack cabinet, use the locking feature of the rack rails to support the server and gain access to internal components.
  For more information about Telco rack solutions, see RackSolutions.com website (http://www.racksolutions.com/hp).
- Remove the server from the rack. For information, see 5.3.7 "How to remove the server from the rack" (p. 327).
  If the rack environment, cabling configuration, or the server location in the rack creates difficult conditions, remove the server from the rack.

5.3.2 How to shut down MCAS platform software

Perform the following steps to shut down the MCAS platform software:

1

Back up the server data.

2

Enter **`subshl`** at the command prompt.

3

Enter **`RMV:SS7NODE,UCL`** MCAS CEP command to remove all the SS7 links to MOOS (Manually Out Of Service, that is, INACTIVE or UNAVAILABLE state) and isolate the link services of the local node.

4

Enter **`quit`** to quit the **subshl** session.

5

Enter **`su - linus`**

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6

Enter **sepman –d stop**

7

Enter **sepman –t masinit-$HOSTNAME**

$HOSTNAME is the OSP server hostname.

Wait until the **sepman –t** executes and stops the MCAS INIT. Check and ensure that MCAS is not running.

8

Enter **exit**

Exit as **linus** and be a root user.

9

Enter **/sn/init/init.sh stop**

10

Enter **ps –afe**

Note: Ensure that the platform processes (for example, /sn/init/init, MSGH, MHRPROC, DBMON, DBI, CSOP, S7SCH, S7TSSCH) are not running.

End of steps

5.3.3 How to stop the DPE traffic on the FEP server

Use the "Stop traffic" method of **pfmconfig.host** object to stop the DPE traffic on the FEP server.

The host changes to “stop traffic” state and the hosts SEPs does not receive any new calls.

5.3.4 How to stop all the OSP platform processes on FEP

Perform the following steps to stop all the OSP platform processes:

1

Enter **su – linus** at the command prompt.

2

Enter **sepman –d stop**

3

Enter **sepman –T** to stop all the OSP platform processes.

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4

Enter **`exit`** to exit as **linus** user and be a root user.

END OF STEPS

5.3.5 How to power down the server

Perform the following steps to power down the server:

1

Warning: To reduce the risk of personal injury, electric shock, or damage to the equipment, remove the power cord to disconnect power from the server. The front panel Power On/Standby button does not shut off system power. Portions of the power supply and internal circuitry remains active until the AC power is removed

Back up the server data.

2

Shut down the platform software. For information, see 5.3.2 “How to shut down MCAS platform software” (p. 323).

3

Shut down the OS as per the OS documentation.

Note: If the server in a standby mode, omit **Step 4** and perform **Step 5**.

4

Press the **`Power On/Standby`** button to change the server status to a Standby mode.

When the server is in the Standby power mode, the system power LED light color changes to Amber.

If the UID button is on, then it illuminates the blue UID LEDs on the front and rear panels. In a rack environment, this feature facilitates locating a server when moving between the front and rear of the rack.

5

Disconnect the power cords.

The system powers down.

END OF STEPS

5.3.6 How to extend the server from the rack

Perform the following steps to extend the server from the rack:

1

Pull down the quick release levers on each side of the server.

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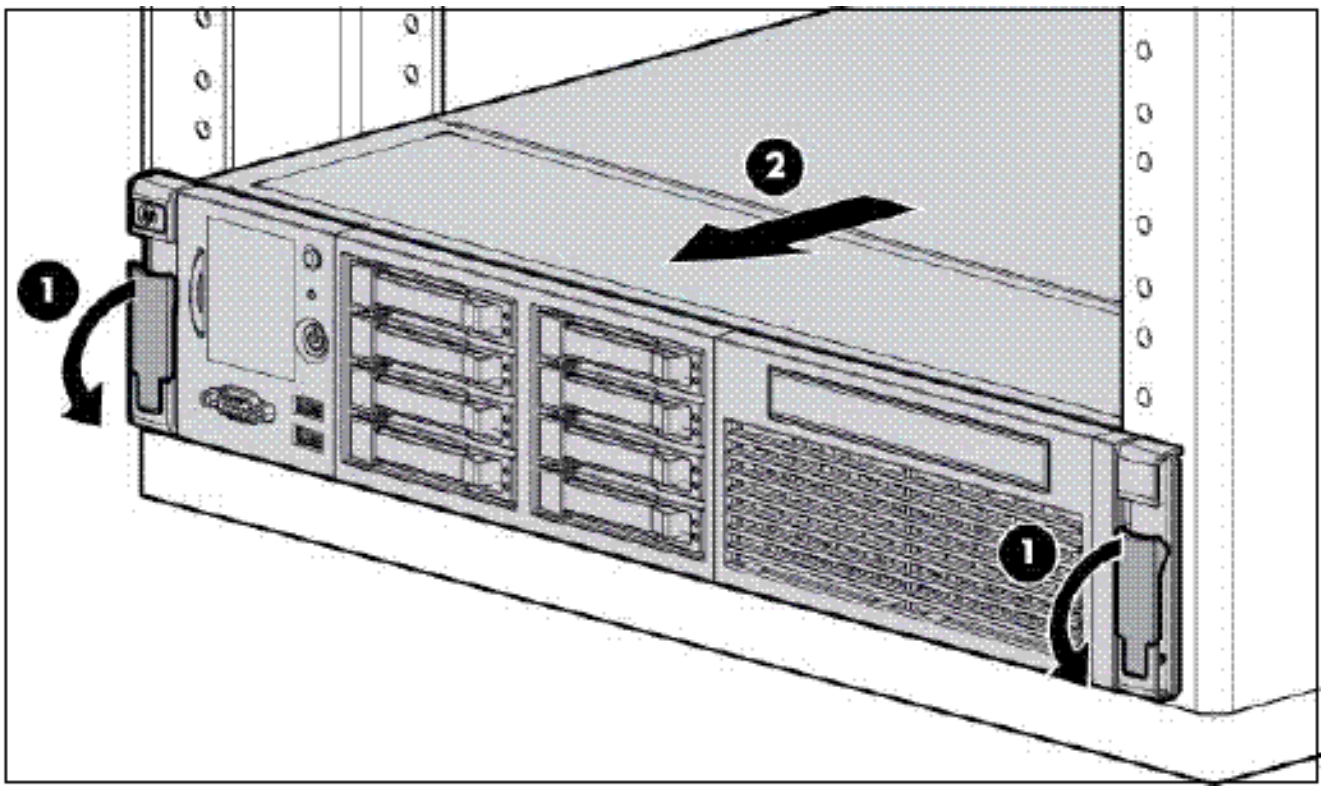
2

Warning: To reduce the risk of personal injury or equipment damage, ensure that the rack is adequately stabilized before extending a component from the rack.

Extend the server from the rack.

Figure 5-1 Extending server from the rack



3

Warning: To reduce the risk of personal injury and avoid sliding rails pinching the fingers, be careful when pressing the server rail-release latches and sliding the server into the rack.

After performing the installation or maintenance procedure, slide the server back into the rack. Press the server firmly into the rack to secure it in place.

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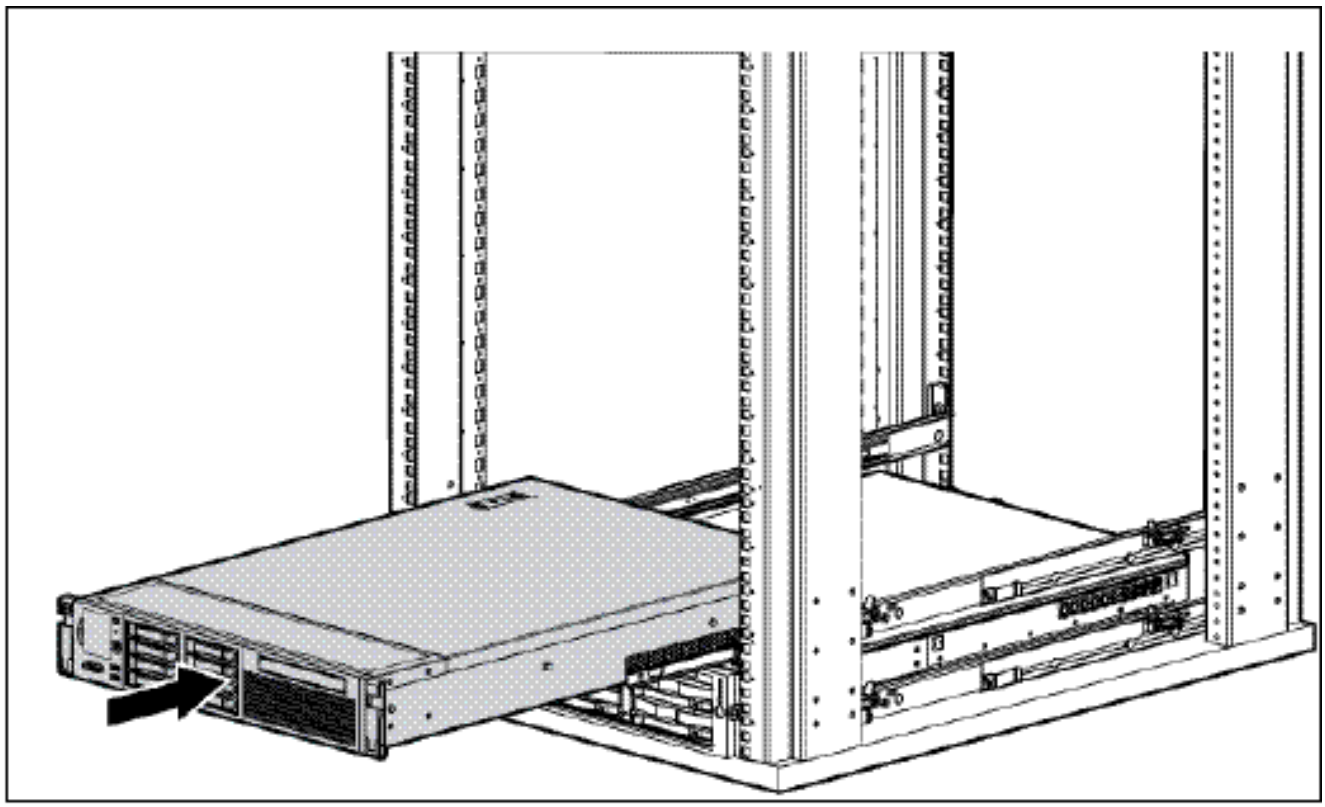
Figure 5-2 Sliding server into the rack



End of steps

5.3.7 How to remove the server from the rack

Perform the following steps to remove the server from the rack:

1

Shut down MCAS platform software. For information, see 5.3.2 “How to shut down MCAS platform software” (p. 323).

2

Power down the server. For information, see 5.3.5 “How to power down the server” (p. 325).

3

Extend the server from the rack. For information, see 5.3.6 “How to extend the server from the rack” (p. 325).

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4

Disconnect the cables and remove the server from the rack.

Note: For information, see the documentation shipped with the rack mounting option. Label all the cables and their connecting positions as they are required when installing the server back.

5

Place the server on a sturdy and leveled surface.

END OF STEPS

5.3.8 How to remove the access panel

Perform the following steps to remove the access panel:

1

Warning: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

Caution: For proper cooling do not operate the server without the access panel, baffles, expansion slot covers, or blanks installed.

Shut down MCAS platform software. For information, see 5.3.2 “How to shut down MCAS platform software” (p. 323).

2

Power down the server. For information, see 5.3.5 “How to power down the server” (p. 325).

3

Extend the server from the rack. For information, see 5.3.6 “How to extend the server from the rack” (p. 325).

4

Use the T-15 Torx screwdriver to loosen the security screw on the hood latch.

The screwdriver is attached at the rear of the server.

5

Lift the hood latch handle and then remove the access panel.

END OF STEPS

5.3.9 How to remove the PCI riser cage

Perform the following steps to remove the PCI riser cage:

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1

Warning: To prevent damage to the server or expansion board, power down the server and remove all the AC power cords before removing or installing the PCI riser cage.

Shut down MCAS platform software. For information, see 5.3.2 “How to shut down MCAS platform software” (p. 323).

2

Power down the server. For information, see 5.3.5 “How to power down the server” (p. 325).

3

Extend the server from the rack. For information, see 5.3.6 “How to extend the server from the rack” (p. 325).

4

Use the T-15 Torx screwdriver to loosen the security screw on the hood latch.

The screwdriver is attached at the rear of the server.

5

Lift the hood latch handle and then remove the access panel.

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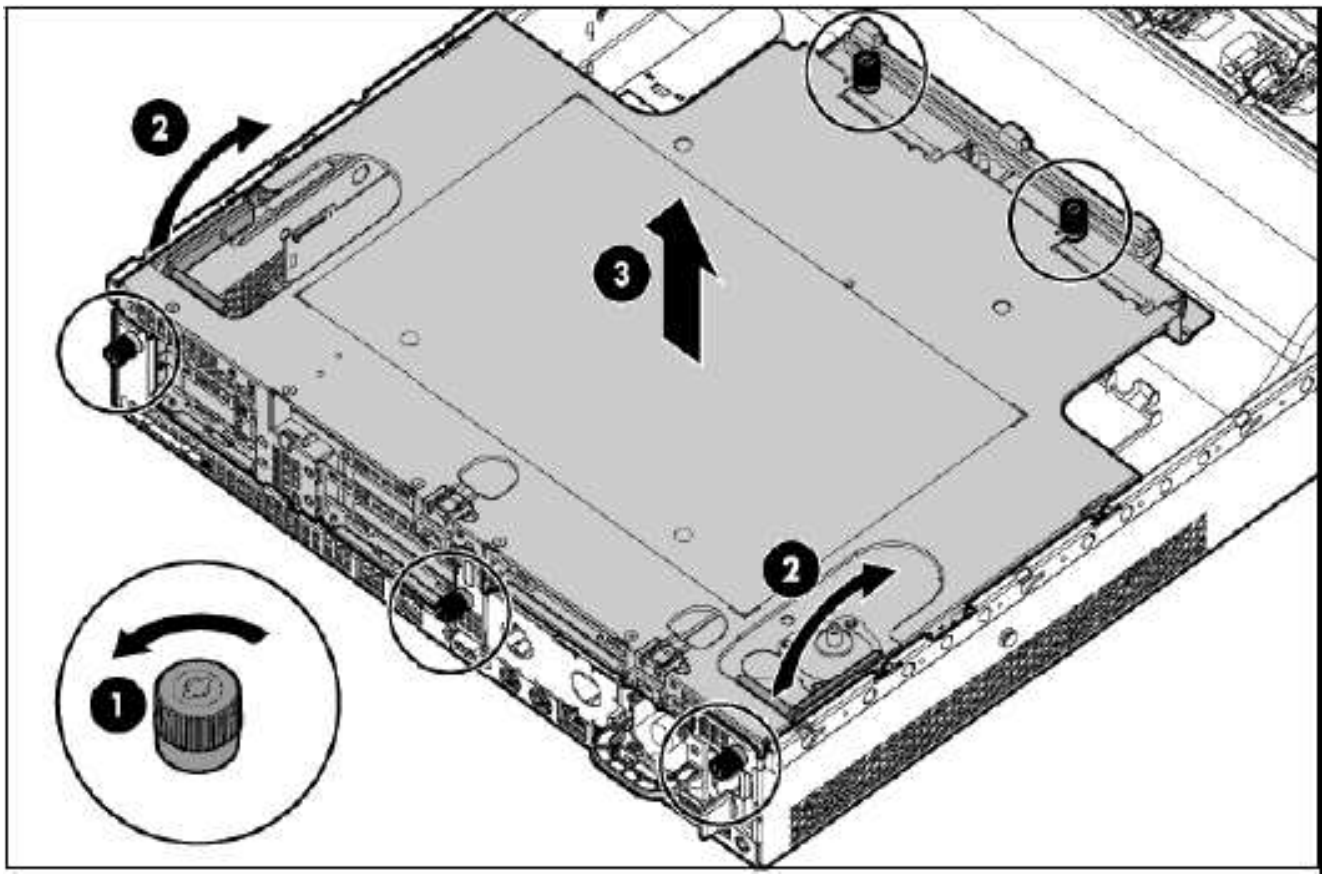
Figure 5-3 Removing access panel



END OF STEPS

5.3.10 How to remove the slot cover from a half-length expansion slot

Perform the following steps to remove the slot cover from a half-length expansion slot:

1

Power down the server. For information, see 5.3.5 “How to power down the server” (p. 325).

2

Extend the server from the rack. For information, see 5.3.6 “How to extend the server from the rack” (p. 325).

3

Remove the access panel. For information, see 5.3.8 “How to remove the access panel” (p. 328).

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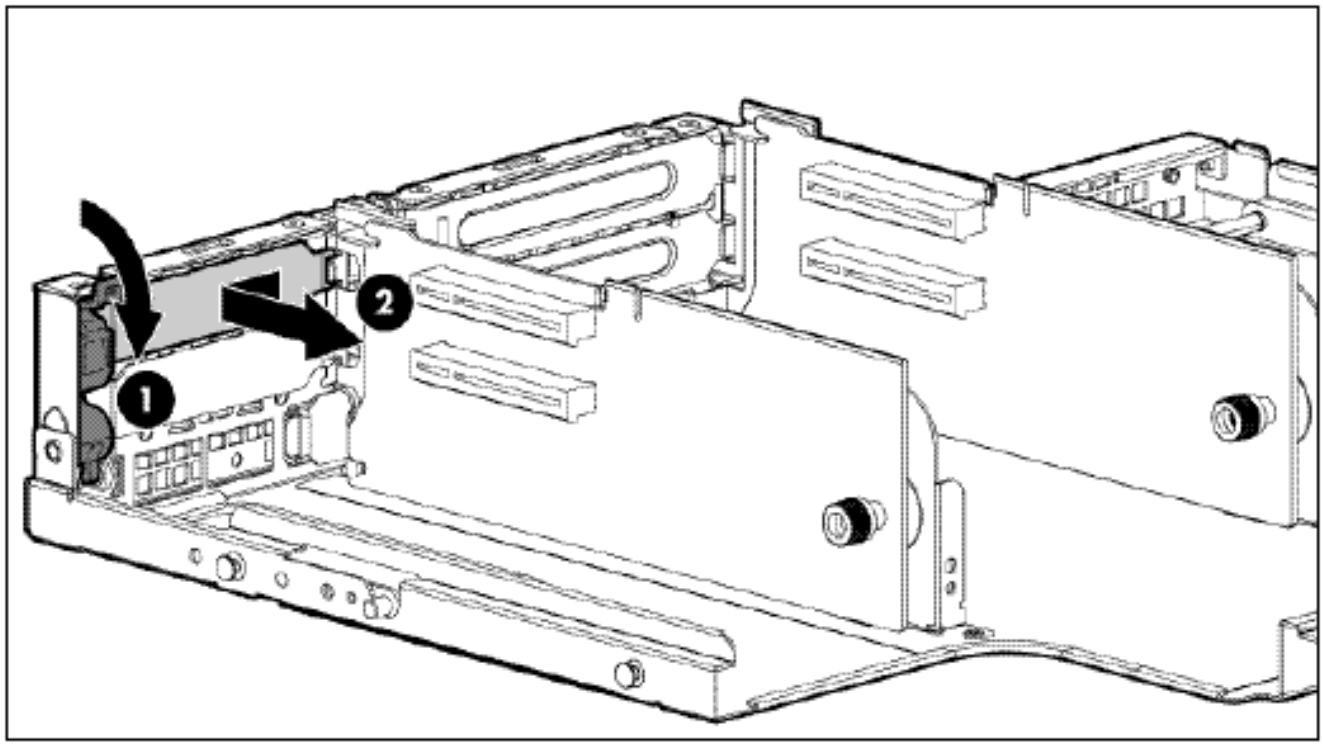
4

Remove the PCI riser cage. For information, see 5.3.9 “How to remove the PCI riser cage” (p. 328).

5

Remove the expansion slot cover: push down on the latch, rotate the latch down, and then remove the cover.

Figure 5-4 Removing slot cover from half-length expansion slot



End of steps

5.3.11 How to install the Adax LPe or PCIe HDC3 board

Perform the following steps to install the Adax LPe or PCIe HDC3 board into a half-length expansion slot:

1

Shut down MCAS platform software. For information, see 5.3.2 “How to shut down MCAS platform software” (p. 323).

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2

Power down the server. For information, see 5.3.5 “How to power down the server” (p. 325).

3

Note: Before disconnecting, label the cables and their connecting positions as required.

Disconnect all the cables connected to the server.

4

Extend the server from the rack. For information, see 5.3.6 “How to extend the server from the rack” (p. 325).

5

Remove the access panel. For information, see 5.3.8 “How to remove the access panel” (p. 328).

6

Remove the PCI riser cage. For information, see 5.3.9 “How to remove the PCI riser cage” (p. 328).

7

Remove the cover of the expansion slot into which you want to install the Adax HDC3 board.

8

Unlock the PCI retaining clip.

9

Install the Adax HDC3 board.

10

Lock the PCI retaining clip.

11

Install the PCI riser cage.

12

Close the PCI riser cage door.

13

Install the access panel.

14

Slide the server back into the rack and press the server firmly into the rack to secure it in place.

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15

Connect all the cables back to the server.

16

Also connect the required SS7 cables to the Adax HDC3 board.

17

Power up the server.

18

Execute the following commands at the command prompt to start up the MCAS platform software:

1. **`su - linus`**
2. **`sepman -d start`**
3. **`exit`**
4. **`tailer PRM`**

   Wait until the MCAS platform starts up and the “REPT INITIALIZATION COMPLETE” output is complete.
5. **`subshl`**
6. **`RST:SLK=<link#>;`**

   One by one restores all the SS7 links of the local server node.
7. **`quit`**

   Quits the MCAS **subshl** session.

END OF STEPS

5.3.12 How to replace an Adax LPe or PCIe HDC3 board

Perform the following steps to replace an Adax LPe or PCIe HDC3 board:

1

Shut down the MCAS platform software. For information, see 5.3.2 “How to shut down MCAS platform software” (p. 323).

2

Power down the server. For information, see 5.3.5 “How to power down the server” (p. 325).

3

Note: Before disconnecting, label the cables and their connecting positions as required.

Disconnect all the cables that are connected to the server and also disconnect the SS7 cables currently connected to the Adax HDC3 board.

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4

Extend the server from the rack. For information, see 5.3.6 “How to extend the server from the rack” (p. 325).

5

Remove the access panel. For information, see 5.3.8 “How to remove the access panel” (p. 328).

6

Remove the PCI riser cage. For information, see 5.3.8 “How to remove the access panel” (p. 328).

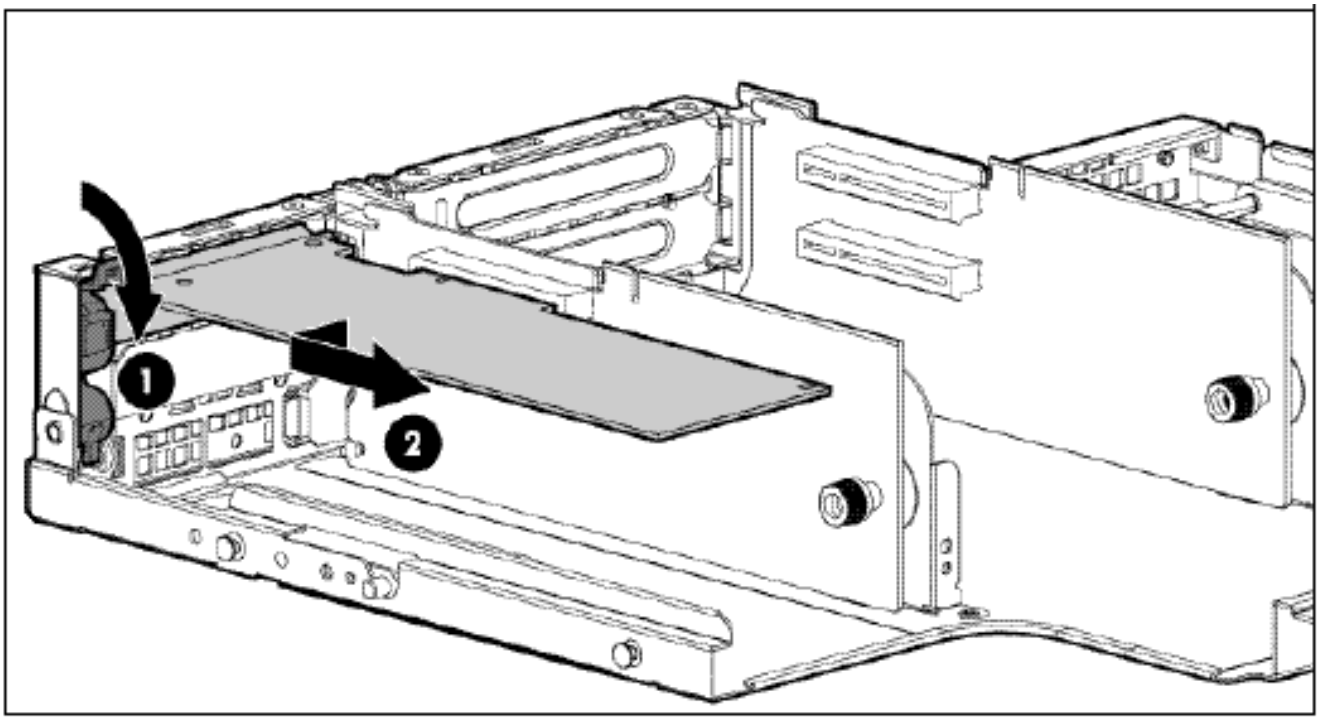
7

Unlock the PCI retaining clip.

8

Remove the current Adax HDC3 board from the half-length PCI expansion slot.

Figure 5-5 Removing current Adax HDC3 board from half-length PCI expansion slot



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9

Install the new Adax HDC3 board into the expansion slot.

10

Lock the PCI retaining clip.

11

Install the PCI riser cage.

12

Close the PCI riser cage door.

13

Install the access panel.

14

Slide the server back into the rack and press the server firmly into the rack to secure it in place.

15

Connect the SS7 cables back to the new Adax HDC3 board and all other cables back to the server.

16

Power up the server.

17

Execute the following commands at the command prompt to start up the MCAS platform software:

1. **`su - linus`**
2. **`sepman -d start`**
3. **`exit`**
4. **`tailer PRM`**

   Wait until the MCAS platform starts up and the “REPT INITIALIZATION COMPLETE” output is complete.
5. **`subshl`**
6. **`RST:SLK=<link#>;`**

   One by one restores all the SS7 links of the local server node.
7. **`quit`**

   Quits the MCAS **subshl** session.

END OF STEPS

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6 Input, output and alarm messages

6.1 Overview

6.1.1 Purpose

This chapter describes the input, output, asserts and alarm messages.

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Input messages

6.2 Overview

6.2.1 Purpose

This section describes the input messages.

Input messages are commands used to perform actions on network elements. Subsystems of network elements output various responses (output messages and system responses) in response to these commands.

Input messages allow data to be retrieved for use in diagnosing and maintaining network elements.

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6.3 Input message components

6.3.1 Overview

This document includes the following information about each input message:

- Key block
- Description
- Format
- Parameters
- System response
- Additional information and references

6.3.2 Key block

The key block is the text located in the upper section of the first page of each message. The following items are found in the key block:

Application

The subsystem that applies to the input message.

6.3.3 Description section

This section describes the purpose of the message.

6.3.4 Format section

The Format section shows how the input message must be entered. The components of input messages are shown in the following example.

`ALW:RESTART[,PROC=`*`a`*`][,MACHINE=`*`b`*`];`

The input message has the following parts:

- Command verb - Specifies the action to be performed. In the example, **`ALW`** is the command verb.
- Colon separator - The colon separates the verb from the rest of the input message.
- Parameters - The parameters define the units, functions, or data on which the command is to act. Variables, which appear in this document as letters printed in italics, are assigned to fields whose contents may vary. An equals sign (=) is used to separate the parameter from its corresponding variable. Options that the user may choose to enter are shown in brackets. The **`ALW:RESTART`** input message has two optional parameters; **`PROC`** and **`MACHINE`**.
- Terminating character - The terminating character tells the system when to begin processing the input message. The semicolon given at the end of an input message format indicates that, when

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the input message has been typed with all of the appropriate variables and options, the user must type a semicolon or the **[RETURN]** key.

The following other notations may be used in the input messages in this document:

- [ ] - Brackets enclose optional entries. Example: **[PROC] [,MACHINE]**. Both of these entries are optional. One, both, or neither may be entered. If the option will be used, a comma must be entered so that the option will be separated from the rest of the message. Do not enter a comma if you will not be specifying one of the options.
- { } - Braces enclose two or more entries where one of them, but only one, must be included in the message. Example: **{ENTRY1|ENTRY2}**. Either ENTRY1 or ENTRY2 must be entered, but using both is not permitted.
- | - Bars separate a selection of entries enclosed by braces or brackets. Only one of the selections separated by braces may be selected. (See the previous example. A bar separates the two possible entries.)
- & - An ampersand separates parameter values. Example: 2&3 is used to enter the numbers 2 and 3.
- && - A double ampersand indicates the upper and lower limits of a range of values. Example: 2&&5 is used to enter the numbers 2, 3, 4, and 5.

6.3.5 Parameters section

This section describes the variables and options that can or must be entered in the input message.

For the **ALW:RESTART** input message, the variable and option are defined as the following:

- *a*
  A single process name or **ALL**. If the process name is specified, but the **MACHINE** parameter is not specified, the commands will display one line of process information per process per machine on which the process is running. In this case, the **ALL** argument is not allowed..
- *b*
  A valid control computer or SS7 node ID. If this parameter is NOT specified, the command default is to the lead control computer.

6.3.6 System response section

This section describes the two-character acknowledgment that appears one space after the terminating character of the input message. This normally happens two seconds after the message is entered. These acknowledgments give information about the status of your message.

The available acknowledgment characters are:

- IP
  in progress.
- NA
  no acknowledgment. Example: NA – NO ACKNOWLEDGMENT FROM CEP. This response occurs when the command execution environment does not acknowledge (ACK) within 60 seconds. The processing status of the input message is unknown.
- NG

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no good. The message conflicts with system or equipment status.

- `OK`
  successful.
- `PF`
  printout follows. Resulting output message(s) will follow.
- `RL`
  retry later.

6.3.7 Additional information and references

This section lists all related input and output messages. References to display actions pages and to other documents are included in this section when applicable.

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6.4 Input messages rules

6.4.1 Summary of input message rules:

Most numbers in input messages are assumed to be decimal.

The final character in an input message can be a semicolon or a **[RETURN]**.

Within an input message parameter, an equal sign (=) is used to separate a parameter name from its value.

You can type a question mark to get help.

Alphanumeric strings that contain special characters (such as /) or blanks can be enclosed in quotation marks (for example, "/filename").

Command keyword strings must be enclosed in double quotation marks (" "). For example, **`LOAD:DB=NDB,FILE=`** *"/tmp/data"*.

Partially entered input lines can be erased by pressing the **[DELETE]** key.

Partially entered input lines can be aborted by pressing **[CTRL-X]**.

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6.5 Help feature

6.5.1 Overview

The Help feature is a tool that provides you with assistance in entering input messages (syntax, arguments, and ranges).

The Help feature is activated by entering a partial input message (without all of the desired parameters) followed by a question mark. For example:

```
ALW:SCHED?
```

You can continue to receive help for all of the desired parameters of an input message by continuing to enter question marks for the unknown parameters.

If more than one screen of help information is available, you will be asked if you want to view the next screen of data. You should respond to the prompt with **[y]** for "yes" or **[n]** for "no".

You can exit help or any input message without executing the message by pressing **[CTRL-X]**.

6.5.2 Help levels

The Help feature has two levels of help. You can toggle between the two levels of help by continuing to enter question marks.

Help level 1

The first level provides you with high level descriptive information that can include message syntax, keywords, and argument descriptions. You receive Level 1 help when you enter the first question mark.

Example 1:

```
<aud?
PLEASE USE ONE OF THE FOLLOWING FORMATS:
AUD:RENT=a[,CORR]
AUD:MATESSN
```

Example 2:

```
<aud:rent?
/* Resource Type */
```

If an input message has required keywords, you will be prompted for keyword values for all of the required keywords.

If an input message has optional keywords (such as `UCL`), the optional keyword can be selected when it is displayed by entering **(yes)**. If the keyword is not desired enter **(no)**.

Help level 2

The second level provides you with a list of valid values for the argument(s). You receive Level 2 help when you enter a second question mark for a desired message argument.

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Example 1:

```
<aud:rent?
/* Resource Type */
<RENT=?
/* One of the following keywords: FILE,SC */
```


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6.6 ALW:SLK

Application

S7SCH

6.6.1 Description

Uninhibits (allows) the link support to carry Signaling System 7 (SS7) traffic.

6.6.2 Format

ALW:SLK=*a*-*b*-*c*;

6.6.3 Parameters

a The Group number (0-31).

b The Subgroup number (1-4).

c The Member number (1-120).

6.6.4 System response

IP

In progress.

6.6.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

INH:SLK
OP:SLK

Output messages

ALW SLK
OP SLK

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6.7 AUD:MATESSN

Application

SPSUP/SPMAN

6.7.1 Format

AUD:MATESSN;

6.7.2 Description

Audits the copy of the mate Signaling System 7 (SS7) Subsystem Number (SSN) status against the SSN status at the mate machine. If any discrepancies exist, update the local machine copy.

SSNs in the range of 0 to 254 can be configured for Service Package Applications (SPAs). This is the range that is audited.

Important! This input message should also be run on the mate machine. This command is not supported on a clustered or standalone SS7 environment.

6.7.3 Parameters

None.

6.7.4 System response

PF

Printout follows.

6.7.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

OP:RTGTBL
OP:RTGTBL,SSN

Output messages

AUD MATESSN
OP RTGTBL
OP STATUS SSN

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6.8 CHG:LS

Application

S7SCH

6.8.1 Description

Note: Inappropriate use of this message may interrupt or degrade service.

Manually changes the state of the Signaling System 7 (SS7) signaling linkset to in-service (IS) or out-of-service (OOS).

6.8.2 Format

CHG:LS=*a*,*b*[,UCL];

6.8.3 Parameters

a the linkset number (1-32).

b
one of the following values:

- IS
  activate the linkset and put it into the IS state.
- OOS
  deactivate the linkset (direct linkset only) and change the state to OOS.

UCL unconditional execution. This option must be specified if you are changing the last normal linkset in the system to OOS.

6.8.4 System response

IP

In progress.

6.8.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

CHG LS
OP LS

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6.9 CHG:SLK

Application

S7SCH

6.9.1

Note: Inappropriate use of this message may interrupt or degrade service.

6.9.2 Description

Manually change the state of the Signaling System 7 (SS7) signaling link (SLK) to block (BLK) or unblock (UBLK).

6.9.3 Format

CHG:SLK=a-*b*- *c*[,d][,UCL];

6.9.4 Parameters

a the Group number (0-31).

b the Subgroup member (1-4).

c the Member number (1-120).

d

one of the following options:

- BLK

  blocks the link.

  This causes the Message Transfer Part (MTP) level 2 to send the local processor outage message to the far end.

- UBLK

  unblocks the link.

  This causes the MTP level 2 stop sending the local processor outage message to the far end.

UCL unconditional execution (default is conditional). This option is not available when the UBLK option is selected.

6.9.5 System response

PF

Printout follows.

6.9.6 Additional information and references

The following are additional information sources regarding this input command.

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Input messages

INH:SLK
OP:SLK

Output messages

```
CHG SLK
OP SLK
```

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6.10 CLR:ALMTBL,AGE

Application

SNMP

6.10.1 Description

Deletes entries from the active alarm table.

Only entries older than the '**age**' parameter are deleted.

6.10.2 Format

CLR:ALMTBL,AGE=d;

6.10.3 Parameters

`age (in days)` the maximum age in days

Valid range: 0 to 7.

6.10.4 System response

`OK`

Successful.

6.10.5 Additional Information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

None.

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6.11 CLR:TRAP, ASSOC

Application

STSCH

6.11.1 Description:

Clear out an outstanding trap of the incoming and outgoing SCTP messages for the association specified.

6.11.2 Format:

CLR:TRAP,ASSOC=*a-b;*

Note: For N+K Configurations
CLR:TRAP,ASSOC=*a;*

Note: For NON N+K Configurations

6.11.3 Parameters:

a node number (0-15). This MUST be set to the local node value.

b association number (1-42).

6.11.4 Example:

CLR:TRAP,ASSOC=1

6.11.5 System response:

IP

In progress.

NG

No good.

INVALID ASSOCIATION_INDEX COMPONENT, VALID RANGE 1-42

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "b" outside the valid range of 1-42.

INVALID NODE_ID COMPONENT, VALID RANGE 0-15

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "a" outside the valid range of 0-15.

WHEN CLUSTERED, ASSOC MUST USE COMPOUND ARGUMENT(A-B)

System is configured as N+K and either a single value was attempted for ASSOC OR a string was entered that was not a valid compound argument with format (a-b).

WHEN NOT CLUSTERED, ASSOC MUST USE SINGLE ARGUMENT(B)

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System is NOT configured as N+K and either a compound value was attempted for ASSOC OR a string was entered that was not a valid single argument with format (b).

6.11.6 Additional Information and References:

The following are additional information sources regarding this input command.

Input messages

None

Output messages

```
CLR TRAP ASSOC
```


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6.12 DGN:SS7BRD

Application

S7SCH

6.12.1 Description

Diagnoses the Signaling System 7 Interface Card board (SS7BRD).

Important! The SS7 board must be in the manual out of service (MOOS) state in order to run diagnostics (DGN).

6.12.2 Format

DGN:SS7BRD=*a-b;*

6.12.3 Parameters

a the Group number (0-15).

b the Member number (1-6).

c the Member number (1-120).

6.12.4 System response

IP

In progress.

NG

No good.

RL

Retry later.

6.12.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

OP:STATUS,SS7BRD
RMV:SS7BRD
RST:SS7BRD

Output messages

```
DGN SS7BRD
OP STATUS SS7BRD
```

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6.13 DUMP:MEAS

Application

MEAS, S7SCH

6.13.1 Description

Note: Inappropriate use of this message may interrupt or degrade service.

Dumps the measurement tables for traffic or plant measurement values that are collected since the last regular measurement report.

6.13.2 Format

DUMP:MEAS,{TABLE=a|INTERVAL=b}[,FILE= *c*[,SILENT]][,MACHINE= *d*];

6.13.3 Parameters

a the name of a measurement table to be dumped.

b

the measurement collection interval. If specified, all tables scheduled to be collected in this interval will be dumped. It must be one of the following:

- TRFC5
- TRFC15
- TRFC30
- PLNTHR
- PLNT24

c a full path to the output file to which the results will be appended.

d

The host from which measurement is dumped. If the MACHINE parameter is not specified, the measurements are dumped from all blade/servers. Its value can be one of the following:

- Host ID – An **r-c-s** (Rack-Chassis-Slot) value (Linux only).
- Logical name – asxxx where xxx is a 3-digit integer identifying the host

Important!

- Exactly one of TABLE and INTERVAL must be specified.
- SILENT can be specified only when FILE option is specified.

6.13.4 System response

NG

No good.

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PF

Printout follows.

RL

Retry later; previously issued **DUMP:MEAS** command still in progress.

IP

In progress

6.13.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

OP:MEAS

Output messages

```
DUMP MEAS
OP MEAS
```

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6.14 INH:RESTART

Application

INIT

6.14.1 Description

Note: Inappropriate use of this message may interrupt or degrade service. Read the Description section carefully.

Inhibits a process from being restarted if it fails to pass its sanity checks. This message also inhibits a process from being restarted if it dies or is initialized with the **INIT:PROC** input message.

6.14.2 Format

INH:RESTART,PROC=*a*,MACHINE=*b*[,UCL];

6.14.3 Parameters

a a single process name or ALL. If the process name is specified, and the **MACHINE** parameter is not specified, the commands will display one line of process information per process per machine on which the process is running. In this case, the ALL argument is not allowed.

b Machine is rack- chassis- slot

UCL unconditional execution. Disable all blocks and unconditionally inhibit restart for the given process.

6.14.4 Examples

INH:RESTART,PROC=SPMAN
INH:RESTART,PROC=SPMAN,UCL

6.14.5 System response

PF

printout follows.

NG

BLOCKED FOR THIS PROCESS. No good.

6.14.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

ALW:RESTART
INIT:PROC

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OP:INIT
OP:RESTART

Output messages

```
ALW RESTART
INIT PROC
OP INIT
OP RESTART
```

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6.15 INH:SLK

Application

S7SCH

6.15.1 Description

Note: Inappropriate use of this message may interrupt or degrade service.

Inhibits the link support from carrying Signaling System 7 (SS7) traffic. Link support consists of SS7 Low Speed links, ATM based (T1) SS7 Signaling links, and E1 High Speed links.

Important! Using this message will not cause any link status changes at level 2.

6.15.2 Format

INH:SLK=*a*-*b*-*c*;

6.15.3 Parameters

a the Group number (0-31). For the configuration of multiple SS7 processes,it means virtual cluster node id. Refer to the , chapter *Administering SIGTRAN protocols* for virtual cluster node id.

b the Subgroup number (1-4).

c the Member number (1-120).

6.15.4 System response

```
IP
```

In progress.

6.15.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:SLK

Output messages

```
INH SLK
OP SLK
```


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6.16 INIT:PROC

Application

INIT

6.16.1 Description

Note: Inappropriate use of this message may interrupt or degrade service.

Initializes and set system recovery level for a specific process.

6.16.2 Format

INIT:PROC=*a*,LEVEL=*b*[,MACHINE= *c*][,UCL];

6.16.3 Parameters

The following parameters are allowed with this command.

- *a*
  Name of the process
- *b*
  the system recovery level:
  0 = single process recovery, provisioning data is not reloaded.
  1 = single process recovery, provisioning data is reloaded.
- *c*
  Node on which the process is to be initialized in r-c-s format. If a MACHINE parameter is not specified, it will default to Active Pilot.
- **UCL**
  unconditional execution. Disable all blocks and unconditionally initialize the given process. The UCL option must be used to initialize critical processes.

6.16.4 System response

PF

Printout follows.

NG

No good.

6.16.5 Additional information and references

The following are additional information sources regarding this input command.

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Input Messages:

ALW:RESTART
INH:RESTART
OP:INIT
OP:RESTART

Output Messages:

None

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6.17 OP:ALMTABLE

Application

MOF

6.17.1 Description

Displays entries from the active alarm table.

6.17.2 Format

```
OP:ALMTABLE [,SEV=a] [,AGE=b] [,INDEX=c] [,XML] [,MACHINE=d]
[,ALARMSRC=e]
```

6.17.3 Parameters

a = perceived Severity of the alarms, should be one of these values.

ALL – All Severities

CRIT – Critical Severity

MAJ – Major Severity

MIN – MINOR Severity

CLR – Clear Severity

b = maximum age in days. Valid range: 1 to 7

c = alarm index.

XML = output to an xml file.

d the node name in R-C-S format (e.g. 0-0-2). Only active alarms generated by the specified node can be displayed.

e the name of alarms source. Only active alarms whose alarm source value is equal to the specified value can be displayed.

6.17.4 System Response

IP = In progress

OK = Successful

6.17.5 Additional Information and references

The following are additional information sources regarding this input command.

Input messages

None

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Output messages

Not all alarms are displayed. At most 100 alarms are displayed. If all alarms are needed, XML option must be added, and all alarms will be written to a file in */SMS/EMS/ActiveAlarms.xml*

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6.18 OP:ASOCC

Application

S7SCH

6.18.1 Description

Outputs the information about SMS Originated Code Control (SOCC) for ASERI INAP call processing. If optional parameters are not specified, the message prints the entire SOCC table. If the Manual SOCC information for a particular KEY is required, then you must specify both key and digtype optional parameters.

6.18.2 Format

OP:ASOCC[,KEY=*a*,DIGTYPE=*b*][,OSS=*c*];

6.18.3 Parameters

a the control code. This is a keyed number of 1 - 10 digits or hex digits [0-9,A-F] depending upon the value in the **DIGTYPE** field.

b the type of digits:

AOSR = Automatic call gapping on platform received number. The KEY used for this digit type is 3 - 10 digits.

AOCLI= Automatic call gapping on calling line identity. The KEY used for this digit type is 1 - 10 digits.

AOCID = Automatic call gapping on customer ID. The KEY used for this digit type is 1 - 10 digits.

c this is an optional parameter. When c = NTM, the CEP runs in the foreground. The command prompt line appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

6.18.4 System response

IP

In progress.

NG

No good.

PF

Printout follows.

6.18.5 Additional information and references

The following are additional information sources regarding this command.

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Input messages

CANC:ASOCC
SET:ASOCC

Output messages

```
CANC ASOCC
OP ASOCC
SET ASOCC
```


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6.19 OP:INIT

Application

ASI

6.19.1 Description

Outputs the initialization status of the control computer processes under the control of INIT. The **OP:INIT** input message, entered without any optional parameters, prints both the history and status information.

Important! For the **OP:INIT**, the default behavior for the "**MACHINE=**" parameter changes when the "**PROC=**" parameter is present. Also, note that if the "**MACHINE=**" or " **PROC=**" parameter is not specified, only the lead CC's processes are shown. If the " **PROC=**" parameter is specified, but the " **MACHINE=**" parameter is not specified, the command will display one line of process information per process per machine on which the process is running.

6.19.2 Format

OP:INIT,MACHINE=*a*[,PROC=*b*][,HISTORY][,STATUS];

6.19.3 Parameters

a Machine is rack- chassis- slot

b a single process name or **"ALL"**. If the process name is specified, and the "machine=" parameter is not specified, the commands will display one line of process information per process per machine on which the process is running. In this case, the "**ALL**" argument is not allowed.

HISTORY output systemwide initialization information.

STATUS output process status information.

6.19.4 System response

PF

Printout follows.

6.19.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:RESTART

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Output messages

```
OP INIT
OP RESTART
```


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6.20 OP:ITURS

Application

S7SCH

6.20.1 Description

Outputs the ITU format route set status for the specified point code. If executed on a node of a N+K configuration, the output will report the route status as it is available on this node only.

6.20.2 Format

OP:ITURS=*a[,M3UA]*;

6.20.3 Parameters

`a` the ITU point code (1-16383)

`[,M3UA]` use this optional parameter to determine the IP route status

If routes are available via the IP and SS7 networks, you can use the *`[,M3UA]`* parameter to obtain the IP network status, while you can execute the input message without the *`[,M3UA]`* parameter to obtain the SS7 network route status.

6.20.4 System response

`NG`

No good.

`PF`

Printout follows.

6.20.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

`OP ITURS`

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6.21 OP:LS

Application

S7SCH

6.21.1 Description

Outputs the Signaling System 7 (SS7) signaling linkset information.

6.21.2 Format

OP:LS=a[,ALL][OSS=*b*];

6.21.3 Parameters

a signaling linkset number (1-32).

ALL outputs a list of all linksets.

b this is an optional parameter. When *b* = NTM, the CEP runs in the foreground. The command prompt line appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

6.21.4 System response

NG

No good.

PF

Printout follows.

6.21.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

OP LS

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6.22 OP:LSRPI

Application

S7SCH

6.22.1 Description

Outputs the Signaling System 7 (SS7) Linkset number and Route Pattern Index (RPI) mapping table.

6.22.2 Format

OP:LSRPI;

6.22.3 Parameters

None.

6.22.4 System response

PF

Printout follows.

6.22.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

OP LSRPI

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6.23 OP:LSST

Application

S7SCH

6.23.1 Description

Outputs the Signaling System 7 (SS7) Linkset Status Table (LSST).

6.23.2 Format

```
OP:LSST;
```

6.23.3 Parameters

None.

6.23.4 System response

```
PF
```

Printout follows.

6.23.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

```
OP LSST
```


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6.24 OP:LSXL

Application

S7SCH

6.24.1 Format

OP:LSXL;

6.24.2 Description

Outputs the Signaling System 7 (SS7) Linkset Translation Table (LSXL).

6.24.3 Parameters

None.

6.24.4 System response

PF

Printout follows.

6.24.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

OP LSXL

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6.25 OP:MEAS

Application

MEAS

6.25.1 Description

Outputs a traffic or plant measurement report of previously collected measurements. All reports are scheduled to be collected starting on the hour (for example, TRFC5 is collected at 12:00, 12:05, 12:10, etc.).

Important! Output from various tables may scroll off. To see the complete report, redirect the output to the DAYLOG (OMlog) by adding "DAYLOG" to the "TRFM" and "PLNT" message classes in the Recent Change and Verify (RC/V) Form 2.2: USL MESSAGE CLASS DEFINITION FORM. This will cause the output to be sent to OMlog.

Important! At least one of the optional parameters (SPA, TABLE, PLAT, or ALL) must be included in the input command. The ALL option must be used alone, but combinations of SPA, TABLE, and PLAT are allowed.

6.25.2 Format

OP:MEAS=*a*[,DATE=*b*][,TIME=*c*]
[,DST][,ALL][,PLAT][,XML][,XMLB][,XML5][,XML5A][,XML5B][,UCL]
[,SPA=*d*][,TABLE=*e*][,OSS=f];

6.25.3 Parameters

a
measurement report type:

- TRFC5 = 5 minute traffic report.
- TRFC15= 15 minute traffic report.
- TRFC30= 30 minute traffic report.
- PLNTHR= hourly plant report.
- PLNT24= daily plant report (collected at midnight; 0000).

b the date that desired measurements were scheduled to be collected. Date is in the currently applicable format (*YYYYMMDD*, *MMDDYYYY*, or *DDMMYYYY*).

c the time that the desired measurements were scheduled to be collected (*HHMM*).

DST daylight savings time measurements requested. This option is only used when the measurements requested are the daylight savings time measurements, when there is an "overlapping" hour while moving to standard time.

For example, to retrieve measurements for 01:00 daylight time on Sunday when the daylight savings time ends in the US, the DST option must be specified with **TIME**=0100. To retrieve the measurements for 01:00 standard time (an hour later), do not specify the **DST** option.

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ALL all measurement tables. This specifies that all of the measurement tables will be reported for the specified measurement report type (a). If **ALL** is specified, **SPA**, **PLAT**, and **TABLE** options are invalid.

PLAT the platform measurement tables. This specifies that all of the platform (non-SPA) measurement tables will be reported for the specified measurement report type (*a*).

XML optional parameter. It specified that XML artifacts will be created for the indicated measurements. The resulting artifacts will be placed in the appropriate */SMS/EMS/Performance* directory. The name of the file has the format:

A[yyyymmdd].[hhmm]-[hhmm]_[platform name]

(Example: **A20120412.1500-1530_atca21-0-0-1**)

XMLB the same as XML except that the file name will use system name instead of node name

(Example: **A20120412.1500-1530_atca021**)

XML5 optional parameter. It specified that XML artifacts will be created for the indicated measurements. The resulting artifacts will be placed in the appropriate */SMS/EMS/Performance* directory. The name of the file has this format:

A[yyyymmdd].[begin-time]-[end-time]_[platform name]

(Example: **A20120412.0915-0500-0930-0500_atca021-0-0-1**)

where the date string **[yyyymmdd]** is the date when the measurements were scheduled to be collected. [begin-time] and [end-time] are the begin and end times of the collection interval, in the format of local-time plus offset from GMT (**[hhmm]** followed by + or - **[hhmm]**).

XML5A It is an optional parameter. It is the same as XML5 except the trailing '%' character is deleted from the CAPACITY field of MS_DISK_MEAS report.

XML5B the same as XML5A except that the file name will use system name instead of node name

(**Example: A20120412.0915-0500-0930-0500_atca021**)

UCL optional parameter used only with the XML* options. It specified that the resulting XML artifacts for the indicated measurements will be overwritten, if the artifacts already exists.

d the Service Package Application (SPA) name or a list of SPA names (separated with &) or **ALL** for all SPAs. This specifies that the measurement tables for the SPAs listed will be reported for the specified measurement report type (*a*).

e the measurement table name (in double quotes) or a list of measurement table names (in double quotes separated with &). This specifies that the measurement tables listed will be reported for the specified measurement report type (*a*).

f this is an optional parameter. When *f*= NTM, the CEP runs in the foreground. The command prompt line appears after the CEP command completes. "NetMinder Application Suite of products" uses this as a command response delimiter.

Important! The system defaults to the following values if the time or the date are not specified:

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If neither **TIME** nor **DATE** are specified, the last scheduled collection time for the specified measurement interval is used (for example: if **OP:MEAS=TRFC30** is entered at 13:45, the TRFC30 measurement report for 13:30 is printed.

If **TIME** is specified without **DATE**, the current date is used as the default.

If **DATE** is specified without **TIME**, 0000 (midnight) is used as the default time.

Note: The CLCT parameter is supported for use by scheduled jobs and may not be used on the command line.

The NORPT parameter will inhibit measurement reporting.

6.25.4 System response

- PF

  Printout follows.
- NG - INVALID DATE AND/OR TIME SPECIFIED

  No good. An invalid date and/or time was specified.
- NG - INVALID DATE SPECIFIED

  No good. An invalid date was specified.
- NG - INVALID TIME SPECIFIED

  No good. An invalid time was specified.
- NG - TIME SPECIFIED NOT A COLLECTION TIME

  No good. The time specified is not a collection time for the collection interval specified.
- NG - ALL OPTION INVALID WITH SPA, TABLE, OR PLAT OPTION

  No good. If the ALL option is used, the SPA, TABLE, and PLAT options cannot be used.
- NG - ONE OF ALL, SPA, TABLE, PLAT or XML MUST BE SPECIFIED

  No good. At least one of the ALL, SPA, TABLE, PLAT or XML options must be specified.
- NG - SPA=ALL&... INVALID

  No good. SPA.ALL cannot be combined with individual SPA names since it would be redundant. At least one of the ALL, SPA, TABLE, or PLAT options must be specified, but ALL must be used alone.
- NG - DST INVALID IN A NON-DAYLIGHT SAVINGS TIMEZONE

  No good. If the system time zone is not set to change to Daylight Savings Time, the DST option is not allowed.
- NG - DST INVALID DURING DAYLIGHT SAVINGS TIME

  No good. If the system is currently in Daylight Savings Time (such as EDT or CDT), the DST option is not allowed. DST is allowed only during standard time (such as EST or CST).
- NG - SPA,TABLE,PLAT OR ALL CANNOT BE USED WITH XML OPTION

  No good. The SPA, TABLE, or PLAT parameter cannot be specified with XML options (XML, XML5 and XML5A).
- NG - XML, XMLB, XML5, XML5A, AND XML5B ARE MUTUALLY EXCLUSIVE

  No good. Only one of XML, XMLB, XML5, XML5A, or XML5B parameter can be specified.

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6.25.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

```
OP MEAS

REPT MEAS
```

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6.26 OP:MUXAGT

Application

MUXSCH

6.26.1 Description

This input message displays all connected remote Java Agent Names and IP Addresses by MUXSCH.

6.26.2 Format

OP:MUXAGT[,MACHINE=*a*][,MUXSCH=*b*];

6.26.3 Parameters

a Machine is rack- chassis- slot

b MUXSCH process ID (0-3).

This parameter is only needed when multiple MUXSCH processes are configured in one node.

6.26.4 System response

PF - Printout follows.

6.26.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:MUXAGT

Output messages

OP MUXAGT

Examples:

LOCAL (0-0-1)

```
    +++ ATCA081-0-0 2009-11-30 10:24:33 MAINT /MX006 #000463 as001 LEAD
>
M  OP MUXAGT MUXSCH=0 COMPLETED - NO AGENT INSTANCE CONNECTED.
   END OF REPORT #000463++-
```

REMOTE (0-0-9)

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```
    +++ ATCA081-0-0 2009-11-30 10:25:27 MAINT /MX006 #000467 as001 LEAD
>
M  OP MUXAGT MACHINE=0-0-9 MUXSCH=0 COMPLETED - NO AGENT INSTANCE
CONNECTED.
   END OF REPORT #000467++-
```

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6.27 OP:MUXSKT

Application

MUXSCH

6.27.1 Description

This input message displays the Local IP Address and Local Port which MUXSCH opened to accept the connection from Java agents.

6.27.2 Format

OP:MUXSKT[,MACHINE=a][,MUXSCH=b];

6.27.3 Parameters

a Machine is rack- chassis- slot

b MUXSCH process ID (0-3).

This parameter is only needed when multiple MUXSCH processes are configured in one node.

6.27.4 System response

PF - Printout follows.

6.27.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:MUXSKT

Output messages

OP MUXSKT

Examples:

LOCAL (0-0-1)

```
    +++ ATCA081-0-0 2009-11-30 10:24:41 MAINT /MX001 #000464 as001 LEAD
>
M  OP MUXSKT MUXSCH=0 COMPLETED SUCCESSFULLY, LOCAL HOST IP = 10.1.1.193
PORT = 5678.
   END OF REPORT #000464++-
```

REMOTE (0-0-9)

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```
    +++ ATCA081-0-0 2009-11-30 10:25:27 MAINT /MX006 #000467 as001 LEAD
>
M  OP MUXAGT MACHINE=0-0-9 MUXSCH=0 COMPLETED - NO AGENT INSTANCE
CONNECTED.
   END OF REPORT #000467++-
```

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6.28 OP:MUXSSN

Application

MUXSCH

6.28.1 Description

This input message displays all the SSN used by the MUXSCH.

6.28.2 Format

OP:MUXSSN[,MACHINE=*a*][,MUXSCH=*b*];

6.28.3 Parameters

a Machine is rack- chassis- slot

b MUXSCH process ID (0-3).

This parameter is only needed when multiple MUXSCH processes are configured in one node.

6.28.4 System response

PF - Printout follows.

6.28.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:MUXSSN

Output messages

OP MUXSSN

Examples

LOCAL (0-0-1)

```
    +++ ATCA081-0-0 2009-11-30 10:24:46 MAINT /MX002 #000465 as001 LEAD
>
M  OP MUXSSN MUXSCH=0 COMPLETED SUCCESSFULLY, LOCAL SSN(s) =   6
   END OF REPORT #000465++-
```

REMOTE (0-0-9)

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```
    +++ ATCA081-0-0 2009-11-30 10:25:47 MAINT /MX002 #000469 as001 LEAD
>
M  OP MUXSSN MACHINE=0-0-9 MUXSCH=0 COMPLETED SUCCESSFULLY, LOCAL SSN(s)
=   6
   END OF REPORT #000469++-
```

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6.29 OP:OVLD,SSN

Application

SPMAN

6.29.1 Description

Outputs Subsystem Number (SSN) overload status information including the current call count per SSN and the current SSN resource management level threshold.

6.29.2 Format

OP:OVLD,SSN=*a*[,MACHINE=
***b*];**

6.29.3 Parameters

a the SSN number (0-254).

b Machine is rack- chassis- slot

6.29.4 System response

NG

No good.

PF

Printout follows.

6.29.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:STATUS,SSN

Output messages

OP OVLD

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6.30 OP:RESTART

Application

INIT

6.30.1 Description

Outputs the restart status of a permanent process. If a process is specified, only that process`s restart status will be printed.

6.30.2 Format

OP:RESTART,MACHINE=*a*[,PROC=*b*];

6.30.3 Parameters

a Machine is rack- chassis- slot

b a single process name or "ALL". If the process name is specified, and the "**MACHINE=**" parameter is not specified, the commands will display one line of process information per process per machine on which the process is running. In this case, the "ALL" argument is not allowed.

6.30.4 System response

PF

Printout follows.

6.30.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

ALW:RESTART
INH:RESTART

Output messages

OP RESTART

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6.31 OP:RPI

Application

S7SCH

6.31.1 Description

Outputs the Signaling System 7 (SS7) Route Pattern Index (RPI) table.

6.31.2 Format

OP:RPI;

6.31.3 Parameters

None.

6.31.4 System response

PF

Printout follows.

6.31.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:LSRPI
OP:RPIRS

Output messages

OP RPI

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6.32 OP:RPIRS

Application

S7SCH

6.32.1 Description

Outputs the Signaling System 7 (SS7) Route Pattern Index (RPI) and Route Set (RS) mapping tables.

6.32.2 Format

OP:RPIRS;

6.32.3 Parameters

None.

6.32.4 System response

PF

Printout follows.

6.32.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:LSRPI

Output messages

OP RPIRS

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6.33 OP:RS

Application

S7SCH

6.33.1 Description

Outputs the ANSI format route set status for the specified point code. If executed on a node of a N+K configuration, the output will report the route status as it is available on this node only.

6.33.2 Format

OP:RS=*a-b-c[,M3UA]*;

6.33.3 Parameters

a network number (0-255)

b cluster number (0-255)

c member number (0-255)

[,M3UA] use this optional parameter to determine the IP route status

If routes are available via the IP and SS7 networks, you can use the ***[,M3UA]*** parameter to obtain the IP network status, while you can execute the input message without the ***[,M3UA]*** parameter to obtain the SS7 network route status.

6.33.4 System response

NG

No good.

PF

Printout follows.

6.33.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

OP RS

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6.34 OP:SCP

Application

USLI

6.34.1 Description

Outputs the status of the platform.

6.34.2 Format

OP:SCP[,OSS=a];

6.34.3 Parameters

a optional parameter. When **a** = NTM, the CEP runs in the foreground. The command prompt line appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

6.34.4 System response

PF

Printout follows.

6.34.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

RMV:SCP
RST:SPA

Output messages

OP SCP

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6.35 OP:SGMASTER

Application
STSCH

6.35.1 Description

Outputs a report showing the Master STSCH node number, host name, and machine name.

6.35.2 Format

```
OP:SGMASTER
```

6.35.3 Parameters

None.

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6.36 OP:SLK

Application

S7SCH

6.36.1 Description

Outputs the Signaling System 7 (SS7) signaling link status.

6.36.2 Format

OP:SLK=[*a*-*b*-*c*][EQP][MTP2][MTP2AA][MTP2E1][MTP2T1][SAAL][M2PA][LOCAL][, OSS=*d*];

6.36.3 Parameters

a the Group number (0-31).

b the Subgroup number (1-4).

c the Member number (1-120).

EQP requests a list of all equipped links.

MTP2 Message Transfer Part Level 2 SS7 links.

MTP2AA requests a list of Message Transfer Part level 2 Clear Channel E1 SS7 links.

MTP2E1 requests a list of Message Transfer Part level 2 Channelized E1 SS7 links.

MTP2T1 requests a list of Message Transfer Part level 2 Channelized T1 SS7 links.

SAAL requests a list of all SS7/ATM (high speed links).

M2PA requests a list of SS7 links for MTP2 Peer-to-Peer User Adaptation Layer.

LOCAL requests a list of all SS7 links in the local SS7 node.

d this is an optional parameter. When *d* = NTM, the CEP runs in the foreground. The command prompt line appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

6.36.4 System response

NG

No good.

PF

Printout follows.

6.36.5 Additional information and references

The following are additional information sources regarding this command.

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Input messages

None.

Output messages

```
OP SLK
```


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6.37 OP:SOCC

Application

S7SCH

6.37.1 Description

Outputs the information about SMS Originated Code Control (SOCC) for the ANSI protocol. If optional parameters are not specified, the message prints the entire SOCC table. If the Manual SOCC information for a particular KEY is required, then both key and digtype optional parameters must be specified.

6.37.2 Format

OP:SOCC[,KEY=*a*{,DIGTYPE=*b*,TRANSTYPE=*c*}];

6.37.3 Parameters

a a controlled code. Keyed number with 3, 6, 7, 8, 9, or 10 digits.

b

type of digits:

- **DIALED** = called number.
- **ANI**= calling number.

c the translation type (0-255).

6.37.4 System response

IP

In progress.

NG

No good.

PF

Printout follows.

6.37.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

CANC:SOCC
SET:SOCC

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Output messages

```
CANC SOCC
OP SOCC
SET SOCC
```


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6.38 OP:SS7MASTER

Application

S7SCH

6.38.1 Description

Outputs the current status of SS7master.

6.38.2 Format

OP:SS7MASTER[,OSS=a];

6.38.3 Parameters

a this is an optional parameter. When **a** = NTM, the CEP runs in the foreground. The commpand prompt appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

6.38.4 Example

OP:SS7MASTER

6.38.5 System response

NG

No good.

PF

Printout follows.

6.38.6 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

None.

Output Messages:

OP SS7MASTER

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6.39 OP:SS7NODE

Application
S7SCH

6.39.1 Description

Outputs the current local Signaling System 7 (SS7) node status.

6.39.2 Format

OP:SS7NODE[,OSS=a][,MACHINE=*b*];

6.39.3 Parameters

a this is an optional parameter. When **a** = NTM, the CEP runs in the foreground. The commpand prompt appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

b Machine is rack- chassis- slot

6.39.4 Example

OP:SS7NODE

6.39.5 System response

NG

No good.

PF

Printout follows.

6.39.6 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

RMV:SS7NODE
RST:SS7NODE

Output Messages:

OP SS7NODE
RMV SS7NODE
RST SS7NODE

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6.40 OP:TRAP, ASSOC

Application

STSCH

6.40.1 Description:

Outputs a report of the incoming and outgoing SCTP messages being trapped for the association specified.

6.40.2 Format:

```
OP:TRAP,ASSOC=a-b  NOTE: For N+K Configurations
OP:TRAP,ASSOC=b      NOTE: For NON N+K Configurations
```

6.40.3 Parameters:

a node number (0-15). This MUST be set to the local node value. For the configuration of multiple SIGTRAN processes, it means virtual cluster node id. You can refer to System Administration Guide chapter 23 for virtual cluster node id.

b association number (1-42).

6.40.4 Example:

```
OP:TRAP,ASSOC=1
OP:TRAP,ASSOC=10-1
```

6.40.5 System response:

IP

In Progress

NG

Not Good – Arguments are invalid.

INVALID ASSOCIATION_INDEX COMPONENT, VALID RANGE 1-42

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "b" outside the valid range of 1-42.

INVALID NODE_ID COMPONENT, VALID RANGE 0-15

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "a" outside the valid range of 0-15.

WHEN CLUSTERED, ASSOC MUST USE COMPOUND ARGUMENT(A-B)

System is configured as N+K and either a single value was attempted for ASSOC OR a string was entered that was not a valid compound argument with format (a-b).

WHEN NOT CLUSTERED, ASSOC MUST USE SINGLE ARGUMENT(B)

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System is NOT configured as N+K and either a compound value was attempted for ASSOC OR a string was entered that was not a valid single argument with format (b).

6.40.6 Additional Information and References:

The following are additional information sources regarding this command.

Input messages:

None

Output messages

```
OP TRAP ASSOC
```


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6.41 OP:STATUS,ASSOC

Application

STSCH

6.41.1 Description

Outputs the status of the specified association, or all provisioned associations.

6.41.2 Format

For Non N+K Configurations.

OP:STATUS,ASSOC=*[b,ALL,LOCAL],M3UA;*

OP:STATUS,ASSOC=*[b,ALL]*[,SCTP];

For N+K Configurations.

OP:STATUS,ASSOC=*[a-b,ALL,LOCAL]*,M3UA;

OP:STATUS,ASSOC=[a-b,ALL][,SCTP];

OP:STATUS,ASSOC=ALL[,MUX, IP="d"];

6.41.3 Parameters

`a` Node number (0-31)

`b` Association number (1-52)

`ALL` All provisioned associations are output

`LOCAL` All associations on this node are output

`SCTP` The optional parameter. If no SCTP or M3UA specified, default is SCTP. Lists all the SCTP associations

`M3UA` If M3UA parameter is specified, the M3UA treatment association's status is listed

`MUX` The optional parameter. Lists all the associations with treatment MUX defined in form 12.2. Supported only in Linux

`IP="d"` The optional parameter. Lists all the associations whose destination IP address includes “d”. “d” is the configured “IP address 1” or “IP address 2” defined in form 12.1. Supported only in Linux

6.41.4 System response

`IP`

In Progress

`NG`

Not Good – Arguments are invalid

INVALID ASSOCIATION_INDEX COMPONENT, VALID RANGE 1-52

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System is configured as N+K and the ASSOC argument "a-b" entered contains a value for "b" which is outside the valid range of 1-52

INVALID NODE_ID COMPONENT, VALID RANGE 0-31

System is configured as N+K and the ASSOC argument "a-b" entered contains a value for "a" which is outside the valid range of 0-31

WHEN CLUSTERED, ASSOC MUST USE COMPOUND ARGUMENT(A-B)

System is configured as N+K and either a single value is attempted for ASSOC or a string is entered that does not match either of the valid key words "ALL" or "LOCAL"

WHEN NOT CLUSTERED, ASSOC MUST USE SINGLE ARGUMENT(B)

System is NOT configured as N+K and either a compound value is attempted for ASSOC or a string is entered that does not match the valid key word "ALL"

STSCH PROCESS DOES NOT EXIST

STSCH process or STSCH[0-3] processes do not exist to process the request

DBI PROCESS DOES NOT EXIST

DBI process does not exist to respond the request

INVALID RESPONSE MESSAGE

Invalid response message received that the CEP cannot handle

THE SPECIFIED IP ADDRESS IS NOT CONFIGURED IN FORM 12.1 (SCTP HOST CONFIGURATION FORM)

The parameter “d” is not configured in form 12.1

UNSUPPORTED OPTION IS USED

The option is not supported in the configuration

USE THE SPECIFIED OPTION WITH ASSOC=ALL

Use the IP or MUX option with “ASSOC=ALL”

THE MUX AND IP OPTIONs CANNOT BE USED TOGETHER

The MUX option and IP option cannot be used together

NO ASSOCIATION IS EQUIPPED

The association is not configured

THE ASSOCIATION IS NOT EQUIPPED

The specified association is not configured

6.41.5 Additional information and references

The following are additional information sources regarding this input command:

Input Messages:

None

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Output Messages:

```
OP STATUS ASSOC
```

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6.42 OP:STATUS,SS7BRD

Application

S7SCH

6.42.1 Description

Outputs the status of the specified Signaling System 7 interface card board (SS7BRD).

6.42.2 Format

OP:STATUS,SS7BRD=*a-b*;

6.42.3 Parameters

The following parameters are allowed with this command.

a the group number (0-31)

b the member number (1-4)

6.42.4 System response

PF

Printout follows.

6.42.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

OP STATUS SS7BRD

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6.43 OP:STATUS,SSN

Application

SPMAN

6.43.1 Description

Outputs the status of one subsystem number (SSN) or all SSNs for a Signaling System 7 (SS7) complex. Status alternatives are IS, MOOS, OOS, and DIS.

6.43.2 Format

OP:STATUS,SSN=*a*[,MATE];
OP:STATUS,SSNALL[,MATE][,MACHINE=*b*];

6.43.3 Parameters

The following parameters are allowed for this command.

a the subsystem number (0, 5-254, 256-318 are valid)

(1-4 are reserved)

MATE requests the status of the mate SSN(s). This option is not supported on a clustered or standalone SS7 environment.

SSNALL requests all subsystem numbers for running SPAs

b Machine is rack- chassis- slot

6.43.4 System response

```
NG - 'SSN' VALUE a IS OUT OF RANGE
```

No good.

```
PF
```

Printout follows.

6.43.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

RMV:SSN
RST:SSN

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Output messages

```
OP STATUS SSN
RMV SSN
RST SSN
```


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6.44 RCV:MENU or RCV:MENU,PLAT

Application

RCV

6.44.1 Description

Invokes the Recent Change and Verify (RC/V) forms for platform data. This input message is used to insert, update, delete, and review records in the database. The interface is menu-driven.

6.44.2 Format

```
RCV:MENU
RCV:MENU,PLAT
```

6.44.3 Parameters

None.

6.44.4 System response

```
IP
```

In progress.

```
NG - WRONG SYNTAX
```

No good.

The message was executed with invalid syntax.

6.44.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

None.

Documents

CAS Recent Change and Verify Procedures

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6.45 RMV:ASSOC

Application

STSCH

6.45.1 Description

Removes the SCTP association from service and assigns it to the manually-out-of-service (MOOS) state.

6.45.2 Format

RMV:ASSOC=*a-b[,UCL]*;

Note: For N+K Configurations

RMV:ASSOC=*b[,UCL]*;

Note: For NON N+K Configurations

6.45.3 Parameters

a node number (0-15). This MUST be set to the local node value. For the configuration of multiple SIGTRAN processes, it means virtual cluster node id. You can refer to chapter 23 for virtual cluster node id.

b the association number (1-42).

[,UCL] optional parameter. If you specify this parameter, the association will be aborted. If you do not specify this parameter, a graceful shutdown will be performed instead.

6.45.4 System response

IP

In progress.

NG

No good.

INVALID ASSOCIATION_INDEX COMPONENT, VALID RANGE 1-42

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "b" outside the valid range of 1-42.

INVALID NODE_ID COMPONENT, VALID RANGE 0-15

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "a" outside the valid range of 0-15.

WHEN CLUSTERED, ASSOC MUST USE COMPOUND ARGUMENT(A-B)

System is configured as N+K and either a single value was attempted for ASSOC or a string was entered that was not a valid compound argument with format (a-b).

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```
WHEN NOT CLUSTERED, ASSOC MUST USE SINGLE ARGUMENT(B)
```

System is NOT configured as N+K and either a compound value was attempted for ASSOC or a string was entered that was not a valid single argument with format (b).

```
SPECIFIED NODE ID x IS NOT LOCAL

LOCAL NODE ID IS y

SPECIFIED NODE ID x IS NOT LOCAL

LOCAL NODE ID IS BETWEEN y AND Z
```

6.45.5 Additional information and references

The following are additional information sources regarding this input command.

Output messages

```
RMV ASSOC
```

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6.46 RMV:SCP

Application

SS7

6.46.1 Description

Note: Inappropriate use of this message may interrupt or degrade service.

Removes (deactivates) the Service Control Point (SCP) from SS7 network either conditionally or unconditionally.
The table below describes the mate SCP status.

If the...	Then the...
SCP is removed conditionally	mate SCP status will be checked
mate SCP is unequipped or out of service	SCP will not be removed
UCL option is used	SCP is removed without checking the status of the mate SCP

6.46.2 Format

```
RMV:SCP[,UCL];
```

6.46.3 Parameters

UCL

unconditional execution. (Default is conditional.)

6.46.4 System response

```
IP
```

In progress.

6.46.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

OP:SCP
RST:SCP

Output messages

```
OP SCP
RMV SCP
RST SCP
```


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6.47 RMV:SLK

Application

S7SCH

6.47.1 Description

Note: Inappropriate use of this message may interrupt or degrade service.

Removes the Signaling System 7 (SS7) links from service and assigns it to the manually out-of-service (MOOS) state.

Important! The Non SAAL SS7 link must be blocked or inhibited before this command is run.

6.47.2 Format

RMV:SLK=*a*-*b*-*c* [,UCL];

6.47.3 Parameters

The following parameters are allowed with this command.

a the group number (0-31). For the configuration of multiple SS7 processes,it means virtual cluster node id. Refer to the , chapter *Administering SIGTRAN protocols* for virtual cluster node id.

b the subgroup number (1-4)

c the member number (1-120)

UCL unconditional execution, this options applies to SAAL links and only in UCL.

6.47.4 System response

IP

In progress.

NG

No good.

6.47.5 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

OP:SLK
RST:SLK

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Output Messages:

```
OP SLK
RMV SLK
```


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6.48 RMV:SS7BRD

Application

S7SCH

6.48.1 Description

Note: If the UCL option is used, the board is removed without checking the board`s link status, so the messages that go through the links on that board will be lost.

Conditionally removes the Signaling System 7 interface card board (SS7BRD) from service.

When the SS7BRD is conditionally removed, the link status on the specified board is checked. If any equipped link on the specified board is not in the manual out of service (MOOS) state, the board is not removed.

If the unconditional option is used, the board is removed without checking the link status on that board. In other words, the messages that go through the links on that board will be lost.

6.48.2 Format

RMV:SS7BRD=*a-b*[,UCL];

6.48.3 Parameters

The following parameters are allowed with this command.

a the SS7 Interface Card board group (node) number (0-31).

b the SS7 Interface Card board member (board) number (1-4).

c the member number (1-120).

UCL unconditional execution. (Default is conditional.)

6.48.4 System response

IP

In progress.

NG - INVALID SS7IC BOARD NUMBER

No good.

6.48.5 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

RST:SS7BRD

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Output Messages:

```
OP STATUS SS7BRD
RMV SS7BRD
```


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6.49 RMV:SS7NODE

Application

S7SCH

6.49.1 Description

Removes the local Signaling System 7 (SS7) node from the SS7 network either conditionally or unconditionally.

Important! This input message only applies to the distributed SS7 configuration. It will allow a single node in a cluster to be removed.

Note: The removal state of an SS7 node will be lost if S7SCH of the node is restarted after the node has been removed with RMV:SS7NODE command. After the S7SCH is restarted, the SS7 node is considered in restored state but its SS7 links will remain in MOOS state. The user has to take the following two steps to restore the SS7 node back to its original removed state:

1. Manually restore each SS7 link using OP:SLK command
2. Re-execute the exact RMV:SS7NODE IM command previously executed

6.49.2 Format

RMV:SS7NODE[,UCL|TIMEOUT=b][,MACHINE=a];

6.49.3 Parameters

UCL unconditional execution. (Default is conditional).

a Machine is rack- chassis- slot

b the timeout interval in seconds (1-600).

The TIMEOUT optional parameter will remove the network links from service, and start the timer equal to specified TIMEOUT parameter, and when timer expires MUXSCH will remove all MUX agent connections.

While using the input command, the following points should be noted for parameter b:

- TIMEOUT and UCL parameters cannot be used at the same time.
- MACHINE parameter must be specified when TIMEOUT parameter is specified.

6.49.4 Example

RMV:SS7NODE

6.49.5 System response

IP

In Progress.

NG

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No Good.

6.49.6 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

OP:SS7NODE
RST:SS7NODE

Output Messages:

```
OP SS7NODE
RMV SS7NODE
RST SS7NODE
```


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6.50 RMV:SSN

Application

SPMAN

6.50.1 Description

Note: Inappropriate use of this message may interrupt or degrade service. Read the Description section carefully.

Removes the specified subsystem number (SSN) from service either conditionally or unconditionally.

Removing an SSN changes its state from in-service (IS) to out-of-service (OOS). An OOS SSN can no longer accept calls. A timer is run to allow existing calls to complete if the conditional option is used. If all calls do not complete, then the remove fails and the SSN remains in service.

If an SSN that has a mate is removed conditionally, the mate is asked for permission to remove the SSN. If permission is denied, the SSN is not removed.

If the unconditional option is used, the SSN is removed without asking the mate for permission. In this case, existing calls are terminated.

6.50.2 Format

```
RMV:SSN=a[,UCL];
```

6.50.3 Parameters

The following parameters are allowed with this command.

a subsystem number (0, 5-254, 256-318)

6.50.4 System response

NG

No good.

PF

Printout follows.

6.50.5 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

OP:STATUS.SSN
RST:SSN

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Output Messages:

```
OP STATUS SSN
RMV SSN
RST SSN
```


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6.51 RST:ASSOC

Application

STSCH

6.51.1 Description

For the server, this message takes the SCTP association from the manually out-of-service (MOOS) state to the out-of-service (OOS) state. For the client, this message attempts to take the SCTP association from the MOOS state to the active (ACT) state.

6.51.2 Format

RST:ASSOC=*a-b;*

Note: For N+K Configurations

RST:ASSOC=*b;*

Note: For Non-N+K Configurations

6.51.3 Parameters

a node number (0-15). This MUST be set to the local node value. For the configuration of multiple SIGTRAN processes, it means virtual cluster node id. You can refer to chapter 23 for virtual cluster node id.

b the association number (1-42).

6.51.4 System response

IP

In progress.

NG

No good.

INVALID ASSOCIATION_INDEX COMPONENT, VALID RANGE 1-42

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "b" outside the valid range of 1-42.

INVALID NODE_ID COMPONENT, VALID RANGE 0-15

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "a" outside the valid range of 0-15.

WHEN CLUSTERED, ASSOC MUST USE COMPOUND ARGUMENT(A-B)

System is configured as N+K and either a single value was attempted for ASSOC or a string was entered that was not a valid compound argument with format (a-b).

WHEN NOT CLUSTERED, ASSOC MUST USE SINGLE ARGUMENT(B)

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System is NOT configured as N+K and either a compound value was attempted for ASSOC or a string was entered that was not a valid single argument with format (b).

```
SPECIFIED NODE ID x IS NOT LOCAL
LOCAL NODE ID IS y
SPECIFIED NODE ID x IS NOT LOCAL
LOCAL NODE ID IS BETWEEN y AND Z
```

6.51.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

```
RST ASSOC
```


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6.52 RST:SCP

Application

S7SCH

6.52.1 Description

Restores the platform and connects it to the SS7 network.

6.52.2 Format

RST:SCP;

6.52.3 Parameters

None.

6.52.4 System response

IP

In progress.

6.52.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

OP:SCP
RMV:SCP

Output messages

OP SCP
RST SCP

Display action pages

109 - CONTROL COMPUTER SUMMARY
121 - CC IOP STATUS
122 - CC INPUT/OUTPUT CONTROLLER
123 - CC SCSI STATUS
1260 - MSC STATUS

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6.53 RST:SLK

Application

S7SCH

6.53.1 Description

Restores the Signaling System 7 (SS7) link and tries to put it in the active (ACT) state.

6.53.2 Format

RST:SLK=*a*-*b*-*c*;

6.53.3 Parameters

The following parameters are allowed with this command.

a the group number (0-31). For the configuration of multiple SS7 processes,it means virtual cluster node id. Refer to the , chapter *Administering SIGTRAN protocols* for virtual cluster node id.

b the subgroup number (1-4)

c the member number (1-120)

6.53.4 System response

IP

In progress.

NG

No good.

6.53.5 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

OP:SLK
RMV:SLK

Output Messages:

OP SLK
RST SLK

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6.54 RST:SS7BRD

Application

S7SCH

6.54.1 Description

Restores the Signaling System 7 interface card board (SS7BRD) to service.

6.54.2 Format

RST:SS7BRD=*a-b;*

6.54.3 Parameters

The following parameters are allowed for this command.

a the SS7 Interface Card board group (node) number (0-31). For the configuration of multiple SS7 processes, it means virtual cluster node id. You can refer to for virtual cluster node id.

b the SS7 Interface Card board member (board) number (1-4).

c the SS7 Interface Card board member (board) number (1-120).

6.54.4 System response

IP

In progress.

NG

No good.

RL

Retry later.

6.54.5 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

None.

Output Messages:

OP STATUS SS7BRD
RST SS7BRD

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6.55 RST:SS7NODE

Application

S7SCH

6.55.1 Format

RST:SS7NODE[,MACHINE=a];

6.55.2 Description

Restores the local Signaling System 7 (SS7) node and reconnects it to the SS7 network.

Important! This input message only applies to the distributed SS7 configuration. It will allow a single node in a cluster to be restored.

6.55.3 Parameters

a Machine is rack- chassis- slot

6.55.4 Example

RST:SS7NODE

6.55.5 System response

IP

In Progress.

6.55.6 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

OP:SS7NODE
RMV:SS7NODE

Output Messages:

OP SS7NODE
RMV SS7NODE
RST SS7NODE

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6.56 RST:SSN

Application

SPMAN

6.56.1 Description

Restores to service the specified subsystem number (SSN). Restoring an SSN changes its state from out-of-service (OOS) to in-service (IS). An SSN must be IS in order to accept calls.

6.56.2 Format

RST:SSN=a;

6.56.3 Parameters

The following parameters are allowed for this command.

a the SSN (0, 5-254, 256-318)

6.56.4 System response

NG

No good.

PF

Printout follows.

6.56.5 Additional information and references

The following are additional information sources regarding this input command.

Input Messages:

OP:STATUS.SSN
RMV:SSN

Output Messages:

OP STATUS SSN
RMV SSN
RST SSN

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6.57 SET:ASOCC

Application

S7SCH

6.57.1 Description

Sets the call gap control for Transaction Capabilities Application Part (TCAP) messages with specific codes for ASERI INAP call processing.

6.57.2 Format

SET:ASOCC,KEY=*a*,DIGTYPE=*b*,GAPLVL=*c*,DURLVL=*d*[,OSS=*e*]

6.57.3 Parameters

The following parameters are allowed with this command.

- *a*
  the control code. This is a keyed number of 1 - 10 digits or hex digits [0-9,A-F] depending upon the value in the **DIGTYPE** field.
- *b*
  the type of digits:
  AOSR = Automatic call gapping on SCP received number. The **KEY** used for this digit type is 3 -10 digits.
  AOCLI = Automatic call gapping on calling line identity. The **KEY** used for this digit type is 1 -10 digits.
  AOCID = Automatic call gapping on customer ID. The **KEY** used for this digit type is 1 - 10 digits.
- *c*
  one of the following control gap interval values:
  - 0 = Remove Gap Control
  - 1 = 0.00 seconds
  - 2 = 0.10 seconds
  - 3 = 0.25 seconds
  - 4 = 0.50 seconds
  - 5 = 1.00 seconds
  - 6 = 2.00 seconds
  - 7 = 5.00 seconds
  - 8 = 10.00 seconds
  - 9 = 15.00 seconds
  - 10 = 30.00 seconds
  - 11 = 60.00 seconds
  - 12 = 120.00 seconds
  - 13 = 300 seconds
  - 14 = 600.00 seconds

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- 15 = Stop All Calls

- *d*

  one of the following control duration level values:
  - 0 = not Used
  - 1 = 1 second
  - 2 = 2 seconds
  - 3 = 4 seconds
  - 4 = 8 seconds
  - 5 = 16 seconds
  - 6 = 32 seconds
  - 7 = 64 seconds
  - 8 = 128 seconds
  - 9 = 256 seconds
  - 10 = 512 seconds
  - 11 = 1024 seconds
  - 12 = 2048 seconds
  - 13 = 4096 seconds

- *e*

  this is an optional parameter. When *e* = NTM, the CEP runs in the foreground. The command prompt line appears after the CEP command completes. NetMinder/NTM uses this as a command response delimiter.

6.57.4 System response

NG

No good.

PF

Printout follows.

6.57.5 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CANC:ASOCC
OP:ASOCC

Output Messages:

CANC ASOCC
OP ASOCC
SET ASOCC

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6.58 SET:BOOTLVL

Application

INIT

6.58.1 Description

Sets default system run level used on the next system boot. The following is applicable with the Active-Active feature: the **SET:BOOTLVL** command will not accept the **MACHINE** parameter and will only apply to Control Server`s (CSs) (i.e. not applicable to Telcom Servers). The **SET:BOOTLVL** command must synchronize the "initlist" on the Lead and Active Control Servers (Lead Control Server "initlist" is master), **SET:BOOTLVL** in "initlist" is on both sides.

Important! The inability to update the initlist on the Active Control Server implies that the **SET:BOOTLVL** command should be rerun when both Control Server are in service.

6.58.2 Format

SET:BOOTLVL=a;

6.58.3 Parameters

a

one of the following values:

20=";Day 1"; boot.

30=Database only.

80=full system.

90=full system, automatically start provisioned Service Package Applications (SPAs).

91-255=user-defined run levels.

6.58.4 System response

PF

Printout follows.

6.58.5 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

SET:RUNLVL

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Output Messages:

```
SET BOOTLVL
```

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6.59 SET:RUNLVL

Application

INIT

6.59.1 Description

Note: Inappropriate use of this message may interrupt or degrade service. Read the Description section carefully.

Set system run level to a selected value. This input message causes the INIT subsystem to reread the *initlist* and start any processes set to run at or below the entered system run level that has not already been restarted.

Important! If **SET:RUNLVL** causes a restart of any process that was previously removed from a running system, there is no guarantee that the functionality of the restarted process will be correct. Only non-critical processes are guaranteed to be functionally correct after a **SET:RUNLVL** initiated restart. All other processes have to be restarted through a system-init.

6.59.2 Format

SET:RUNLVL=*a*[,MACHINE=*b*];

6.59.3 Parameters

The following parameters are allowed with this command.

- *a*
  the new system run level used to determine which new process entries of the `initlist` should be started.
- *b*
  Machine is rack- chassis- slot.

Important! The value entered for the variable *a*must be at or above the current system run level (0-255). The **OP:INIT** input message can be used to determine the current system run level. If **a=0**, the requested run level value is reset to the run level currently in effect, i.e., if current system run level is 100, executing **SET:RUNLVL=0** is equivalent to **SET:RUNLVL=100**.

6.59.4 System response

`PF`

Printout follows.

6.59.5 Additional information and references

The following are additional information sources regarding this command.

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Input Messages:

OP:INIT
SET:BOOTLVL

Output Messages:

SET RUNLVL

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6.60 SET:SOCC

Application

S7SCH

6.60.1 Description

Sets the call gap control for Transaction Capabilities Application Part (TCAP) messages with specific codes for the ANSI protocol.

6.60.2 Format

SET:SOCC,KEY=*a*{,DIGTYPE=*b*|TRANSTYPE=*c*},GAPLVL=*d*,DURLVL=*e*;

6.60.3 Parameters

The following parameters are allowed with this command.

- *a*
  controlled code. Keyed number with 3, 6, 7, 8, 9 or 10 digits.
- *b*
  type of digits:
  DIALED = called number.
  ANI = calling number.
- *c*
  translation type (0-255).
- *d*
  one of the following control gap interval values:
  - 0 = Remove Gap Control
  - 1 = 0.00 seconds
  - 2 = 0.10 seconds
  - 3 = 0.25 seconds
  - 4 = 0.50 seconds
  - 5 = 1.00 seconds
  - 6 = 2.00 seconds
  - 7 = 5.00 seconds
  - 8 = 10.00 seconds
  - 9 = 15.00 seconds
  - 10 = 30.00 seconds
  - 11 = 60.00 seconds
  - 12 = 120.00 seconds
  - 13 = 300 seconds
  - 14 = 600.00 seconds
  - 15 = Stop All Calls

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- e

  one of the following control duration level values:
  - 0 = not Used
  - 1 = 1 second
  - 2 = 2 seconds
  - 3 = 4 seconds
  - 4 = 8 seconds
  - 5 = 16 seconds
  - 6 = 32 seconds
  - 7 = 64 seconds
  - 8 = 128 seconds
  - 9 = 256 seconds
  - 10 = 512 seconds
  - 11 = 1024 seconds
  - 12 = 2048 seconds
  - 13 = 4096 seconds

6.60.4 System response

NG

No good.

PF

Printout follows.

6.60.5 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CANC:SOCC

Output Messages:

SET SOCC

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6.61 SND:ALCLEAR

Application

SNMP

6.61.1 Description

Sends an alarm clear message to the Element Management System for a particular alarm with given alarm index or to clear the alarms based on given criteria that are not automatically cleared.

6.61.2 Format

SND:ALCLEAR, [ALINDEX=a],[SEV=b],[AGE=c]

6.61.3 Parameters

The following parameters are allowed with this command.

a = The index of the alarm to be cleared. The index for the alarm to be cleared can be obtained by executing the Input OP:ALMTABLE

b = perceived Severity of the alarms, should be one of these values.

CRIT – Critical Severity

MAJ – Major Severity

MIN – MINOR Severity

Note: Clearing X.733 alarms based on severity is not supported. It is for non-X.733 alarms only.

c = maximum age in hours.

6.61.4 System response

IP

In Progress.

6.61.5 Additional Information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

SND,ALCLEAR

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6.62 TRACE:PROC

Application

USLI

6.62.1 Description

Note: Setting trace flags to ON may generate many output messages. This will affect system performance.

Sets or clears debugging flags for the specified process. When flags are set, they are added to the currently set flags. There are two special flag names. The ON flag sets all trace flags for the specified process and OFF clears all trace flags for a specified process. Additional flag names are defined in the */sn/cr/tracedir/traceflags* file.

6.62.2 Format

TRACE:PROC=*a*,MODE=*b*[,MACHINE=c][,CLIENT=*d*];

6.62.3 Parameters

a a single process name or ALL.

If the process name is specified, and the **MACHINE** parameter is not specified, the commands will display one line of process information per process per machine on which the process is running. In this case, the ALL argument is not allowed.

b the trace flag name or a list of values. Values are assumed to be decimal (a four digit number) used to turn the trace on, unless prefixed with H. Lists (denoted with &) of numeric values are permitted. This is a string of 1-80 characters. To set trace flags to OFF for all processes, specify MODE=OFF.

c Machine is rack- chassis- slot.

For platforms supporting distributed SPAs. If the trace is sent to a non-client process, the default machine is the process which is active. If the trace is sent to a client, the default machine is arbitrarily selected.

d traces the specified client process 1 to 8.

The user can specify the value ALL. If the value ALL is specified, the trace is based on one of the following conditions:

If the MACHINE parameter specifies a machine, the trace is sent to every running client on the specified machine.

If the MACHINE parameter is not given, the trace is sent to every running client on all machines.

6.62.4 System response

OK

Successful.

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NG-PROCESS DOES NOT EXIST OR IS NOT REGISTERED

No good.

The process specified does not exist.

NG-NOT ALLOWED TO TURN TRACE ON FOR ALL PROCESSES

No good.

All trace bits may not be set for all processes, since it will overload the system.

NG-INVALID MODE VALUE

No good.

An undefined trace flag name was specified.

NG-MODE VALUE IS OUT OF RANGE

No good.

A numeric value outside the legal range (0-2047) was specified.

NG - CANNOT RUN TRACE WITH MODE=ON WHEN PROC=SPA

No good.

Running all traces for an SPA will overload the system.

RL - CANNOT DETERMIME PROCESS TYPE

The trace command execution program (CEP) was unable to attach to the SPMAN process.

6.62.5 Additional information and references

The following are additional information sources regarding this input command.

Input messages

None.

Output messages

REPT DEBUG

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6.63 TRAP:ASSOC

Application

STSCH

6.63.1 Description

Sets a trap for incoming and outgoing SCTP messages for the specified association. Selected SCTP messages are output to the debuglogs, based on specified control parameters and message matching criteria.

6.63.2 Format

TRAP:ASSOC=*a-b[,DIR=c][,DUR=d[,TOT=e][,RATE=f];* NOTE: For N+K
TRAP:ASSOC=*b[,DIR=c][,DUR=d[,TOT=e][,RATE=f];* NOTE: For NON N+K

6.63.3 Parameters

a node number (0-15). This MUST be set to the local node value.

b the association number (1-42).

c the direction of messages, either IN (output-only incoming messages), OUT (output-only outgoing messages), or BOTH (output both incoming and outgoing messages). BOTH is the default.

d the trap duration, in the format "hhmm." The default is 5 min (0005). When the specified amount of time has passed, the trap becomes obsolete.

e the number of messages to collect (1-2000). The default is 10. When the specified number of messages has been collected, the trap becomes obsolete. A trap is complete when either *DUR* or *TOT* is fulfilled, whichever occurs first.

f the rate at which messages will be collected (1-5000). The default is 100. For example, if *RATE*=5, one of every five messages is collected.

6.63.4 System response

IP

In progress

NG

No good.

INVALID ASSOCIATION_INDEX COMPONENT, VALID RANGE 1-42

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "b" outside the valid range of 1-42.

INVALID NODE_ID COMPONENT, VALID RANGE 0-15

System is configured as N+K and the ASSOC argument "a-b" entered contained a value for "a" outside the valid range of 0-15.

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WHEN CLUSTERED, ASSOC MUST USE COMPOUND ARGUMENT(A-B)

System is configured as N+K and either a single value was attempted for ASSOC OR a string was entered that was not a valid compound argument with format (a-b).

WHEN NOT CLUSTERED, ASSOC MUST USE SINGLE ARGUMENT(B)

System is NOT configured as N+K and either a compound value was attempted for ASSOC OR a string was entered that was not a valid single argument with format (b).

6.63.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

```
TRAP ASSOC
```


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Output messages

6.64 Overview

6.64.1 Purpose

Subsystems of the IN network elements output various messages to indicate that certain actions have been performed or that specific events have occurred. Technical personnel use the information in output messages to aid them in diagnosing and maintaining the network elements.

6.64.2 Contents

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6.83 OP LS	495
6.84 OP LSRPI	498
6.85 OP LSST	500
6.86 OP LSXL	502

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6.87 OP MEAS	504
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6.65 Output message components

6.65.1 Description

This documentation is divided into the following sections for each output message:

- Message ID
- Platform
- Application
- Message class
- Reason for output
- Alarm identifiers
- Format
- Parameters
- Action to be taken
- Additional information and references

6.65.2 Platform

The Output Messages apply to all platforms except where it is explicitly stated otherwise.

6.65.3 Application

The subsystem that applies to the output message.

6.65.4 Message class

The message class defines the routing destinations for output messages.

6.65.5 Reason for output

The "Reason for output" section describes the system conditions or the input message that caused a specific output message to be generated.

If multiple formats exist for an output message, the reasons for output may be different for each format. The multiple reasons are presented in a numbered list, where the number given to each reason corresponds to the number of the appropriate format in the "Format" section.

For the example, formats [1] and [2] of the `REPT APORT` output message are printed for the following reasons, respectively:

1. Reports that an asynchronous communications (ASYNC) serial port is in the out-of-service (OOS) state because the component failed.

   The alarm level for a failure depends on the application that uses the port. The output message is not printed when the port is OOS because its ASYNC controller is OOS.

2. Reports that an ASYNC port is in the `ACTIVE` state.

   The output message is not printed when the port was previously OOS due to its ASYNC controller being OOS.

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6.65.6 Alarm identifiers

Alarm identifiers indicate which alarms correspond to each format listed in the Format section.

The following table describes the fields in the Alarm identifiers table.

Format	OM key	Repeat	Alarm level
Numbers in the Format column correspond to appropriate formats in the Format section.	The OM key is displayed in Field 5 of the output message and points to an output message format that is defined in Form 2.3:USL OUTPUT MESSAGE DEFINITION FORM. NA indicates that the OM key is not in the OMDB. For more information about output message fields, see the next topic in this document, *Output message header and trailer*.	Repeat indicates whether the alarm repeats until an action is taken. Actions corresponding to the format number are listed in Actions to be taken section.	Alarm level indicates if there is an alarm condition and the severity of the alarm condition.

6.65.7 Format

The Format section lists the different forms in which the system may output the message. Variables, which appear in this document as letters printed in bold italics, are assigned to fields whose contents may vary. Any options or other information that might appear in the output message (depending on certain system conditions or on which options were specified in an input message) will be enclosed in brackets. For example, in the following message, *a* is a variable, and **[UCL]** is an option that may or may not have been specified in the input message:

RMV SCSI= *a* **[UCL] COMPLETED**

Some output messages will be output in only one format while others may have many possible formats, depending on certain conditions within the system or on what was requested by an input message. If multiple formats exist for an output message, the different formats are presented in a numbered list.

The following example shows two formats of the REPT APORT output message (the UCL option was added for illustrative purposes only and does not exist in the actual message).

1. REPT APORT= *a*-*b*-*c* [**,UCL**]OOS
2. REPT APORT= *a*-*b*-*c* ACTIVE

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6.65.8 Parameters

The "Parameters" section describes the various variables and options that may be contained in the output message.

For the `REPT APORT` output message, variables ***a*** and ***b*** represent the following values:

`a` the ASYNC Controller Module number (0 or 1).

`b` the ASYNC serial port number (0-15).

6.65.9 Action to be taken

The "Action to be taken" section specifies the actions (if any) that should be performed in response to a specific output message.

If the output message has multiple formats, a specific action may be required for each of the different formats. The actions to be taken are presented in a numbered list, where the number given to each action to be taken corresponds to the number of the appropriate format in the Format section.

For the example, formats [1] and [2] of the `REPT APORT` output message require that the following actions to be taken:

1. Determine the cause of the component being `OOS`. Attempt to restore the component using the **`RST:APORT`** input message.
2. For information only. No action necessary.

6.65.10 Additional information section

This section lists all related input and output messages. References to display actions pages and to other documents are included in this section when applicable.

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6.66 Output message header and trailer

6.66.1 Overview

This section describes the output message header and trailer fields. The numbers in parentheses are given for reference only and do not appear in the actual output messages.

```
      (1)              (2)          (3)       (4)       (5)
+++SCP18678901   2004-09-29   15:49:03   MAINT1   /CR019

  (6)              (7)       (8)           (9)
#000013          SEG#0     0-0-9           M

     (10)
OP RTGTBL SUM IN PROGRESS TAG=6433
     (11)
  ::outofService::equipmentAlarm::ARU::OOS::Alarm unit OOS::

   (12)
END OF REPORT#000013++-
```

6.66.2 Field 1

The UNIX machine name (or office name). The report begins with a +++, which indicates that this is the start of the message.

6.66.3 Field 2

The date format. The default is *YYYY-MM-DD* where:

YYYY=year

MM=month

DD=day

6.66.4 Field 3

The time format. The default is *HH-MM-SS* where:

HH=hour

MM=minutes

SS=seconds

6.66.5 Field 4

The message class defines the routing destinations for output messages. Message classes are defined in Form 2.2: USL MESSAGE CLASS DEFINITION FORM.

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6.66.6 Field 5

The Output Message Database (OMDB) key points to an output message format that is defined in Form 2.3: USL OUTPUT MESSAGE DEFINITION FORM.

6.66.7 Field 6

The sequence number is a sequential number between 000001 and 999998 per report destination or message class type. The value `999999` is reserved for when the spooler (CSOP) is down and a sequence number cannot be determined.

6.66.8 Field 7

The segment number. Very long messages are output in segments. The header for each portion of the output message generated will contain a segment number.

6.66.9 Field 8

The RACK-CHASSIS-SLOT of the processor that generated the message.

6.66.10 Field 9

Either white space or one of the following values displays in this field:

`A` = an automatically generated message

`M` = a manually generated message

`*C` = a critical alarm

`**` = a major alarm

`*` = a minor alarm

`TC` = a transient critical alarm

`TJ` = a transient major alarm

`TN` = a transient minor alarm

6.66.11 Field 10

The body of the output message. The output messages appear in alphabetical order in this document based on what appears in this field.

6.66.12 Field 11

X733 values are displayed here when the X733 reporting is ON. (See Form 2.18.)

`a` is the Probable cause

`b` is the alarm type

`c` is the object name

`d` is the specific problem

`e` is additional text, at the end of the additional text field will be printed a ; along with the alarm id i.e.

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```
;915019
```

6.66.13 Field 12

The sequence number is associated with the header. The end of the report is followed by a `++-`, which indicates that there is no more information in this message.

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6.67 Audit message formats

6.67.1 Overview

A Message Handler (MSGH) audit message may appear during a recent change and verify (RC/V) session. Audits run periodically to free up system resources that were used by processes which are no longer active. These output messages do not indicate a problem, and no action is required.

Audit messages appear in the following format:

MHaudit: `CLEANED UP OLD QUEUE FOR MSQID=`*`a`* `PID=` *`b`* `NAME=` *`c`*

where

`a` is the MSGH Queue ID (QID).

`b` is the process ID.

`c` is the name that was registered with MSGH.

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6.68 ALW SLK

Application
S7SCH

Message class
MAINT

6.68.1 Reason for output

All six formats report the processing status of the **ALW:SLK** input message.

6.68.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7162	No	None
3	/S7177	No	None
4	/S7178	No	None
5	/S7179	No	None
6	/S7180	No	None
7	/S7212	No	None

6.68.3 Format

Six possible formats exist for this command:

1. `ALW SLK= a-b - c COMPLETED SUCCESSFULLY`
2. `ALW SLK= a - b - c FAILED - LINK IS UNEQUIPPED`
3. `ALW SLK= a - b - c FAILED - LINK ALREADY LOCAL UNINHIBITED`
4. `ALW SLK= a - b - c FAILED - LOCAL DENIED`
5. `ALW SLK= a - b - c FAILED - REMOTE END DENIED`
6. `ALW SLK= a - b - c FAILED - NO RESPONSE FROM REMOTE END`
7. `ALW SLK= a - b - c FAILED, ONLY LOCAL NODE CAN BE APPLIED`

6.68.4 Parameters

`a` the Group number (0-31).

`b` the Subgroup number (1-4).

`c` the Member number (1-120).

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6.68.5 Action to be taken

The following are actions to be taken for this command:

1. For information only.
2. Enter the **OP:SLK** input message to check the status of the specified link.
3. Enter the **OP:SLK** input message to check the status of the specified link.
4. Seek the next level technical assistance.
5. Check the remote end status.
6. Reenter the **ALW:SLK** input message. If this message continues to occur, seek the next level technical assistance.
7. Check the SS7 node ID, then reenter the **ALW:SLK** input message in the local node.

6.68.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

ALW:SLK
CHG:SLK
INH:SLK
OP:SLK

Output Messages:

None.

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6.69 AUD MATESSN

Application

SPSUP/SPMAN

Message class

MAINT

6.69.1 Reason for output

Report the results of the audit input message **AUD:MATESSN**.

Only discrepancies in the local copy of mate Subsystem Number (SSN) status are reported. An empty list indicates no discrepancies. The discrepancy list indicates which data was updated in SPMAN`s local copy of the mate SSN status data. The state values displayed are the updated values.

6.69.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SA058	No	None
2	/SA058	No	None
3	/SA058	No	None
4	/SA058	No	None
5	/SA058	No	None
6	/SA058	No	None
7	/SA058	No	None
8	/SA058	No	None

6.69.3 Format

The following formats are listed for this command.

1. `AUD MATESSN SUCCESSFULLY COMPLETED. SSN UPDATES FOLLOW.`

```
   SSN            SSN STATE
----------      ----------------
   a                b
   :                :
```

2. `AUD MATESSN FAILED - on send to SPMAN`
3. `AUD MATESSN FAILED - internal set timer error = c`

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4. `AUD MATESSN FAILED - cannot set timer, error = c`
5. `AUD MATESSN FAILED - internal get event error = c`
6. `AUD MATESSN FAILED - get event error = c`
7. `AUD MATESSN FAILED - bad acknowledgment`
8. `AUD MATESSN FAILED - REASON d`

6.69.4 Parameters

`a` the SSN (0, 5-254).

`b` one of the following SSN states:

IS

OOS

DIS

`c` an error code.

`d` a description of the error.

6.69.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.
3. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.
4. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.
5. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.
6. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.
7. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.
8. Reenter the **AUD:MATESSN** input message. If the error persists, seek the next level of technical assistance.

6.69.6 Additional information and references

The following are additional information sources regarding this command.

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Input Messages:

AUD:MATESSN

Output Messages:

None.

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6.70 CHG LS

Application
S7SCH

Message class
MAINT

6.70.1 Reason for output

Report the processing status of the input message **CHG:LS**.

6.70.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7007	No	None
3	/S7087	No	None
4	/S7008	No	None
5	/S7151	No	None
6	/S7037	No	None
7	/S7213	No	None
8	/S7213	No	None

6.70.3 Format

The following formats are listed for this command.

1. `CHG LS= a b [,UCL] COMPLETED SUCCESSFULLY`
2. `CHG LS= a b [,UCL] FAILED - LINKSET IS NOT EQUIPPED`
3. `CHG LS= a b [,UCL] FAILED - ALREADY OUT OF SERVICE`
4. `CHG LS= a OOS [,UCL] FAILED - ONLY DIRECT LINKSET CAN BE DEACTIVATED`
5. `CHG LS= a OOS FAILED - USE UCL FOR THE LAST NORMAL LINKSET`
6. `CHG LS= a IS [,UCL] FAILED - SCP IS INACTIVE`
7. `CHG LS= a IS FAILED, ONLY SS7 MASTER NODE CAN APPLY CHG:LS`
8. `CHG LS= a OOS [,UCL] FAILED, ONLY SS7 MASTER CAN APPLY CHG:LS`

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6.70.4 Parameters

a the linkset number (from 1 to 32).

b one of the following:

IS - Activate the linkset and put it in-service.

OOS - Deactivate the linkset and put it out-of-service.

UCL unconditional execution. This option must be specified if you are changing the last normal linkset in the system to OOS.

6.70.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Enter the **OP:LS** input message to check the current status of the linkset.
3. Seek the next level of technical assistance.
4. Enter the **OP:LS** input message to check the current status of the linkset.
5. Reenter the **CHG:LS** input message using the UCL option.
6. Cannot activate the linkset unless the **RST:SCP** command is executed.
7. Use the **OP:SS7MASTER** command to get the master machine name and reenter the **CHG:LS** input message in the master node.
8. Use the **OP:SS7MASTER** command to get the master machine name and reenter the **CHG:LS** input message in the master node.

6.70.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CHG:LS

OP:LS

RST:SCP

Output Messages:

None.

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6.71 CHG SLK

Application
S7SCH

Message class
MAINT

6.71.1 Reason for output

Report the processing status of the input message **CHG:SLK**.

6.71.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7162	No	None
3	/S7165	No	None
4	/S7166	No	None
5	/S7171	No	None
6	/S7175	No	None
7	/S7212	No	None
8	/S7212	No	None

6.71.3 Format

The following formats are listed for this command.

1. `CHG SLK= a - b - c d COMPLETED SUCCESSFULLY`
2. `CHG SLK= a - b - c d FAILED - LINK IS UNEQUIPPED`
3. `CHG SLK= a - b - c d FAILED - LINK ALREADY BLOCKED`
4. `CHG SLK= a - b - c d FAILED - LINK ALREADY UNBLOCKED`
5. `CHG SLK= a - b - c BLK FAILED - CAN NOT BLOCK LAST AVAILABLE LINK CONDITIONALLY`
6. `CHG SLK= a - b - c UBLK FAILED - CHG:SLK COMMAND IS NOT ALLOWED FOR SAAL LINKS`
7. `CHG SLK= a - b - c BLK FAILED, ONLY LOCAL NODE CAN BE APPLIED`
8. `CHG SLK= a - b - c UBLK FAILED, ONLY LOCAL NODE CAN BE APPLIED`

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6.71.4 Parameters

a the Group number (0-31).

b the Subgroup number (1-4).

c the Member number (1-120).

d one of the following:

BLK- Block the link.

UBLK- Unblock the link.

6.71.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Enter the **OP:SLK** input message to check the status of the specified link.
3. Enter the **OP:SLK** input message to check the status of the specified link.
4. Enter the **OP:SLK** input message to check the status of the specified link.
5. Enter **CHG:SLK=a-b-c,BLK,UCL** to block the last available link.
6. For information only. Enter **RMV:SLK,UCL** to remove link from service.
7. Check the SS7 node ID, then re-enter the **CHG:SLK** input message in the local node.
8. Check the SS7 node ID, then re-enter the **CHG:SLK** input message in the local node.

Note: Blocking the last available link unconditionally will cause the platform to be isolated from the network.

6.71.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CHG:SLK

INH:SLK

OP:SLK

RST:SLK

Output Messages:

None.

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6.72 CLR ALMTBL

Application
SNMP

Message class
MAINT

6.72.1 Platform

Applicable to all platforms except where explicitly stated.

6.72.2 Reason for output

Reports the processing status of the **CLR:ALMTBL** input message.

6.72.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	NM008	No	None
2	NM009	No	None

6.72.4 Format

The following formats are listed for this command.

1. `CLR ALMTBL COMPLETED`
2. `CLR ALMTBL FAILED`

6.72.5 Parameters

None.

6.72.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Check the OMlog and debuglog for additional error information.

6.72.7 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CLR:ALMTBL

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Output Messages:

None.

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6.73 CLR:TRAP,ASSOC

Application
STSCH

Message class
MAINT

6.73.1 Platform

Applicable to all platforms except where explicitly stated.

6.73.2 Reason for Ouput:

Reports the output of the **CLR:TRAP,ASSOC** input message

6.73.3 Alarm Identifiers:

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1		NO	None
2		NO	None
3		NO	None

6.73.4 Format:

The following formats are listed for this command.

1. `CLR TRAP ASSOC= [a-b,b] COMMAND COMPLETED SUCCESSFULLY`
2. `CLR TRAP ASSOC= [a-b,b] FAILED - TRAP IS NOT SET FOR ASSOCIATION [a-b,b]`
3. `CLR TRAP ASSOC= a FAILED - TRAP IS NOT SUPPORTED FOR NON-M3UA ASSOCIATIONS`

6.73.5 Parameters:

`a` node number (0-15)

`b` Association number (1-42)

6.73.6 Actions to be taken:

The following corrective actions are listed below.

1. None. This message is for information only.
2. None. This message is for information only.
3. None. This message is for information only.

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6.73.7 Additional Information and References:

The following are additional information sources regarding this command:

Input Messages:

CLR:TRAP,ASSOC

Output Messages:

None.

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6.74 DGN SS7BRD

Application
S7SCH

Message class
MAINT

6.74.1 Platform

Applicable to all platforms except where explicitly stated.

6.74.2 Reason for output

The following describes the reason for output when executing this command.

1. The specified SS7 Interface Card board (SS7BRD) has been completely diagnosed, and all tests passed (ATP).
2. The specified SS7BRD did not pass the loopback test.

6.74.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7155	No	None
2	/S7158	No	None
3	/S7212	No	None

6.74.4 Format

The following formats are listed for this command.

1. **DGN SS7BRD=** *a*-*b* COMPLETED ATP
2. **DGN SS7BRD=** *a* **-** *b* **FAILED, CHECK LOOPBACK CONNECTION**
3. **DGN SS7BRD=** *a* **-** *b* **FAILED, ONLY LOCAL NODE CAN BE APPLIED**

6.74.5 Parameters

a the Group Number (0-15).

b the member number (1-6).

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c the state of the equipment:

ALL All equipment states.

UNEQUIP Unequipped units.

OOS Out of service.

DIAGNOSE Diagnostics are running.

OOSWAIT Out of service. Waiting for an external event.

INIT Initialization.

STANDBY Ready, but not handling calls.

ACTIVE In service.

CAMP In service, but not accepting new allocations.

GROWTH In the process of being added to the system.

d one of the following reasons:

MAN Manual action.

AUTO Automatic.

INIT Initialization.

HWERROR Hardware error.

CLEAN Due to failure of parent equipment.

SWERROR Software error.

HARDWARE Hardware state change.

e flags: not used.

6.74.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Check the loopback connection to make sure both parts are connected by loopback connectors. If this is not the problem, check for a bad SS7 board.
3. Check the SS7 node ID, then reenter the **DGN:SS7BRD** input message in the local node.

6.74.7 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

DGN:SS7BRD
OP:STATUS,SS7BRD

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Output Messages:

None.

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6.75 DUMP MEAS

Application
MEAS, S7SCH

Message class
MAINT

6.75.1 Reason for output

Reports the current measurement values that have been collected since the last regular measurement report. Content of the report is variable based on the type, the name, or the collection interval of measurement tables requested in the **DUMP:MEAS** command. Items reported will be similar to that defined in the regular measurement report.

A heading for the type of measurement requested and the names and values for each of the fields in the measurement table that is requested are printed.

6.75.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7022, /S7023, /S7024, /S7025, /S7026, /S7027, /S7028, /S7029, /S7030, /S7031, /S7032, /S7033, /S7034, /S7035, /S7062, /S7063, /S7064, /S7065, /S7066, /S7067, /S7068, /S7069, /S7071, /S7102, /S7105, /S7106, /S7107, /S7108, /S7109, /S7110, /SG013, /SG014, /S7237, /S7238, /S7239	No	None

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Format	OM key	Repeat	Alarm level
1	/S7111, /S7112, /S7121, /S7124, /S7125, /S7126, /S7127, /S7128, /S7129, /S7130, /S7131, /S7135, /S7136, /S7141, /S7143, /S7223, /S7224, /S7225, /S7226, /S7227, /S7228, /S7229, /S7230, /S7231, /S7232, /S7233, /S7234	No	None
2	/S7050	No	None
3	/S7049	No	None
4, 5	/MS026	No	None
6, 7, 8, 9, 10, 11	/MS020	No	None
12	/MS038	No	None

6.75.3 Format

The following formats are listed for this command.

1. **DUMP MEAS TYPE=** *a*
2. **DUMP MEAS TYPE=** *a* **COMPLETED. NO DATA TO BE DUMPED.**
3. **DUMP MEAS TYPE=** *a* **FAILED. PREVIOUS DUMP IN PROGRESS.**
4. **DUMP MEAS TABLE=** *b* **FILE=** *c* **SILENT COMPLETED**
5. **DUMP MEAS INTERVAL=** *d* **FILE=** *c* **SILENT COMPLETED**
6. **DUMP MEAS TABLE=** *b* **FAILED**

   e
7. **DUMP MEAS TABLE=** *b* **FILE=** *c* **FAILED**

   e
8. **DUMP MEAS TABLE=** *b* **FILE=** *c* **SILENT FAILED**

   e
9. **DUMP MEAS INTERVAL=** *d* **FAILED**

   e
10. **DUMP MEAS INTERVAL=** *d* **FILE=** *c* **FAILED**

    e

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11. **DUMP MEAS INTERVAL=** *d* **FILE=** *c* **SILENT FAILED**

    e

12. **DUMP MEAS INTERVAL=** *d* **COMPLETED**

    DUMP MEAS NOT SUPPORTED FOR

    f

    NO DATA TO BE DUMPED FOR

    g

6.75.4 Parameters

a the type of measurement report requested.

APPL Application related measurement counter.

ATM ATM layer measurement counter.

FEP Front End Processor measurement counter.

INTERNAL the measurement data related to the internal SPA messages.

LINK Link related measurement counter.

M3UASCCP = MTP Level 3 User Adaptation(M3UA) Signaling Connection Control Part (SCCP) counters

M3UACLU = MTP Level 3 User Adaptation(M3UA) Cluster counters

MTP Message Transfer Part (MTP) measurement counters.

SAAL Signalling Asynchronous Transfer Mode (ATM) adaptation layer measurement counter.

SCCP Signaling Connection Control Part (SCCP) measurement counters.

CLUSTER Cluster node traffic measurement counters.

ROUTE Adjacent Pointcode connectivity measurement.

GTT Global Title Translation (GTT) traffic measurement counters.

b name of a measurement table.

c absolute path to output file to which report(s) will be appended.

d collection interval (TRFC5, TRFC15, TRFC30, PLNTHR, or PLNT24)

e reason for failure

f list of table names not supported for DUMP:MEAS, one name per line.

g list of table names which have no data to be dumped, one name per line.

6.75.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.

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3. Reenter the **DUMP:MEAS** input message after about a minute.
4. For information only.
5. For information only.
6. Depending upon reason for failure.
7. Depending upon reason for failure.
8. Depending upon reason for failure.
9. Depending upon reason for failure.
10. Depending upon reason for failure.
11. Depending upon reason for failure.
12. For information only.

6.75.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

DUMP:MEAS

Output Messages:

None.

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6.76 INH RESTART

Application
INIT

Message class
MAINT

6.76.1 Reason for output

Reports the processing status of the input message **INH:RESTART**.

6.76.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/IN005	No	None
2	/IN007	No	None
3	/IN008	No	None
4	/IN009	No	None
5	/IN010	No	None
6	/IN000	No	None
7	/IN001	No	None
8	/IN002	No	None
9	/IN003	No	None
10	NA	No	None
11	/IN006	No	None

6.76.3 Format

The following formats are listed for this command.

1. **INH RESTART PROC=** *a* **COMPLETED**
2. **INH RESTART PROC=** *a* **FAILED - PROC** *a* **DOES NOT EXIST**
3. **INH RESTART PROC=** *a* **FAILED -** *a* **IS SCHEDULED FOR REMOVAL FROM SYSTEM**
4. **INH RESTART PROC=** *a* **FAILED - PROC** *a* **, UNKNOWN ERROR** *b* **RECEIVED FROM INIT**
5. **INH RESTART PROC=** *a* **FAILED TO RECEIVE RESPONSE FROM INIT**
6. **INH RESTART PROC=** *a* **FAILED TO GET MSGH QID, ERROR** *b*
7. **INH RESTART PROC=** *a* **FAILED TO SEND REQUEST TO INIT, ERROR** *b*
8. **INH RESTART PROC=** *a* **RECEIVED MESSAGE FAILED, ERROR** *b*

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9. **INH RESTART PROC=** *a* **RECEIVED INVALID ACK RESPONSE, SIZE** *c* **(EXPECTED** *d* **)**
10. **INH RESTART PROC=** *a* **RECEIVED INVALID ACK RESPONSE - PROC RESTART IS ALLOWED**
11. **INH RESTART PROC=** *a* **RECEIVED INVALID FAILURE MESSAGE, SIZE** *c* **EXPECTED** *d* **)**

6.76.4 Parameters

a the name of the process.

b an error message and the error code.

c the actual size.

d the expected size.

6.76.5 Action to be taken

None. This message is for information only.

6.76.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

ALW:RESTART
INH:RESTART
OP:RESTART

Output Messages:

None.

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6.77 INH SLK

Application
S7SCH

Message class
MAINT

6.77.1 Reason for output

Report the processing status of the input message **INH:SLK**.

6.77.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7162	No	None
3	/S7176	No	None
4	/S7178	No	None
5	/S7179	No	None
6	/S7180	No	None
7	/S7212	No	None

6.77.3 Format

The following formats are listed for this command.

1. **INH SLK=** *a*-*b*-*c* **COMPLETED SUCCESSFULLY.**
2. **INH SLK=** *a*-*b*-*c* **FAILED - LINK IS UNEQUIPPED**
3. **INH SLK=** *a*-*b*-*c* **FAILED - LINK ALREADY LOCAL INHIBITED**
4. **INH SLK=** *a*-*b*-*c* **FAILED - LOCAL DENIED**
5. **INH SLK=** *a*-*b*-*c* **FAILED - REMOTE END DENIED**
6. **INH SLK=** *a*-*b*-*c* **FAILED - NO RESPONSE FROM REMOTE END**
7. **INH SLK=** *a*-*b*-*c* **FAILED, ONLY LOCAL NODE CAN BE APPLIED**

6.77.4 Parameters

a the Telecom Server (0-31).

b the SS7 board number (1-4).

c the port number associated with the specified link (1-120).

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6.77.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Use the **OP:SLK** input message to check the status of the specified link.
3. Use the **OP:SLK** input message to check the status of the specified link.
4. Check whether the specified link is the last available link to a particular destination, or the far end of the specified link is inaccessible. If neither condition is true, seek the next level of technical assistance.
5. Check the remote end status.
6. Reenter the **INH:SLK** input message. If the problem persists, seek the next level of technical assistance.
7. Check the SS7 node ID, then reenter the **INH:SLK** input message in the local node.

6.77.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

ALW:SLK
CHG:SLK
INH:SLK
OP:SLK

Output Messages:

None.

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6.78 INIT PROC

Application
INIT

Message class
MAINT

6.78.1 Reason for output

Reports the processing status of the **INIT:PROC** input message.

6.78.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/IN014	No	None
2	/IN000	No	None
3	/IN001	No	None
4	/IN002	No	None
5	/IN003	No	None
6	/IN012	No	None
7	/IN013	No	None
8	/IN006	No	None
9	/IN015	No	None
10	/IN016	No	None
11	/IN017	No	None
12	/IN007	No	None
13	/IN008	No	None
14	/IN009	No	None
15	/IN010	No	None
16	/IN040	No	None
17	/IN049	No	None
18	/DI000	No	None

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6.78.3 Format

The following formats are listed for this command.

1. `INIT PROC= a LEVEL= b REQUEST SUCCESSFULLY ACKNOWLEDGED`
2. `INIT PROC= a LEVEL= b FAILED TO GET MSGH QID, ERROR c`
3. `INIT PROC= a LEVEL= b FAILED TO SEND REQUEST TO INIT, ERROR c`
4. `INIT PROC= a LEVEL= b RECEIVE MESSAGE FAILED, ERROR c`
5. `INIT PROC= a LEVEL= b RECEIVED INVALID ACK RESPONSE, SIZE d (EXPECTED d )`
6. `INIT PROC= a LEVEL= b REQUEST ACKNOWLEGED WITH RECOVERY LEVEL b (EXPECTED b )`
7. `INIT PROC= a LEVEL= b REQUEST ACKNOWLEDGED WITH WRONG PROC NAME - " a "`
8. `INIT PROC= a LEVEL= b RECEIVED INVALID FAILURE MESSAGE, SIZE d (EXPECTED d )`
9. `INIT PROC= a LEVEL= b RECEIVED RESPONSE WITH INVALID PROC NAME - " a "`
10. `INIT PROC= a LEVEL= b FAILED - SYSTEM IS CURRENTLY IN AN INITIALIZATION INTERVAL`
11. `INIT PROC= a LEVEL= b FAILED - PROC IS CURRENTLY INVOLVED IN AN INITIALIZATION`
12. `INIT PROC= a LEVEL= b FAILED - PROC " a " DOES NOT EXIST`
13. `INIT PROC= a LEVEL= b FAILED - " a " IS SCHEDULED FOR REMOVAL FROM SYSTEM`
14. `INIT PROC= a LEVEL= b FAILED - PROC " a ", UNKNOWN ERROR a RECEIVED FROM INIT`
15. `INIT PROC= a LEVEL= b FAILED TO RECEIVE RESPONSE FROM INIT`
16. `INIT PROC FAILED - PROC a AFFECTS CALL PROCESSING, USE UCL OPTION`
17. `INIT PROC FAILED - INVALID MACHINE NAME e`
18. `INIT PROC SLL INIT DEST= f g`

6.78.4 Parameters

a the name of a network element process. A list of processes can be obtained with the **OP:INIT** message.

b the system recovery level:

0=Single process recovery, provisioning data is not reloaded.

1=Single process recovery, provisioning data is reloaded.

c an error code.

d the message size.

e the name of machine (ts0-ts9)

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f string in the form of BC_x_y_z
Where:
- x is the SPA name
- y is the machine
  Machine is rack- chassis- slot
  Where:
  rack can be 0 -3
  chassis can be 0 -9
  slot can be 0 -14
- z is the number of the client

g one of the following values:

SYNTAX ERROR IN w, FILE SKIPPED

SEMANTIC ERROR IN w, FILE SKIPPED

UNABLE TO ACCESS w, FILE SKIPPED

LOAD BREAKPOINT FILE FAILED OR TIMED OUT

where w = path of the breakpoint file(s)

6.78.5 Action to be taken

For format [16] only, reenter the **INIT:PROC** input message with UCL option. All other formats are for information only.

For format [18], the output message could only be generated by SPA initialization, usually caused by INIT:PROC or INSTALL:PROC input messages. If *g* is SYNTAX/SEMANTIC ERROR, check the breakopoint file identified by *w* and eliminate the error. If *g* is UNABLE TO ACCESS, check the access right of the breakpoint file and change it to *readable*. If *g* is LOAD BREAKPOINT FAILED/ TIMED OUT, the possible reason is that there are too many files in the breakpoint directory or the files are too big.

6.78.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

INIT:PROC
INSTALL:SPA,PROC

Output Messages:

None.

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6.79 OP ALMTABLE

Application

MOF

6.79.1 Reason for output

Display list of alarms that match given criteria in active alarm table on screen. On Displayed table each alarm record of active alarm table is displayed as a row in a table, which has three lines. First line in Row consists of Alarm Index, Alarm Time, Alarm Level and Alarm Name. Second line consists of Alarm Probable cause and third line consists of Alarm specific problem.

Partial alarm information is displayed in this table.

```
            ACTIVE ALARM TABLE
INDEX        TIME        SEV        OBJECT NAME
-----       ------       ----      --------------
PROBABLE CAUSE
SPECIFIC PROBLEM
-----------------
```

Detailed information about a particular alarm will be displayed when Index=c, option is used. When this option is used then alarm name, time, specific problem, level, type, probable cause, and specific problem are displayed in separate lines.

For example:

```
             ACTIVE ALARM INFORMATION
ALARM INDEX:
ALARM NAME:
PROBABLE CAUSE:
SPECIFIC PROBLEM:
ALARM LEVEL:
ALARM TYPE:
ALARM TIME:
```

When XML option is used Alarm table is not displayed in subshl but an xml file is generated with the following format, for example:

```
<?xml version="1.0"?>
<AlarmTable>
        <TableInformation>
           <AlarmTableLogXMLTime>
             time
           </AlarmTableLogXMLTime>
           <InitializationTime>
             time
           </InitializationTime>
           <CurrentTableSize>
```


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```
                number
              </CurrentTableSize>
            </TableInformation>
              <Alarm>
                <alarmIndex>Index</alarmIndex>
                <ObjectName>Name</ObjectName>
                <SpecificProblem>problem</SpecificProblem>
                <ProbableCause>cause</ProbableCause>
                <NotificationIdentifier>id</NotificationIdentifier>
                <Severity>level</Severity>
                <AlarmType>type</AlarmType>
                <AdditionalText>notes</AdditionalText>
                <AlarmTime>time</AlarmTime>
                <RepeatCount>number</RepeatCount>
                <AutoClear>Boolean</AutoClear>
                <OMDBKey>text</OMDBKey>
              </Alarm>
        </AlarmTable>
```

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6.80 OP ASOCC

Application
S7SCH

Message class
MAINT, NMPOLL

6.80.1 Platform

Applicable to all platforms except where explicitly stated.

6.80.2 Reason for output

Report the processing status of input message **OP:ASOCC**.

Important! The Message Class is set to NMPOLL when the input message uses the optional parameter OSS=NTM. This causes the output message to spool to the NetMinder log file instead of the regular maintenance log (OMlog).

6.80.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7073	No	None
2	/S7009	No	None
3	/S7013	No	None
4	/S7002	No	None
5	/S7010	No	None
6	/S7012	No	None

6.80.4 Format

The following formats are listed for this command.

1. `OP ASOCC COMPLETED KEY=a DIGTYPE=b GAPLVL=c DURLVL=d GAPTIME=e DURTIME=f`
2. `OP ASOCC COMPLETED, MANUAL TABLE IS EMPTY`
3. `OP ASOCC,KEY= a ,DIGTYPE= b FAILED, MISSING PARAMETER g`
4. `OP ASOCC,KEY= a ,DIGTYPE= b FAILED DUE TO INVALID KEY`
5. `OP ASOCC,KEY= a ,DIGTYPE= b FAILED, NO MANUAL ASOCC ON THE KEY`
6. `OP ASOCC PASSED KEY=a DIGTYPE=b GAPLVL=c DURLVL=d GAPTIME=e DURTIME=f`

   `OP ASOCC COMPLETED,OUTPUT INCOMPLETE DUE TO INTERNAL ERROR`

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6.80.5 Parameters

a the digits or hex digits at which the manual Service Management System (SMS)-Originated Code Control (SOCC) for ASERI INAP call processing are set.

b one of the following types of the digits:

AOCL— Automatic call gapping on calling line identity. This value displays a KEY of 1 - 10 digits.

AOSR —Automatic call gapping on platform received number. This value displays a KEY of 3 - 10 digits.

AOCID —Automatic call gapping on customer ID. This value displays a KEY of 1 - 10 digits.

c the gap level for the ASOCC.

d the duration level for the ASOCC.

e the total amount of gap time for the ASOCC.

f the total amount of duration time for the ASOCC.

g the parameter name: KEY or DIGTYPE.

6.80.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. Reenter the input message with valid parameters.
4. Reenter the input message with valid KEY value.
5. For information only.
6. This error might occur due to some internal transient problems. Reenter the input message, and if the error persists, seek the next level of technical assistance.

6.80.7 Additional information and references

The following are additional information sources regarding this command.

Input messages

CANC:ASOCC
OP:ASOCC
SET:ASOCC

Output messages

CANC ASOCC
SET ASOCC

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6.81 OP INIT

Application
INIT

Message class
MAINT

6.81.1 Reason for output

The following describes the reason for output when executing this command.

1. Reports the status of all processes known to INIT. The table is printed in response to an **OP:INIT** input message.
2. Reports the history of system resets. The table is printed in response to an **OP:INIT** input message.
3. Internal software error.
4. Internal software error.

6.81.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/IN036	No	None
2	/IN037	No	None
3	/IN019	No	None
4	/IN020	No	None

6.81.3 Format

The following formats are listed for this command.

1. `OP INIT IN PROGRESS`

   `PROCESS STATUS INFORMATION`

   `PROC=a PID=b TYPE=c TMR=d STEP=e STATE=f RESTART=g`

   `SOFTCHK=h NODE=i GQ=j`

   The processes are listed up to 20 at a time, so this first block will repeat until all processes have been listed.

2. `OP INIT IN PROGRESS`

   `CURRENT SYSTEM RUN LEVEL: k`

   `CURRENT SYSTEM INIT STATE: l`

   `SYSTEM SOFTCHK STATE: m`

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OP INIT IN PROGRESS

SYSTEM RESET HISTORY

START: *n*

FINISH: *o*

RECOVERY LEVEL: *p* RUN LEVEL: *q* PROC COUNT: *r*

SOURCE: *s* ERROR: *t*

OP INIT COMPLETED

OP INIT HISTORY IN PROGRESS

SYSTEM RESET HISTORY

START: *n*

FINISH: *o*

RECOVERY LEVEL: *p* RUN LEVEL: *q* PROC COUNT: *r*

OP INIT HISTORY COMPLETED

3. OP INIT FAILED TO FIND INIT`S SHARED MEMORY SEGMENT (SEG KEY (number) ERRNO *u*
4. OP INIT FAILED TO ATTACH TO INIT`S SHARED MEMORY SEGMENT (SEG KEY (number) ERRNO *u*

6.81.4 Parameters

The PROCESS STATUS INFORMATION section contains status information about the Control Computer processes. It has the following variable fields:

a the process name. In the "PROC" column, the machine is rack- chassis- slot

Where:

rack can be 0 -3

chassis can be 0 -9

slot can be 0 -14

b the UNIX process ID of this process.

c one of the following process types:

NC— Non critical.

IC— Initialization critical

CC —Call processing critical

PC —Pseudo call processing critical

d the sanity timer interval of this process. If this is set to zero, then no sanity checking is being performed on the process.

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e the process`s current synchronization step. The following are the possible steps and their definitions:

BSU— the software update apply or backout is pending for this process.

SU— the process is handling software update apply/backout and will exit when completed.

ESU—the process just exited in response to software update apply/backout.

READY—the process has just been started.

EHALT— the process is waiting for a synchronization signal from INIT.

STARTUP—the process is running through its initial processing.

ESTARTUP—the process has completed its initial processing.

BSYSINIT— the process is about to execute its sysinit() routine.

SYSINIT— the process is executing its sysinit() routine.

ESYSINIT— the process has completed its sysinit() routine and is waiting for an initialization signal to cause it to enter its procinit() routine.

BPROCINIT— the process is about to execute its procinit() routine.

PROCINIT— the process is executing its procinit() routine.

EPROCINIT— the process has completed its procinit() routine and is waiting for an initialization signal to cause it to enter its process() routine.

BCLEANUP— the process is about to enter its cleanup() routine and begin its participation in a reinitialization.

CLEANUP— the process is executing its cleanup() routine.

ECLEANUP— the process has completed its sysinit() routine and is waiting for an initialization signal to cause it to enter either sysinit (for systemwide initializations) or procinit() (for process reinitializations).

BPROCESS— the process is about to enter its process() routine.

PROCESS— the process has completed sequenced initialization, however it is not yet ready to handle calls.

CPREADY— the process is ready to handle calls, but not all initialization activity is finished.

STEADY— the process is active and is not currently involved in an initialization.

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f the process`s current state. The following are the possible states their definitions:

NOEXIST the process is scheduled to be created but is not yet running.

CREATING the process has been created but has not yet completed its initial start-up processing.

HALTED the process is suspended from doing any work until INIT sends it a control signal.

RUNNING the process is running and is not currently involved in an initialization action.

DEAD the process is not currently running, and is not scheduled to be created.

INV_STEP the process is not active.

g the current restart status for the process:

ALW the process is to be restarted automatically.

INH the process will not be restarted automatically.

h the current software check status:

ALW escalation on software errors is permitted.

INH escalation is not allowed.

i displays on which Control Computer a given process is running on.

j displays whether or a given process owns a global queue(GQ) **Y** must be displayed for processes that own a GQ, **N** must be displayed for processes that do not own a GQ, and NA is not applicable.

k the current system run level. Processes with process run levels at or below this value have been started by INIT. The run levels are defined in the initlist file located in */sn/init/initlist*.

l the current initialization status of the system and will be set to one of the following values:

INITING the system is currently going through a systemwide reset.

INIT INTERVAL the system is in an initialization interval that started after a systemwide initialization was completed.

NOINIT the system is not involved in any initialization actions.

the SYSTEM RESET HISTORY section contains details about the last ten systemwide initializations that have occurred since the system was booted. For each initialization event, the following variable fields are output:

m the current software check status:

ALW escalation on software errors is permitted.

INH escalation is not allowed.

n the time the initialization began.

o the time the initialization ended.

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p the recovery level of the last systemwide initialization.

LVL 4

the level of a full UNIX boot or a full application restart, including the INIT process.

LVL 3

a systemwide reset with a reload of provisioning information.

LVL 2

a systemwide reset without a reload of provisioning information.

q the run level associated with the initialization.

r the number of processes that were involved in the initialization.

s the source of this initialization If a specific process caused the initialization, its name is included in this field. The following are examples of possible sources:

SOFT— process requested a systemwide initialization.

RUNLVL— the system`s run level was increased with the **SET:RUNLVL** input message.

t an error code that can be used to track the cause of the systemwide resets. For non-error situations (such as full boots or an increase in the system`s run level) this value is set to zero.

Important! This is a postmortem error code. This error code is retained for historical purposes only. This error code does not indicate a current error condition.

u an internal error code.

6.81.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. Seek the next level of technical assistance.
4. Seek the next level of technical assistance.

6.81.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

ALW:RESTART
ALW:SOFTCHK
INH:RESTART
INH:SOFTCHK
OP:INIT

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Output messages

```
ALW RESTART
ALW SOFTCHK
INH RESTART
INH SOFTCHK
```

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6.82 OP ITURS

Application
S7SCH

Message class
MAINT

6.82.1 Reason for output

Reports the current route set (RS) status associated with the specified pointcode in the ITU format, using the IP network.

6.82.2 Alarm identifiers

The following table shows the alarm identifiers for each message format.

Format	OM key	Repeat	Alarm level
1	/S7187	No	None
2	/S7003	No	None
3	/S7004	No	None
4		No	None
5		No	None
6		No	None
7		No	None
8	/S7240	No	None
9		No	None
10		No	None

6.82.3 Format

The following formats are listed for this command.

1. `OP ITURS= a COMPLETED`
2. `OP ITURS= a THIS POINTCODE IS LOCAL POINTCODE.`
3. `OP ITURS= a THIS POINTCODE DOES NOT EXIST.`
4. `OP ITURS= a M3UA FAILED - THE ROUTE IS BLOCKED FOR POINTCODE. a`
5. `OP ITURS= a M3UA - THE ROUTE IS ACTIVE FOR POINTCODE. a`
6. `OP ITURS= a M3UA FAILED - THE PLATFORM FORMAT IS ANSI.`
7. `OP ITURS= a M3UA FAILED - THE PLATFORM FORMAT IS CHN.`
8. `OP ITURS= a THIS POINTCODE IS LOCAL SECONDARY POINTCODE FOR LINKSET b`

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9. `OP ITURS= a M3UA FAILED. THIS POINTCODE DOES NOT EXIST.`
10. `OP ITURS= a M3UA STATUS PER NW_APPEARANCE: (r,s) [(r,s)]`

6.82.4 Parameters

a DPC in ITU format (xxxxx), whose value can range from 1-16383.

b the signaling linkset number (1-32).

r Network Appearance(NA) number. This format of OM will only be seen in sites with NA enabled M3UA Configurations. Multiple NA's per PC will be displayed for this PC only if multiple NA's have been configured for this PC in RCV.

s ACT or BLK state for the PC for that Network Appearance.

6.82.5 Action to be taken

The following corrective actions are listed below.

1. None. This message is for information only.
2. None. This message is for information only.
3. None. This message is for information only.
4. None. This message is for information only.
5. None. This message is for information only.
6. None. This message is for information only.
7. None. This message is for information only.
8. None. This message is for information only.
9. None. This message is for information only.

6.82.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

OP:ITURS

Output Messages:

None.

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6.83 OP LS

Application
S7SCH

Message class
MAINT, NMPOLL

6.83.1 Reason for output

Reports the current SS7 signaling linkset (LS) information.

Important! The Message Class is set to NMPOLL when the input message uses the optional parameter OSS=NTM. This causes the output message to spool to the NetMinder log file instead of the regular maintenance log (OMlog).

6.83.2 Alarm identifiers

The following table shows the alarm identifiers for each message format.

Format	OM key	Repeat	Alarm level
1	/S7194	No	None
2	/S7194	No	None
3	/S7194	No	None
4	/S7007	No	None
5	/S7194	No	None
6	/S7194	No	None

6.83.3 Format

The following formats are listed for this command.

1. `OP LS= a COMPLETED`
   `LINKSET NUMBER: a`
   `— — — THIS LINKSET IS A DIRECT LINKSET`
   `AND IT IS PART OF COMBINED LINKSET b`
   `— — — THE FAR END POINTCODE IS: c`
   `— — — THIS LINKSET HAS d LINK (S):`
   `LINK reserved`
   `:`
   `:`
   `— — — THE LINKSET STATE: j`
2. `OP LS= a COMPLETED`

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```
— — — THIS LINKSET IS A COMBINED LINKSET,
    AND IT HAS TWO DIRECT LINKSETS:
     DIRECT LINKSET—1: LINKSET h
     DIRECT LINKSET-2: LINKSET i
— — — THIS LINKSET HAS d LINK(S):
LINK e-f-g
   :
   :
  — — — THE LINKSET STATE: j
```

3. `OP LS=ALL COMPLETED`
4. `OP LS= a THIS LINKSET IS NOT EQUIPPED`
5.
```
OP LS= a COMPLETED
LINKSET NUMBER: a
— — — THIS LINKSET IS A VIRTUAL LINKSET,
     AND IT HAS THE FOLLOWING DIRECT LINKSET(S),
DIRECT LINKSET NUMBER :
— — — THE LINKSET STATE : j
```
6.
```
OP LS= a COMPLETED
LINKSET NUMBER: a
— — — THIS LINKSET IS A DIRECT LINKSET
AND IT IS PART OF VIRTUAL LINKSET k
— — — THE FAR END POINTCODE IS : c
— — —  THE LOCAL SECONDARY POINTCODE IS : l
— — — THIS LINKSET HAS d LINK(S) :
LINK
— — — THE LINKSET STATE : j
```

6.83.4 Parameters

a the signaling linkset number (1-32).

b the combined linkset number (1-32).

c the far end pointcode of this linkset.

d the link number that this linkset contained.

e the SS7 Node ID (or cluster node number) (0-31).

f the SS7 board number (1-4).

g the SS7 link number associated with the board (1-32).

h the first direct linkset number (1-32).

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`i` the second direct linkset number (1-32).

`j` the linkset status:

`FAILED` indicates this linkset is not available to carry traffic.

`NORMAL` indicates this linkset is available to carry traffic.

`UNEQUIPPED` indicates this linkset does not have any equipped link.

`k` the virtual linkset number (1-32).

`l` the local secondary point code(ITU version only) (1-16383).

6.83.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. For information only.
4. Verify the linkset number, and reenter the **`OP:LS`** input message.
5. For information only.
6. For information only.

6.83.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

`OP:LS`

Output messages

None.

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6.84 OP LSRPI

Application
S7SCH

Message class
MAINT

6.84.1 Reason for output

Reports the current SS7 linkset (LS) number and Route Pattern Index (RPI) Mapping table.

6.84.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7193	No	None
2	/S7193	No	None

6.84.3 Format

The following formats are listed for this command.

1. `OP LSRPI COMPLETED`
   `LINKSET RPI TABLE`
   `LINKSET NO.=a ROUTE=b PATTERN INDEX MAP=c`
2. `OP LSRPI FAILED, TABLE IS EMPTY`

6.84.4 Parameters

`a` the linkset number (1-32).

`b` the Route Pattern Index (1-32).

`c` The mapping of linkset number and Route Pattern Index.

`32` this linkset is the first direct linkset on normal route.

`16` this linkset is the second direct linkset on normal route.

`8` this linkset is the first direct linkset on the first alternative route.

`4` this linkset is the second direct linkset on the first alternative route.

`2` this linkset is the first direct linkset on the second alternative route.

`1` this linkset is the second direct linkset on the second alternative route.

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6.84.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Seek the next level of the technical assistance.

6.84.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

`OP:LSRPI`

Output messages

None.

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6.85 OP LSST

Application
S7SCH

Message class
MAINT

6.85.1 Reason for output

Reports the current SS7 linkset (only equipped linkset) status base on each Route Pattern Index (RPI).

6.85.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7191	No	None
2	/S7191	No	None

6.85.3 Format

The following formats are listed for this command

```
1. OP LSST COMPLETED
         LINKSET STATUS TABLE
       (U = unavailable, A = available)
   = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =
   = = = =
   RPI NORMAL ROUTE  ALT_1 ROUTE     ALT_2 ROUTE
   – – – – – – – – – – – – – – –     – – – – – –
   RPI=a
   LS=b-c LS=d-e    LS=f-g LS=h-i   LS=j-k LS=l-m
      2. OP LSST FAILED, TABLE IS EMPTY
```

6.85.4 Parameters

a the Route Pattern Index (1-32).

b the first direct linkset number on normal route.

c the status of the linkset in the first direct route:

U=Unavailable.

A=Available.

d the second direct linkset number on the normal route.

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e the status of the second direct linkset on the normal route.

U=Unavailable.

A=Available.

f the first direct linkset number on first alternative route.

g the status of the first direct linkset on first alternative route:

U=Unavailable.

A=Available.

h the second direct linkset number on the first alternative route.

i the status of the second direct linkset on the first alternative route:

U=Unavailable.

A=Available.

j the first direct linkset number on the second alternative route.

k the status of the first direct linkset on the second alternative route:

U=Unavailable.

A=Available.

l the second direct linkset number on the second alternative route.

m the status of the second direct linkset on the second alternative route:

U=Unavailable.

A=Available.

6.85.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Seek the next level of technical assistance.

6.85.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:LSST

Output messages

None.

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6.86 OP LSXL

Application
S7SCH

Message class
MAINT

6.86.1 Reason for output

Reports the current SS7 signaling linkset translation table.

6.86.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7190	No	None
2	/S7015	No	None

6.86.3 Format

The following formats are listed for this command.

1. `OP LSXL COMPLETED`
2. `OP LSXL FAILED, TABLE IS EMPTY`

6.86.4 Parameters

`a` the Route Pattern Index (RPI) (1-16).

`b` the combined linkset (CLS) number on the normal route. If a direct linkset is assigned to this route, then the direct linkset number will also be shown in this field.

`c` the first direct linkset (DLS) number on the normal route.

`d` the second direct linkset number on the normal route.

`e` the combined linkset number on the first alternative route. If a direct linkset is assigned to this route, then the direct linkset number will also be shown in this field.

`f` the first direct linkset number on the first alternative route.

`g` the second direct linkset number on the first alternative route.

`h` the combined linkset number on the second alternative route. If a direct linkset is assigned to this route, then the direct linkset number will also be shown in this field.

`i` the first direct linkset number on the second alternative route.

`j` the second direct linkset number on the second alternative route.

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6.86.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Seek the next level of technical assistance.

6.86.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

`OP:LSXL`

Output messages

None.

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6.87 OP MEAS

Application
MEAS

Message class
MSERR, NMPOLL

6.87.1 Reason for output

The following describes the reason for output when executing this command.

1. There is no measurement data in the database that satisfies the SPA, TABLE, PLAT, and/or ALL options specified in the **OP:MEAS** input message for the collection interval specified (*a*) for the date and time specified (*f*).
2. There is no measurement data in the database that satisfies the SPA, TABLE, PLAT, and/or ALL options specified in the **OP:MEAS** input message for the collection interval specified (*a*) for the date and time specified (*f*), which is in the future.
3. Manual reporting of measurements failed for measurement tables satisfying the SPA, TABLE, PLAT, and/or ALL options specified in **OP:MEAS** input message for the collection interval specified (*a*) for the date and time specified (*f*).

Important! The Message Class is set to NMPOLL when the input message uses the optional parameter OSS=NTM. This causes the output message to spool to the NetMinder log file instead of the regular maintenance log (OMlog).

6.87.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/MS008	No	None
2	/MS011	No	None
3	/MS009	Yes	None

6.87.3 Format

The following formats are listed for this command.

1. OP MEAS= *a* [,DATE= *b*][,TIME= *c*][SPA= *d*][,TABLE= *e*] [,PLAT][,ALL][,DST]
   FAILED NO *a* MEASUREMENT DATA SATISFYING THE SPECIFIED CRITERIA ABOVE FOR DATE AND TIME OF *f*
2. OP MEAS= *a* [,DATE= *b*][,TIME= *c*][,SPA= *d*][,TABLE= *e*] [,PLAT][,ALL][,DST]
   FAILED DATE AND TIME OF *f* IS IN THE FUTURE. NO *a* MEASUREMENT DATA SATISFYING THE SPECIFIED CRITERIA ABOVE FOR THIS FUTURE DATE/TIME
3. OP MEAS= *a* [,DATE= *b*][,TIME= *c*][,SPA= *d*][,TABLE= *e*] [,PLAT][,ALL][,DST]
   FAILED MEASUREMENT REPORTING FAILED FOR COLLECTION INTERVAL *a*

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6.87.4 Parameters

a the valid measurement collection interval (TRFC5, TRFC15, TRFC30, PLNTHR, PLNT24 or S7_INTERNAL_MEAS) that is to be reported.

b the date the desired measurements to be reported were scheduled to be collected. Date format is the currently applicable date format (*yyyymmdd*, *mmddyyyy*, or *ddmmyyyy*).

c the time the desired measurements to be reported were scheduled to be collected (hhmm).

d the Service Package Application (SPA) name or a list of SPA names (separated with &) or ALL for all SPAs.

e the measurement table name (in double quotes) or list of measurement table names (in double quotes separated with &).

f the date and time specified in the **OP:MEAS** input command in the form of the currently applicable date format and time:

yyyy-mm-dd hh:mm

dd-mm-yyyy hh:mm

mm-dd-yyyy hh:mm

6.87.5 Action to be taken

The following corrective actions are listed below.

1. Check to make sure that the values for the SPA, TABLE, PLAT, and/or ALL options in the **OP:MEAS** input message are specified as desired; if not, reenter the input message with the correct data.
2. Check to make sure that the date/time combination specified in the **OP:MEAS** input message is correct; if not, reenter the **OP:MEAS** input message with the correct date/time combination. Also see the action to be taken for format [1].
3. Seek the next level of technical assistance.

6.87.6 Additional information and references

The following are additional information sources regarding this command.

Input message

OP:MEAS

Output messages

None.

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6.88 OP MUXAGT COMPLETED

Application
MUXSCH

Message class
MAINT

6.88.1 Reason for output

Report all the Java agents which connected to the MUXSCH.

6.88.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	No	No	None

6.88.3 Format

```
HW ID     AGT NAME     AGENT IP ADDRESS
=====     ========     ================
  a          b               c
```

6.88.4 Parameters

a displays the Hardware ID assigned to the connected agent

b displays the Java Agent Name of the connected agents

c displays the IP Address of the connected agents

6.88.5 Action to be taken

For information only

6.88.6 Additional information and references

The following are additional information sources regarding this command.

Input message

OP:MUXAGT

Output messages

OP MUXAGT

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6.89 OP MUXSKT COMPLETED

Application
MUXSCH

Message class
MAINT

6.89.1 Reason for output

Report the MUXSCH configuration for local listening IP address and port number.

6.89.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	MX001	No	None

6.89.3 Format

```
OP MUXSKT COMPLETED LOCAL HOST IP= a PORT= b
```

6.89.4 Parameters

`a` the Local host IP address which MUXSCH accept the Java agent connection

`b` the Local host port number which MUXSCH opened as a listening port

6.89.5 Action to be taken

For information only

6.89.6 Additional information and references

The following are additional information sources regarding this command.

Input message

OP:MUXSKT

Output messages

```
OP MUXSKT
```


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6.90 OP MUXSSN COMPLETED

Application
MUXSCH

Message class
MAINT

6.90.1 Reason for output

Report the SSN number(s) used to route incoming message from SS7 network to the MUXSCH. The MUXSCH distributes the received message to available Java agents.

6.90.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	MX002	No	None

6.90.3 Format

```
OP MUXSSN COMPLETED LOCAL SSN(s)= a;
```

6.90.4 Parameters

`a` a list of up to 15 SSNs associated with the MUXSCH

6.90.5 Action to be taken

For information only

6.90.6 Additional information and references

The following are additional information sources regarding this command.

Input message

OP:MUXSSN

Output messages

```
OP MUXSSN
```

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6.91 OP OVLD

Application
SPMAN

Message class
MAINT

6.91.1 Reason for output

Prints Subsystem Number (SSN) overload status information in response to the `OP:OVLD` input message.

6.91.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SA008	No	None

6.91.3 Format

```
OP OVLD SSN= a SSN OVERLOAD STATUS
SSN     CALL COUNT  OVLD FLAG  OVLD LEVEL
- -     - - - - - - - - - - - - - - - - -
 a          b           c          d
```

6.91.4 Parameters

Important! for release 7.0 and later, 0 is a valid SSN.

`a` the SSN number (5-254).

`b` the call count of the last collection interval.

`c` one of the following values:

`TRUE SSN` —resource uses Automatic Call Gapping (ACG) for this SSN.

`FALSE SSN` —resource management is not involved for this SSN.

`d` one of the following resource management levels:

(0) = No SSN overload.

(1-8) = The SSN resource management level.

6.91.5 Action to be taken

None. This message is for information only.

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6.91.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

`OP:OVLD,SSN`

Output Messages:

None.

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6.92 OP RESTART

Application
INIT

Message class
MAINT

6.92.1 Reason for output

Reports the current restart status of control computer processes.

6.92.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/IN035	No	None
2	/IN035	No	None
3	/IN007	No	None
4	/IN019	No	None
5	/IN020	No	None

6.92.3 Format

Important! The processes are listed up to 20 at a time, so this table will repeat until all processes have been listed.

The following formats are listed for this command.

1. `OP RESTART IN PROGRESS`

   `PROC=a RESTART=b TRCNT=c/d MAX RSTRT=e RSTRT INTVL=f UPD=g ERR=h/i COUNT=j`

   `OP RESTART COMPLETED`
2. `OP RESTART PROC=a IN PROGRESS`

   `PROC=a RESTART=b TRCNT=c/d MAX RSTRT=e RSTRT INTVL=f UPD=g ERR=h/i COUNT=j`

   `OP RESTART PROC=a COMPLETED`
3. `OP RESTART PROC= a FAILED - PROC a DOES NOT EXIST`
4. `OP RESTART PROC= a FAILED TO FIND INIT'S SHARED MEMORY SEGMENT SEG KEY j ERRNO k`
5. `OP RESTART PROC= a FAILED TO ATTACH TO INIT'S SHARED MEMORY SEGMENT SEG KEY j ERRNO k`

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6.92.4 Parameters

a the name of the process.

b the restart status:

ALW the process will be restarted if it dies or fails to peg its sanity timer.

INHthe process will be removed from the system if it dies or fails to peg its sanity timer.

c if nonzero, the process is in a restart interval and "c" indicates the number of times this process has died within the current restart interval.

d the number of times this process has been started since the last systemwide initialization.

e the maximum number of times this process will be restarted within its restart interval before higher level recovery actions will be initiated.

f the duration of the process` restart interval (in seconds). The process will remain in a timed interval until it runs for this period of time without dying or failing to peg its sanity flag.

g the software update state:

NONE no software update applied.

PRE updating with new product, but new product has not started.

POST new product is running.

h the current count of software errors generated by the process.

i the escalation threshold for recovery action.

j a decimal value.

k an error code.

6.92.5 Action to be taken

None. This message is for information only.

6.92.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

ALW:RESTART
INH:RESTART
OP:RESTART

Output messages

None.

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6.93 OP RPI

Application
S7SCH

Message class
MAINT

6.93.1 Reason for output

Reports the current SS7 linkset number base on each Route Pattern Index (RPI).

6.93.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7189	No	None
2	/S7015	No	None

6.93.3 Format

The following formats are listed for this command.

```
1. OP RPI COMPLETED
       ROUTING PATTERN INDEX TABLE
     = = = = = = = = = = = = = = = = = = = = = =
       RPI   NORMAL  ALT_1  ALT_2
     - - - - -  - - - - - - - - - - - ----
       RPI=a   b     c    d
        :   :     :     :
   2. OP RPI FAILED, TABLE IS EMPTY
```

6.93.4 Parameters

`a` the Route Pattern Index (1-32).

`b` the linkset (combined linkset or direct linkset) number on the normal route.

`c` the linkset (combined linkset or direct linkset) number on the first alternative route.

`d` the linkset (combined linkset or direct linkset) number on the second alternative route.

6.93.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Seek the next level of technical assistance.

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6.93.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

`OP:RPI`

Output messages

None.

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6.94 OP RPIRS

Application
S7SCH

Message class
MAINT

6.94.1 Reason for output

Reports the current SS7 Route Pattern Index (RPI) and Route Set (RS) mapping table.

6.94.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7188	No	None
2	/S7015	No	None

6.94.3 Format

The following formats are listed for this command

```
1. OP RPIRS COMPLETED
     RPI TO ROUTE SET MAPPING
     = = = = = = = = = = = = = = = =
     RPI    POINTCODE LIST
     - -       - - - - - - - -
     RPI =a             b
     :       :
   2. OP RPIRS FAILED, TABLE IS EMPTY
```

6.94.4 Parameters

`a` the Route Pattern Index (1-32).

`b` the hexadecimal format of the pointcode.

6.94.5 Action to be taken

None. This message is for information only.

6.94.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

`OP:RPIRS`

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Output messages

None.

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6.95 OP RS

Application
S7SCH

Message class
MAINT

6.95.1 Reason for output

Reports the current route set (RS) status in ANSI format, using the IP network.

6.95.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7187	No	None
2	/S7003	No	None
3	/S7004	No	None
4		No	None
5		No	None
6		No	None
7		No	None
8		No	None
9		No	None

6.95.3 Format

The following formats are listed for this command.

1. `OP RS= a-b-c COMPLETED`
2. `OP RS= a-b-c THIS POINTCODE IS LOCAL TRUE POINTCODE.`
3. `OP RS= a-b-c THIS POINTCODE DOES NOT EXIST.`
4. `OP RS= a-b-c M3UA FAILED - THE ROUTE IS BLOCKED FOR POINTCODE a.`
5. `OP RS= a-b-c M3UA - THE ROUTE IS ACTIVE FOR POINTCODE a.`
6. `OP RS= a-b-c M3UA FAILED - THE PLATFORM FORMAT IS ITU.`
7. `OP RS= a-b-c M3UA FAILED - THE PLATFORM FORMAT IS CHN.`
8. `OP RS= a-b-c M3UA FAILED. THIS POINTCODE DOES NOT EXIST.`
9. `OP RS= a-b-c M3UA STATUS PER NW_APPEARANCE: (r,s) [(r,s)]`

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Format output:

OP RS = a - b - c COMPLETED

ANSI Point Code				Routing Flag	Cur Rte	RPI	Routes and Status			A D J	N T F	C N G	C R
Hex	Ntwk	Clus	Memb				Norm	Alt1	Alt2				
d	a	b	c	e	f	g	h-i	j-k	l-m	n	o	p	q

6.95.4 Parameters

a the network number of the pointcode.

b the cluster number of the pointcode.

c the member number of the pointcode.

d the hexadecimal format of the pointcode.

e the routing flag:

NTWK_O= network only route set.

POP_CLU= populated cluster route set.

UPOP_CLU= unpopulated cluster route set.

CLU_O= cluster only route set.

DMEMBER= dynamic member of a populated cluster.

SMEMBER = static member of a populated cluster.

f the current route (linkset number) or BLK (inaccessible).

g the Route Pattern Index (RPI).

h the normal route (linkset number).

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i the routing status for the normal route:

AA= transfer allowed on both linksets.

AP= transfer allowed on the first linkset and prohibited on the second linkset.

AR= transfer allowed on the first linkset and restricted on the second linkset.

PA= transfer prohibited on the first linkset and allowed on the second linkset.

PP= transfer prohibited on both linksets.

PR= transfer prohibited on the first linkset and restricted on the second linkset.

RA = transfer restricted on the first linkset and allowed on the second linkset.

RP= transfer restricted on the first linkset and prohibited on the second linkset.

RR= transfer restricted on both linksets.

j the first alternate route linkset number.

k the routing status for the first alternate route:

AA= transfer allowed on both linksets.

AP= transfer allowed on the first linkset and prohibited on the second linkset.

AR= transfer allowed on the first linkset and restricted on the second linkset.

PA= transfer prohibited on the first linkset and allowed on the second linkset.

PP= transfer prohibited on both linksets.

PR= transfer prohibited on the first linkset and restricted on the second linkset.

RA= transfer restricted on the first linkset and allowed on the second linkset.

RP= transfer restricted on the first linkset and prohibited on the second linkset.

RR= transfer restricted on both linksets.

l the second alternate route (linkset number).

m routing status for the Second alternate route:

AA= transfer allowed on both linksets.

AP= transfer allowed on the first linkset and prohibited on the second linkset.

AR= transfer allowed on the first linkset and restricted on the second linkset.

PA= transfer prohibited on the first linkset and allowed on the second linkset.

PP= transfer prohibited on both linksets.

PR= transfer prohibited on the first linkset and restricted on the second linkset.

RA= transfer restricted on the first linkset and allowed on the second linkset.

RP= transfer restricted on the first linkset and prohibited on the second linkset.

RR= transfer restricted on both linksets.

n adjacent? `(Y or N)`.

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o need to notify user part? (Y or N).

p the route congestion level (0-3).

q controlled rerouting in progress? (Y or N).

r Network Appearance(NA) number. This format of OM will only be seen in sites with NA enabled M3UA Configurations. Multiple NA's per PC will be displayed for this PC only if multiple NA's have been configured for this PC in RCV.

s ACT or BLK state for the PC for that Network Appearance.

6.95.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. For information only.
4. For information only.
5. For information only.
6. For information only.
7. For information only.
8. For information only.

6.95.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:RS

Output messages

Output message 1

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```
< op:rs=254-150-005; PF
  +++ HLRSITCF14 2006-03-29 09:56:15 MAINT /S7187 #000452 as064 LEAD >
  OP RS=254-150-005 COMPLETED
    +-------------------------+-------------+----+----+-------------------------+--+--+--+--+
    |   ANSI Point Code       |             |    |    |  Routes and Status      |A|N|C|  |
    +-------+-----+-----+-----+ Routing     |Cur |    +-------+-------+-------+D|T|N|C|
    | Hex   |Ntwk|Clus|Memb|   Flag      |Rte|RPI| Norm  | Alt1  | Alt2  |J|F|G|R|
    +-------+-----+-----+-----+-------------+----+----+-------+-------+-------+--+--+--+--+
    |fe9605| 254| 150|    5|DMEMBER      |BLK|   3|  3-PP|  0-AA|  0-AA|N|N|0|N|
    +-------+-----+-----+-----+-------------+----+----+-------+-------+-------+--+--+--+--+
    END OF REPORT #000452++-
```

Output message 2

```
< op:rs=254-253-003; PF
  +++ HLRSITCF14 2006-03-29 09:56:24 MAINT /S7187 #000453 as064 LEAD >
  OP RS=254-253-003 COMPLETED
    +-------------------------+-------------+----+----+-------------------------+--+--+--+--+
    |   ANSI Point Code       |             |    |    |  Routes and Status      |A|N|C|  |
    +-------+-----+-----+-----+ Routing     |Cur |    +-------+-------+-------+D|T|N|C|
    | Hex   |Ntwk|Clus|Memb|   Flag      |Rte|RPI| Norm  | Alt1  | Alt2  |J|F|G|R|
    +-------+-----+-----+-----+-------------+----+----+-------+-------+-------+--+--+--+--+
    |fefd03| 254| 253|    3|POP_CLU      |  3|   3|  3-AA|  0-AA|  0-AA|N|N|0|N|
    +-------+-----+-----+-----+-------------+----+----+-------+-------+-------+--+--+--+--+
  END OF REPORT #000453++-
```

Documents

Platform Input Messages

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6.96 OP SGMASTER

Application
STSCH

Message class
MAINT

6.96.1 Reason for Output

Outputs the STSCH node ID, host name, and machine name of the SS7 master.

6.96.2 Alarm Identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1		No	None
2		No	None

6.96.3 Format

The following formats are listed for this command.

1. `OP SGMASTER COMPLETED SUCCESSFULLY`
   `MASTER STSCH NODE ID=` *`a`* `HOST NAME=` *`b`* `MACHINE NAME=` *`c`*
2. `OP SGMASTER FAILED, NOT A CLUSTERED CONFIGURATION`

6.96.4 Parameters

`a` the node ID (0-15) of the STSCH master.

`b` the host name of the STSCH master.

`c` the machine name of the STSCH master.

6.96.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Check the configuration to verify if it is in a N+K (cluster) configuration.

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6.97 OP SLK

Application
S7SCH

Message Class
MAINT, NMPOLL

6.97.1 Platform

Applicable to all platforms except where explicitly stated.

6.97.2 Reason for output

Reports the current SS7 Signaling Link (SLK) status.

Important! The Message Class is set to NMPOLL when the input message uses the optional parameter OSS=NTM. This causes the output message to spool to the NetMinder log file instead of the regular maintenance log (OMlog).

6.97.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7185	No	None
2	Not an OM	No	None
3	/S7005	No	None
4	/S7185	No	None
5	/S7186	No	None
6	/S7185	No	None
7	/S7185	No	None
8	/S7186	No	None
9	/S7186	No	None
10	/S7185	No	None
11	/S7186	No	None
12	/S7185	No	None
13	/S7186	No	None
14	/S7185	No	None
15	/S7186	No	None

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Format	OM key	Repeat	Alarm level
16	/S7185	No	None
17	/S7186	No	None

6.97.4 Format

The following formats are listed for this command.

1. `OP SLK=a-b-c COMPLETED`
2. `OP SLK=a-b-c NG - INVALID LINK NUMBER`
3. `OP SLK=a-b-c THIS LINK IS NOT EQUIPPED`
4. `OP SLK=EQP COMPLETED`
5. `OP SLK=a-b-c THIS LINK CANNOT BE EQUIPPED`
6. `OP SLK=SAAL COMPLETED`
7. `OP SLK=MTP2 COMPLETED`
8. `OP SLK=MTP2-NO MTP2 LINKS ARE CURRENTLY EQUIPPED`
9. `OP SLK=SAAL-NO SAAL LINKS ARE CURRENTLY EQUIPPED`
10. `OP SLK=MTP2E1 COMPLETED`
11. `OP SLK=MTP2E1-NO MTP2E1 LINKS ARE CURRENTLY EQUIPPED`
12. `OP SLK=MTP2T1 COMPLETED`
13. `OP SLK=MTP2T1-NO MTP2T1 LINKS ARE CURRENTLY EQUIPPED`
14. `OP SLK=MTP2AA COMPLETED`
15. `OP SLK=MTP2AA-NO MTP2AA LINKS ARE CURRENTLY EQUIPPED`
16. `OP SLK=LOCAL COMPLETED`
17. `OP SLK=LOCAL-NO LOCAL LINKS ARE CURRENTLY EQUIPPED`
18. `OP SLK=M2PA COMPLETED`
19. `OP SLK=M2PA-NO M2PA LINKS ARE CURRENTLY EQUIPPED`

The format below is shown only in Release 93 and later while using the ITU, CHN protocols and Release 94 and later when using GWIA protocols.

6.97.5 Parameters

`a` the SS7 node ID (0-31).

`b` the SS7 board number (1-4).

`c` the SS7 link number associated with the board (1-120).

`d` the signaling link code of this link.

`e` the error code for attaching to the shared memory segment associated with SPMAN.

`f` the congestion level of this link.

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g the link failure cause summarizing recent failure of this link:

ABN= abnormal FIBR/BSNR

APF= alignment/proving failure

HWP= hardware problems

OTH= other or unresolved

RRP= remote release protocol error

RRO= remote release outage

RCO= receive far-end changeoverproblems

SWP= software problems

XDA= excessive delay of acknowledgement

XDC= excessive duration of congestion

XER= excessive error rate

ZHW= hardware error in SS7IC

ZL1= physical link problem

ZLT= signaling link test failure

ZMN= manual maintenance state

h the link class of this link:

SAAL= Signaling ATM Adaptation Layer SS7 link.

MTP2= Message Transfer Part Level 2 SS7 link.

MTP2AA= Message Transfer Part level 2 Clear Channel E1 SS7 link

MTP2T1= Message Transfer Part level 2 Channelized T1 SS7 link

MTP2E1= Message Transfer Part level 2 Channelized E1 SS7 link

i the link availability control flag - link failed (**Y** or blank)

j the link availability control flag - link blocked (**Y** or blank).

k the link availability control flag - link remote blocked (**Y** or blank

l the link availability control flag - link inhibited (**Y** or blank).

m the link availability control flag - link remote inhibited (**Y** or blank).

n the state of link activity control:

INACTIVE= inactive.

ACT/RESTO= activating/restoring state.

ACTIVE= active.

WAIT/INIT= waiting for initial alignment.

FAILED = failed.

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o the state of link availability control:

`UNAVAILABLE`

`AVAILABLE`

p the state of link changeover control:

`IDLE` = idle.

`WAITBSNT` = waiting for backward sequence number of next signal unit to be transmitted.

`WAITMSEQ` = waiting to avoid message missequencing.

`WAITFACK` = waiting for acknowledgment.

`RETRIEVE` = message retrieving.

`WAITBSCO`= waiting for remote changeover backward sequence number.

q the state of link changeback control:

`IDLE` = idle.

`1STATT` = waiting for changeback acknowledgment (first attempt).

`2NDATT` = waiting for changeback acknowledgment (second attempt).

`TIMECD` = time controlled division - delay to avoid missequencing on changeback.

r the state of signaling link test control:

`IDLE` = idle.

`1STATT` = waiting for signaling link test acknowledgment (first attempt).

`2NDATT` = waiting for signaling link test acknowledgment (second attempt).

6.97.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Reenter the **`OP:SLK`** input message with a valid link number.
3. Reenter the **`OP:SLK`** input message with a valid link number.
4. For information only.
5. For information only.
6. For information only.
7. For information only.
8. For information only.
9. For information only.
10. For information only.
11. For information only.
12. For information only.

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13. For information only.
14. For information only.
15. For information only.
16. For information only.
17. For information only.
18. For information only.
19. For information only.

6.97.7 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:SLK

Output messages

None.

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6.98 OP SOCC

Application
S7SCH

Message class
MAINT

6.98.1 Platform

Applicable to all platforms except where explicitly stated.

6.98.2 Reason for output

Report the processing status of input message **OP:SOCC**.

6.98.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7073	No	None
2	/S7009	No	None
3	/S7013	No	None
4	/S7002	No	None
5	/S7010	No	None
6	/S7074	No	None
7	/S7011	No	None
8	/S7002	No	None
9	/S7010	No	None
10	/S7072	No	None
11	/S7013	No	None

6.98.4 Format

The following formats are listed for this command.

1. `OP SOCC PASSED`

   `KEY  DIGTYPE  TRANSTYPE  GAPLVL  DURLVL`

   `a  b  c  d  e`
2. `OP SOCC COMPLETED, MANUAL SOCC TABLE IS EMPTY`
3. `OP SOCC,KEY =`*`a`*` , FAILED, MISSING PARAMETER  DIGTYPE  OR  TRANSTYPE`

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4. OP SOCC,KEY= *a* ,DIGTYPE= *b* FAILED DUE TO INVALID KEY
5. OP SOCC,KEY= *a* ,DIGTYPE= *b* FAILED, NO MANUAL SOCC ON THE KEY
6. OP SOCC COMPLETED

   KEY DIGTYPE TRANSTYPE GAPLVL DURLVL

   a *b* *c* *d* *e*

   OP SOCC COMPLETED,OUTPUT INCOMPLETE DUE TO INTERNAL ERROR
7. OP SOCC,KEY= *a* ,TRANSTYPE= *c* FAILED DUE TO INVALID KEY
8. OP SOCC KEY= *a* ,TRANSTYPE= *c* FAILED, NO MANUAL SOCC ON THE KEY
9. OP SOCC,KEY= *a* ,DIGTYPE= *b* ,TRANSTYPE= *c* FAILED, INCOMPATIBLE PARAMETER DIGTYPE TRANSTYPE
10. OP SOCC,DIGTYPE= *b* FAILED, INCOMPATIBLE PARAMETER DIGTYPE TRANSTYPE
11. OP SOCC,TRANSTYPE= *c* FAILED, MISSING PARAMETER KEY

6.98.5 Parameters

a the digits at which the manual Service Management System (SMS)-Originated Code Control (SOCC) is set.

b one of the following types of the digits:

ANI= the calling number.

DIALED= the called number.

AOCID=automatic call gapping on customer ID.

c the translation type (0-255).

d the gap level for the SOCC.

e the duration level for the SOCC.

6.98.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. Reenter the input message with valid parameters.
4. Reenter the input message with valid KEY value.
5. For information only.
6. This error might occur due to some internal transient problems. Reenter the input message, and if the error persists, seek the next level of technical assistance.
7. Reenter the command with valid KEY value.
8. For information only.
9. Reenter the input message with valid parameters.
10. Reenter the input message with valid parameters.

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11. Reenter the input message with valid parameters.

6.98.7 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

`OP:SOCC`

Output Messages:

None.

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6.99 OP SS7MASTER

Application
S7SCH

Message Class
MAINT

6.99.1 Reason for output

Outputs the S7SCH node ID, host name, and machine name of the SS7 master.

6.99.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7220	No	None
2	/S7221	No	None

6.99.3 Format

The following formats are listed for this command.

1. `OP SS7MASTER COMPLETED, MASTER S7SCH=` *a* `HOST=` *b* `MACHINE=` *c*
2. `OP SS7MASTER FAILED, NOT A CLUSTERED CONFIGURATION`

6.99.4 Parameters

`a` the node ID (0-15) of the SS7 master.

`b` the host name of the SS7 master.

`c` the machine name of the SS7 master.

6.99.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Check the configuration to verify if it is in a cluster configuration.

6.99.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

`OP:SS7MASTER`

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Output messages

None.

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6.100 OP SS7NODE

Application
S7SCH

Message Class
MAINT

6.100.1 Reason for output

Outputs the current local SS7 node status.

6.100.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7218	No	None
2	/S7219	No	None
3	/S7221	No	None

6.100.3 Format

The following formats are listed for this command.

1. `OP SS7NODE SS7 NODE IS ACTIVE`
2. `Op SS7NODE SS7 NODE IS INACTIVE`
3. `OP SS7NODE FAILED, NOT A CLUSTERED CONFIGURATION`

6.100.4 Parameters

None.

6.100.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. Check the configuration to verify if it is in a cluster configuration.

6.100.6 Additional information and references

The following are additional information sources regarding this command.

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Input messages

RMV:SS7NODE
RST:SS7NODE
OP:SS7NODE

Output messages

None.

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6.101 OP TRAP, ASSOC

Application
STSCH

Message class
MAINT

6.101.1 Platform
Applicable to all platforms except where explicitly stated.

6.101.2 Reason for Output:
Reports the output of the **OP:TRAP, ASSOC** input message

6.101.3 Format:

The following formats are listed for this command.

1. `OP TRAP ASSOC= [a-b,b] COMMAND COMPLETED SUCCESSFULLY.`

   `DIRECTION: c`

   `DURATION: d secs`

   `TOTAL: e messages`

   `RATE: every f out of g messages`
2. `OP TRAP ASSOC= [a-b,b] FAILED - TRAP IS NOT SET FOR ASSOCIATION [a-b,b]`

6.101.4 Parameters:

`a` node number (0-15)

`b` Association number (1-42)

`c` Direction (IN, OUT or BOTH)

`d` Trap duration in seconds

`e` Total number of messages being collected

`f` The number of messages being collected in the rate

`g` Message number corresponding to the collection rate. Example: if rate=5, 1 of every 5 messages is collected.

6.101.5 Actions to be taken:

The following corrective actions are listed below.

1. None. This message is for information only.
2. None. This message is for information only.
3. None. This message is for information only.

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6.101.6 Additional Information and References:

The following are additional information sources regarding this command.

Input Messages:

`OP:TRAP,ASSOC`

Output Messages:

None.

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6.102 OP STATUS ASSOC

Application
STSCH

Message class
MAINT

6.102.1 Reason for output

The following are reasons for output when executing this command.

- Reports the processing status of the **OP:STATUS,ASSOC** input message for M3UA.
- Reports the processing status of the **OP:STATUS,ASSOC** input message for SCTP.

6.102.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	None	No	None
2	None	No	None
3	None	No	None
4	None	No	None
5	None	No	None
6	None	No	None

6.102.3 Format

The following formats are listed for this command.

1. **OP STATUS ASSOC=** *[a-b,b,ALL,LOCAL]* **M3UA FAILED - NO ASSOCIATIONS ARE CURRENTLY EQUIPPED**
2. **OP STATUS ASSOC=** *[a-b,b,ALL,LOCAL]* **M3UA FAILED - ASSOCIATION IS UNEQUIPPED**
3. **OP STATUS ASSOC=** *[a-b,b,ALL,LOCAL]* **M3UA COMPLETED SUCCESSFULLY**

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Note: For N+K configurations, ASSOC NO. column will contain "a-b".

ASSOC NO.	STATUS	CCNN STATUS	ASP STATUS
b	c	d	e
b	c	d	e
b	c	d	e
b	c	d	e

4. **OP STATUS ASSOC=** *[a-b,b,ALL] [SCTP, MUX, IP="d"]* **COMPLETED SUCCESSFULLY**

   Note: For N+K configurations, ASSOC NO. column will contain "a-b".

ASSOC NO.	PATH	DEST IP	STATUS
B	H	J	L
F G	I	K	M
B	H	J	L
F G	I	K	M
B	H	J	L
F G	I	K	M
B	H	J	L
F G	I	K	M

Examples:

```
< op:status,assoc=all; IP
+++ ATCA001 2011-02-17 17:01:05 MAINT /SG016 #007092 0-0-1 >
M  OP STATUS ASSOC=all COMPLETED SUCCESSFULLY.
ASSOCIATION     PATH STAT            DESTINATION IP ADDR
```

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```
----------------- ---- ---- -------------------------------
0- 1 M2PA CLIENT  PRI  ACT 135.1.28.39
0- 1 M2PA CLIENT  SEC  OOS 0.0.0.0
0-10  MUX CLIENT  PRI  ACT 135.1.28.39
0-10  MUX CLIENT  SEC  OOS 0.0.0.0
0-18  MUX CLIENT  PRI  ACT 135.1.28.39
0-18  MUX CLIENT  SEC  OOS 0.0.0.0
END OF REPORT #007092++-
```

5. **OP STATUS ASSOC=** *[a-b,b,ALL]* **SCTP FAILED - NO ASSOCIATIONS ARE CURRENTLY EQUIPPED**
6. **OP STATUS ASSOC=** *[a-b,b,ALL,LOCAL]* **SCTP FAILED - ASSOCIATION IS UNEQUIPPED**

6.102.4 Parameters

a Node number (0-31)

b Association number (1-52)

c the status of the association(MOOS, OOS, ACT)

d the status of the connection for the association (UP, DOWN, ERR)

e the status of the Application Server Part(ASP) (DOWN, INAC, AC)

f Treatment: DIAM, M3UA, M2PA, IPSP, and MUX

g association mode, CLIENT or SERVER

h PRI, the primary path

i SEC, the secondary path

j the destination IP address for the primary path

k the destination IP address for the secondary path

l the status of association via the primary path

m the status of association via the secondary path

6.102.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. For information only.
4. For information only.
5. For information only.
6. For information only.

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6.102.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

OP:STATUS,ASSOC

Output Messages:

None

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6.103 OP STATUS SSN

Application
SPMAN

Message class
MAINT

6.103.1 Reason for output

Reports the current status of one or all local subsystem numbers (SSNs) or one or all mate SSNs.

6.103.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SA033	No	None
2	/SA033	No	None
3	/SA033	No	None
4	/SA033	No	None
5	/SA032	No	None

6.103.3 Format

The following formats are listed for this command.

1. **OP STATUS SSN** *a*

```
SSN     SSN STATE
 a         b
:         :
```

2. **OP STATUS MATE SSN**

```
SSN     SSN STATE
 a         b
:         :
```

3. **OP STATUS SSN ALL**

```
SSN     SSN STATE
 a         b
:         :
```

4. **OP STATUS MATE SSN ALL**

```
SSN     SSN STATE
 a         b
```


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```
:       :
```

5. **OP STATUS SSN "** *a* **" NO SSN STATUS**

6.103.4 Parameters

a the subsystem number (0, 5-254, 256-318 are valid)

(1-4 are reserved)

b the SSN state:

DIS: disabled.

IS: in service.

OOS: out-of-service. (Due to SPA request to change this SSN's state from IS to OOS, or due to the associated SPA being in a MOOS or OOS state.)

MOOS: manually out-of-service.

6.103.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. For information only.
4. For information only.
5. Seek the next level of technical assistance.

6.103.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

OP:STATUS,SSN

Output messages

None.

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6.104 RCV MENU or RCV MENU,PLAT

Application
RCV

Message class
MAINT

6.104.1 Reason for output

The following are reasons for output when executing this command.

1. Reports the processing status of the **RCV:MENU** or **RCV:MENU,PLAT** input message.
2. Reports the processing status of the **RCV:MENU** or **RCV:MENU,PLAT** input message.
3. Reports the processing status of the **RCV:MENU** or **RCV:MENU,PLAT** input message, and reports that the PLAT MENU is empty.

6.104.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/RC001	No	None
2	/RC002	No	None
3	/RC006	No	None

6.104.3 Format

The following formats are listed for this command.

1. **RCV MENU COMPLETED**
2. **RCV MENU FAILED**
3. **RCV MENU,PLAT COMPLETED – PLAT MENU IS EMPTY**

6.104.4 Action to be taken

None. This message is for information only.

6.104.5 Additional information and references

The following are additional information sources regarding this command.

Input messages

RCV:MENU

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Output messages

None.

Documents

Recent Change and Verify, 270-780-422

Recent Change and Verify, 270-710-449

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6.105 RCVRY LKF

Application
S7SCH

6.105.1 Reason for output

Indicates that the stated SS7 link that previously failed has been restored. This message occurs only if the restored link remains up for at least one minute.

6.105.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SS011	No	CL

6.105.3 Format

`RCVRY LKF LINK=` *a* `,DTIME=` *b*

6.105.4 Parameters

a The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

b the detection time: *hh - mm - ss - ttt*

hh = hours

mm = minutes

ss = seconds

ttt = time zone code

6.105.5 Action to be taken

None. This message is for information only.

6.105.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

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Output Messages:

None.

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6.106 RCVRY LKOTG

Application
S7SCH

6.106.1 Reason for output

Indicates that the SAAL SS7 link has transition, for any reason, from the available state to the unavailable state as preceived by MTP level 3.

6.106.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SS026	No	None

6.106.3 Format

`REPT-LKOTG::::::LINK=` *a* `,AC=` *b* `,DTIME=` *c*

6.106.4 Parameters

`a ( link ID )` The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

`b ( link Availability cause )` `INS` = Successful reestablishment of the SAAL connection

`LFU`= Local force unihibit

`LMU`= Local management uninhibit

`LRU`= Local routing control uninhibit

`RFU`= Remote force uninhibit

`RMU`= Remote management uninhibit

`c ( Date and Time )` the detection time: *hh - mm - ss - ttt*

hh = hours

mm= minutes

ss = seconds

ttt = time zone code

6.106.5 Action to be taken

Discover the cause for the link outage and remedy if possible. The link might be restored to in-service automatically.

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6.106.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

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6.107 RCVRY MASTERHB

6.107.1 Reason for output

RCVRY MASTERHB

6.107.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7242	No	None

6.107.3 Format

The following formats are listed for this command.

RCVRY MASTERHB MASTER=*a* Node ID=*b* HostName=*c* Host Machine Name=*d*

6.107.4 Parameters

a S7SCH or STSCH.

b Node ID of the unavailable Master.

c Host Name of the unavailable Master.

d Host Machine Name of the unavailable Master.

6.107.5 Action to be taken

The following corrective actions are listed for this command.

1. Information only

6.107.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages

REPT MASTERHB

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6.108 REPT LKF

Application
S7SCH

Message class
NMS7

6.108.1 Reason for output

Indicates that the stated SS7 link has failed. This message prints a maximum of once-per-minute per-link, regardless of how many failures occur within that minute.

6.108.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SS004	No	MJ

6.108.3 Format

`REPT–LKF::::::LINK=` *a* `,LFC=` *b* `,DTIME=` *c*

6.108.4 Parameters

a The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

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b the link failure code:

ABN

abnormalR/BSNR.

APF

alignment/proving failure.

HWP

hardware problems.

SWP

software problems.

XDA

excessive delay of acknowledgement.

XER

excessive error rate.

XDC

excessive duration of congestion.

ZHW

a hardware problem in SS7IC.

ZL1

a physical link problem.

ZLT

the link is out-of-service because of a signaling link test failure.

ZMN

the link is out-of-service because of a craft command.

ZSW

a software problem in SS7IC.

OTH

OTHER or UNRESOLVED

c the detection time *: hh - mm - ss - ttt*

hh = the hours.

mm = the minutes.

ss = the seconds.

ttt = the time zone code.

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6.108.5 Action to be taken

Discover the cause for the link failure and remedy, if possible. The link might be restored automatically to in-service.

6.108.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

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6.109 REPT MATE

Application
USLI

Message class
NMMAINT

6.109.1 Reason for output

This message indicates that mate platform is out of service.

6.109.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7017	No	MJ

6.109.3 Format

```
REPT MATE SCP OOS
```

6.109.4 Parameters

None.

6.109.5 Action to be taken

None. This message is for information only.

6.109.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None.

Output Messages

None.

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6.110 REPT LK-FAILED

Application
S7SCH

Message class
NMS7

6.110.1 Reason for output

This message is sent periodically for the stated link on which the platform is trying to recover. It indicates that the platform could not recover the link at this moment.

6.110.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7041	Yes	MJ

6.110.3 Format

`REPT LK-FAILED LINK= a - b , TRYING TO RECOVER`

6.110.4 Parameters

`a` The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

6.110.5 Action to be taken

Discover the cause for the link failure. Look for a `REPT-LKF` message for the specified link before this message appears. The `LFC` field in that message suggests the cause of the link failure. The link might be restored automatically to in-service.

6.110.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

`REPT LKF`

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6.111 RMV ASSOC

Application
STSCH

Message class
MAINT

6.111.1 Reason for output

This output message reports the processing status of the **RMV:ASSOC** input message.

6.111.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	None	No	None
2	None	No	None
3	None	No	None
4	None	No	None
5	None	No	None

6.111.3 Format

The following formats are listed for this command.

1. `RMV ASSOC= [a-b,b] COMMAND ACCEPTED SUCCESSFULLY`
2. `RMV ASSOC= [a-b,b] FAILED - ASSOCIATION IS ALREADY IN MOOS STATE`
3. `RMV ASSOC= [a-b,b] FAILED M3UA STACK ERROR`
4. `RMV ASSOC= [a-b,b] FAILED NO RESPONSE FROM SCTPSCH`
5. `RMV ASSOC= [a-b,b] FAILED ASSOCIATION IS UNEQUIPPED`
6. `RMV ASSOC= [a-b] FAILED DBI PROCESS DOES NOT EXIST`
7. `RMV ASSOC= [a-b] FAILED M2PA LINK FOR THIS ASSOCIATION STILL ACT OR OOS`

6.111.4 Parameters

`a` node number (0-15). For the configuration of multiple SIGTRAN processes, it means virtual cluster node id. You can refer to chapter 23 for virtual cluster node id.

`b` the association number (1-52)

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6.111.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. For information only.
4. For information only.
5. For information only.
6. For information only.
7. For information only.

6.111.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

RMV:ASSOC
RST:ASSOC

Output Messages:

REPT ASSOC

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6.112 RMV SLK

Application
S7SCH

Message class
MAINT

6.112.1 Reason for output

Reports the processing status of the input message **RMV:SLK**.

6.112.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7162	No	None
3	/S7164	No	None
4	/S7167	No	None
5	/S7212	No	None

6.112.3 Format

The following formats are listed for this command.

1. RMV SLK= *a* - *b* - *c* COMPLETED SUCCESSFULLY
2. RMV SLK= *a* - *b* - *c* FAILED - LINK IS UNEQUIPPED
3. RMV SLK= *a* - *b* - *c* FAILED - LINK ALREADY DEACTIVATED
4. RMV SLK= *a* - *b* - *c* FAILED - LINK NEEDS TO BE BLOCKED OR INHIBITED FIRST
5. RMV SLK= *a* - *b* - *c* FAILED, ONLY LOCAL NODE CAN BE APPLIED. For the configuration of multiple SS7 processes,it means the virtual cluster node id is not in the local physical node. You can refer to chapter 21.

6.112.4 Parameters

a The SS7 Node ID (0-31). For the configuration of multiple SS7 processes, it means virtual cluster node id. You can refer to chapter 21 for virtual cluster node id.

b The SS7 board number (1-4).

c The port number for the associated specified link (1-120).

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6.112.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Use **OP:SLK** to check the link status.
3. Use **OP:SLK** to check the link status.
4. Use **CHG:SLK** or **INH:SLK** to block or inhibit the link before removing it.
5. Check the SS7 node ID, then reenter the **RMV:SLK** command in the local node.

6.112.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

ALW:SLK
CHG:SLK
INH:SLK
OP:SLK
RMV:SLK

Output messages

None.

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6.113 RMV SS7BRD

Application
S7SCH

Message class
MAINT

6.113.1 Platform

Applicable to all platforms except where explicitly stated.

6.113.2 Reason for output

Reports the processing status of the input message **RMV:SS7BRD**.

6.113.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	Not an OM	No	None
3	Not an OM	No	None
4	/S7075	No	None
5	/S7076	No	None
6	/S7077	No	None
7	/S7078	No	None
8	/S7079	No	None
9	/S7080	No	None
10	/S7081	No	None
11	/S7082	No	None
12	/S7083	No	None
13	/S7084	No	None
14	/S7085	No	None
15	/S7086	No	None
16	/S7087	No	None
17	/S7088	No	None
18	/S7089	No	None

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Format	OM key	Repeat	Alarm level
19	/S7090	No	None
20	/S7146	No	None
21	/S7118	No	None
22	/S7212	No	None

6.113.4 Format

The following formats are listed for this command.

1. `RMV SS7BRD= a - b COMPLETED SUCCESSFULLY`
2. `RMV SS7BRD= a - b NG - INVALID SS7IC BOARD NUMBER`
3. `RMV SS7BRD= a - b NG - REMOVE STANDBY SS7IC BOARD NOT ALLOWED`
4. `RMV SS7BRD= a - b FAILED, SS7 BOARD NOT EQUIPPED`
5. `RMV SS7BRD= a - b FAILED, OPERATION IN PROGRESS`
6. `RMV SS7BRD= a - b FAILED, IMPROPER OPERATION`
7. `RMV SS7BRD= a - b FAILED, ALREADY IN POWER-OFF STATE`
8. `RMV SS7BRD= a - b FAILED, ALREADY IN POWER-ON STATE`
9. `RMV SS7BRD= a - b FAILED, DOWNLOAD SOFTWARE FAILED`
10. `RMV SS7BRD= a - b FAILED, RESET SS7BRD FAILED`
11. `RMV SS7BRD= a - b FAILED, POWER DOWN FAILED`
12. `RMV SS7BRD= a - b FAILED, POWER ON FAILED`
13. `RMV SS7BRD= a - b FAILED, IMPROPER RESPONSE`
14. `RMV SS7BRD= a - b FAILED, OPEN FILE FAILED`
15. `RMV SS7BRD= a - b FAILED, POLL FILE FAILED`
16. `RMV SS7BRD= a - b FAILED, ALREADY OUT OF SERVICE`
17. `RMV SS7BRD= a - b FAILED, PUT MESSAGE FAILED`
18. `RMV SS7BRD= a - b FAILED, GET MESSAGE FAILED`
19. `RMV SS7BRD= a - b FAILED, CONFIGURE DRIVER FAILED`
20. `RMV SS7BRD= a - b FAILED - ALL EQUIPPED LINKS MUST BE MANUALLY OOS`
21. `RMV SS7BRD= a - b FAILED, SS7 node ID c OUT-OF-SERVICE.`
22. `RMV SS7BRD= a - b FAILED, ONLY LOCAL NODE CAN BE APPLIED`
23. `RMV SS7BRD= a - b FAILED DBI PROCESS DOES NOT EXIST`
24. `RMV SS7BRD= a - b FAILED ASSOCIATION IN THIS BOARD STILL ACTIVE`

6.113.5 Parameters

`a` the SS7 Interface Card board group (node) number (0-31).

`b` the SS7 Interface Card board member (board) number (1-4).

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`UCL` unconditional execution.

`c` The number of the SS7 node ID (1-120).

6.113.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Reenter the input message with a valid board number.
3. For information only.
4. Check if the SS7 board is equipped.
5. Check if an SS7 board is performing a download operation. If it is, reenter the input message later.
6. Check the SS7 board status, and reenter the input message.
7. Check the power on the SS7 board.
8. Check the power on the SS7 board, or seek the next level of technical assistance.
9. Seek the next level of technical assistance.
10. Seek the next level of technical assistance.
11. Seek the next level of technical assistance.
12. Check if the SS7 board on the slot, or seek the next level of technical assistance.
13. Reenter the input message. If it still fails, seek the next level of technical assistance.
14. Reenter the input message. If it still fails, seek the next level of technical assistance.
15. Reenter the input message. If it still fails, seek the next level of technical assistance.
16. Reenter the input message. If it still fails, seek the next level of technical assistance.
17. Reenter the input message. If it still fails, seek the next level of technical assistance.
18. Reenter the input message. If it still fails, seek the next level of technical assistance.
19. Reenter the input message. If it still fails, seek the next level of technical assistance.
20. Use **RMV:SLK** to deactivate all the links that are connected to the specified board.
21. Seek the next level of technical assistance.
22. Check the SS7 node ID, then reenter the **RMV:SS7BRD** command in the local node.
23. Seek the next level of technical assistance.
24. Check if the association related with this board is still active.

6.113.7 Additional information and references

The following are additional information sources regarding this command.

Input messages

RMV:SS7BRD

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Output messages

None.

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6.114 RMV SS7NODE

Application
S7SCH

Message Class
MAINT

6.114.1 Reason for output

Reports the processing status of the **RMV:SS7NODE** input message.

Note: The removal state of an SS7 node will be lost if S7SCH of the node is restarted after the node has been removed with RMV:SS7NODE command. After the S7SCH is restarted, the SS7 node is considered in restored state but its SS7 links will remain in MOOS state. The user has to take the following two steps to restore the SS7 node back to its original removed state:

1. Manually restore each SS7 link using OP:SLK command
2. Re-execute the exact RMV:SS7NODE IM command previously executed

6.114.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7215	No	None
3	/S7216	No	None
4	/S7221	No	None

6.114.3 Format

The following formats are listed for this command.

1. `RMV SS7NODE COMPLETED SUCCESSFULLY`
2. `RMV SS7NODE FAILED DUE TO SS7 NODE ALREADY REMOVED`
3. `RMV SS7NODE FAILED DUE TO ALL OTHER NODES IN THE CLUSTER/LINK/SSN ARE OOS`
4. `RMV SS7NODE FAILED, NOT A CLUSTERED CONFIGURATION`

6.114.4 Parameters

None.

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6.114.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Use **OP:SS7NODE** to check the local node status.
3. This is caused by removing the local node conditionally when all other nodes/link/ssns are out of service.
4. Check the configuration to verify if it is in a cluster configuration.

6.114.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

RMV:SS7NODE
RST:SS7NODE
OP:SS7NODE

Output messages

None.

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6.115 RMV SSN

Application
SS7

Message class
MAINT

6.115.1 Reason for output

Reports the processing status of the input message **RMV:SSN**.

6.115.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SA000	No	None
2	/SA001	No	None
3	/SA015	No	None

6.115.3 Format

The following formats are listed for this command.

1. `RMV SSN= a [UCL] REQUEST SUCCESSFULLY COMPLETED`
2. `RMV SSN= a [UCL] FAILED - REASON b`
3. `RMV SSN= a FAILED, RMV CANNOT BE DONE WHILE SPA c IS PART OF AN UPDATE`

6.115.4 Parameters

`a` the subsystem number (SSN) (5-254).

`b` an error description.

`c` the name of the Service Package Application (SPA) associated with the given SSN.

Important! When a SPA has only one in-service (IS) SSN, the **RMV:SSN** input message will fail. It will fail since the SPA must have at least one IS SSN for an IS SPA.

`UCL` unconditional execution.

6.115.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Check error description. For hardware correctable errors, take action. For software errors, seek the next level of technical assistance.

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3. Wait for the SPA update process to complete, or use the **UPD:BKOUT,SPA** input message to backout the update. To find out which update the SPA is involved in, use the **UPD:PRINT,SPA** input message.

6.115.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

RMV:SSN
UPD:BKOUT,SPA
UPD:PRINT,SPA

Output messages

None.

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6.116 RST ASSOC

Application
STSCH

Message class
MAINT

6.116.1 Reason for output

This output reports the processing status of the **RST:ASSOC** input message.

6.116.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	None	No	None
2	None	No	None
3	None	No	None
4	None	No	None
5	None	No	None
6	None	No	None
7	None	No	None

6.116.3 Format

The following formats are listed for this command.

1. `RST ASSOC= [a-b,b] COMMAND ACCEPTED SUCCESSFULLY`
2. `RST ASSOC= [a-b,b] COMMAND ACCEPTED SUCCESSFULLY`
   `Association Not Registered by DIAM`
3. `RST ASSOC= [a-b,b] FAILED ASSOCIATION IS ALREADY ACTIVATED`
4. `RST ASSOC= [a-b,b] FAILED M3UA STACK ERROR`
5. `RST ASSOC= [a-b,b] FAILED NO RESPONSE FROM SCTPSCH`
6. `RST ASSOC= [a-b,b] FAILED ASSOCIATION IS UNEQUIPPED`
7. `RST ASSOC= [a-b,b] FAILED ASSOCIATION IS ALREADY OOS`
8. `RST ASSOC= [a-b] FAILED ASSOCIATION BOARD STILL MOOS`

6.116.4 Parameters

`a` node number (0-15). For the configuration of multiple SIGTRAN processes, it means virtual cluster node id. You can refer to chapter 23 for virtual cluster node id.

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b the association number (1-52)

6.116.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. For information only.
4. For information only.
5. For information only.
6. For information only.
7. For information only.
8. For information only.

6.116.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

RMV:ASSOC
RST:ASSOC

Output Messages:

REPT ASSOC

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6.117 RST SS7BRD

Application
S7SCH

Message class
MAINT

6.117.1 Platform

Applicable to all platforms except where explicitly stated.

6.117.2 Reason for output

The following describes the reason for output when executing this command.

1. Report the processing status of the input message **RST:SS7BRD**.
2. Report the processing status of the input message **RST:SS7BRD**.
3. Report the processing status of the input message **RST:SS7BRD**.
4. Report the processing status of the input message **RST:SS7BRD**.
5. Report the processing status of the input message **RST:SS7BRD**.
6. Report the processing status of the input message **RST:SS7BRD**.
7. Report the processing status of the input message **RST:SS7BRD**.
8. Report the processing status of the input message **RST:SS7BRD**.
9. Report the processing status of the input message **RST:SS7BRD**.
10. Report the processing status of the input message **RST:SS7BRD**.
11. Report the processing status of the input message **RST:SS7BRD**.
12. Report the processing status of the input message **RST:SS7BRD**.
13. Report the processing status of the input message **RST:SS7BRD**.
14. Report the processing status of the input message **RST:SS7BRD**.
15. Report the processing status of the input message **RST:SS7BRD**.
16. Report the processing status of the input message **RST:SS7BRD**.
17. Report the processing status of the input message **RST:SS7BRD**.
18. Report the processing status of the input message **RST:SS7BRD**.
19. Report the processing status of the input message **RST:SS7BRD**.
20. Report the processing status of the input message **RST:SS7BRD**.
21. Report the processing status of the input message **RST:SS7BRD**.

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6.117.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	Not an OM	No	None
3	Not an OM	No	None
4	/S7075	No	None
5	/S7076	No	None
6	/S7077	No	None
7	/S7078	No	None
8	/S7079	No	None
9	/S7080	No	None
10	/S7081	No	None
11	/S7082	No	None
12	/S7083	No	None
13	/S7084	No	None
14	/S7085	No	None
15	/S7086	No	None
16	/S7088	No	None
17	/S7089	No	None
18	/S7090	No	None
19	/S7097	No	None
20	/S7212	No	None
21	/S7236	No	None

6.117.4 Format

The following formats are listed for this command.

1. `RST SS7BRD= a-b COMPLETED SUCCESSFULLY`
2. `RST SS7BRD= a-b NG - INVALID SS7IC BOARD NUMBER`
3. `RST SS7BRD= a-b NG - RESTORE STANDBY SS7IC BOARD NOT ALLOWED`
4. `RST SS7BRD= a-b FAILED, SS7 BOARD NOT EQUIPPED`
5. `RST SS7BRD= a-b FAILED, OPERATION IN PROGRESS`
6. `RST SS7BRD= a-b FAILED, IMPROPER OPERATION`

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7. RST SS7BRD= *a*-*b* FAILED, ALREADY IN POWER-OFF STATE
8. RST SS7BRD= *a*-*b* FAILED, ALREADY IN POWER-ON STATE
9. RST SS7BRD= *a*-*b* FAILED, DOWNLOAD SOFTWARE FAILED
10. RST SS7BRD= *a*-*b* FAILED, RESET SS7BRD FAILED
11. RST SS7BRD=*a*-*b* FAILED, POWER DOWN FAILED
12. RST SS7BRD= *a*-*b* FAILED, POWER ON FAILED
13. RST SS7BRD= *a*-*b* FAILED, IMPROPER RESPONSE
14. RST SS7BRD= *a*-*b* FAILED, OPEN FILE FAILED
15. RST SS7BRD= *a*-*b* FAILED, POLL FILE FAILED
16. RST SS7BRD= *a*-*b* FAILED, PUT MESSAGE FAILED
17. RST SS7BRD= *a*-*b* FAILED, GET MESSAGE FAILED
18. RST SS7BRD= *a*-*b* FAILED, CONFIGURE DRIVER FAILED
19. RST SS7BRD= *a*-*b* FAILED, SS7 BOARD ALREADY ACTIVE
20. RST SS7BRD= *a*-*b* FAILED, ONLY LOCAL NODE CAN BE APPLIED. For the configuration of multiple SS7 processes,it means the virtual cluster node id is not in the local physical node. You can refer to chapter 21.
21. RST SS7BRD= *a*-*b* FAILED, CONTROL COMPUTER (CC) -*c* OUT-OF-SERVICE.

6.117.5 Parameters

a the SS7 Interface Card board group (node) number (0-31)

b the SS7 Interface Card board member (board) number (1-4)

c Control computer number (1-120).

6.117.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Reenter the **RST:SS7BRD** message with a valid SS7BRD number.
3. For information only.
4. Check if the SS7 board is equipped.
5. Check if an SS7 board is performing download, and try later.
6. Check the SS7 board status, and reenter the **RST:SS7BRD** input message.
7. Check the power on the SS7 board.
8. Check the power on the SS7 board or contact the System Administrator.
9. Seek the next level of technical assistance.
10. Seek the next level of technical assistance.
11. Seek the next level of technical assistance.
12. Check if the SS7 board is on the slot, or seek the next level of technical assistance.

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13. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
14. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
15. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
16. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
17. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
18. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
19. Reenter the **RST:SS7BRD** input message. If it still fails, seek the next level of technical assistance.
20. Check the SS7 node ID, then reeenter the **RST:SS7BRD** input message in the local node.
21. Restore the control computer in the active state, then re-enter the **RST:SS7BRD** input message.

6.117.7 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

RST:SS7BRD

Output Messages:

```
OP STATUS SS7BRD
```

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6.118 RST SS7NODE

Application
S7SCH

Message Class
MAINT

6.118.1 Reason for output

Reports the processing status of the **RST:SS7NODE** input message.

6.118.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7217	No	None
3	/S7221	No	None

6.118.3 Format

The following formats are listed for this command.

1. `RST SS7NODE COMPLETED SUCCESSFULLY`
2. `RST SS7NODE FAILED DUE TO SS7 NODE ALREADY RESTORED`
3. `RST SS7NODE FAILED, NOT A CLUSTERED CONFIGURATION`

6.118.4 Parameters

None.

6.118.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Use **OP:SS7NODE** to check the local node status.
3. Check the configuration to verify if it is in a cluster configuration.

6.118.6 Additional information and references

The following are additional information sources regarding this command.

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Input messages

RMV:SS7NODE
RST:SS7NODE
OP:SS7NODE

Output messages

None.

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6.119 RST SSN

Application
SS7

Message class
MAINT

6.119.1 Reason for output

The following describes the reason for output when executing this command.

1. Report the processing status of the input message **RST:SSN**.
2. Report the processing status of the input message **RST:SSN**.
3. Report the processing status of the input message **RST:SSN**.

6.119.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/SA000	No	None
2	/SA001	No	None
3	/SA015	No	None

6.119.3 Format

The following formats are listed for this command.

1. `RST SSN= a REQUEST SUCESSFULLY COMPLETED`
2. `RST SSN= a FAILED - REASON b`
3. `RST SSN=a FAILED, RST CANNOT BE DONE WHILE SPA c IS PART OF AN UPDATE`

6.119.4 Parameters

`a` the subsystem number (SSN) (5-254). For release 7.0 and later, 0 is a valid SSN.

`b` an error description

`c` the name of the Service Package Application (SPA) associated with the given SSN

6.119.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. Check error description. For hardware correctable errors, take action. For software errors, seek the next level of technical assistance.

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3. Wait for the SPA update process to complete, or use the **UPD:BKOUT,SPA** input message to backout the update. To find out which update the SPA is involved in, use the **UPD:PRINT,SPA** input message.

6.119.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

RST:SSN
UPD:BKOUT,SPA
UPD:PRINT,SPA

Output Messages:

None.

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6.120 SET ASOCC

Application
S7SCH

Message class
MAINT, NMPOLL

6.120.1 Platform

Applicable to all platforms except where explicitly stated.

6.120.2 Reason for output

The following describes the reason for output when executing this command.

1. Execution of the **SET:ASOCC** input message was successful.
2. Execution of the **SET:ASOCC** input message failed because the Service Management System (SMS)-Originated Code Control (SOCC) was already set on the key specified in the input message.
3. The platform allows 256 manual ASOCC`s at any time. If you try to set a 257th ASOCC, you receive this error.

Important! The Message Class is set to NMPOLL when the input message uses the optional parameter OSS=NTM. This causes the output message to spool to the NetMinder log file instead of the regular maintenance log (OMlog).

6.120.3 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7051	No	None
3	/S7053	No	None

6.120.4 Format

The following formats are listed for this command.

1. `SET ASOCC, KEY= a , DIGTYPE= b , GAPLVL= c , DURLVL= d COMPLETED SUCCESSFULLY.`
2. `SET ASOCC, KEY= a , DIGTYPE= b , GAPLVL= c , DURLVL= d FAILED ASOCC IS ALREADY SET ON THE KEY`
3. `SET ASOCC, KEY= a , DIGTYPE= b , GAPLVL= c , DURLVL= d FAILED THE ASOCC TABLE IS FULL`

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6.120.5 Parameters

a the controlled code. This is a keyed number of 1 - 10 digits or hex digits [0-9,A-F] depending upon the value used in the input SET:ASOCC message.

b the type of digits:

AOCLI

Automatic call gapping on calling line identity. This value displays a KEY of 1 - 10 digits.

AOSR

Automatic call gapping on platform received number. This value displays a KEY of 3 - 10 digits.

AOCID

Automatic call gapping on customer ID. This value displays a KEY of 1 - 10 digits.

c one of the following control gap interval values:

0=Remove Gap Control

1=0.00 seconds

2=0.10 seconds

3=0.25 seconds

4=0.50 seconds

5=1.00 seconds

6=2.00 seconds

7=5.00 seconds

8=10.00 seconds

9=15.00 seconds

10=30.00 seconds

11=60.00 seconds

12=120.00 seconds

13=300.00 seconds

14=600.00 seconds

15=Stop All Calls

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d one of the following control duration level values:

0=Not Used

1=1 second

2=2 seconds

3=4 seconds

4=8 seconds

5=16 seconds

6=32 seconds

7=64 seconds

8=128 seconds

9=256 seconds

10=512 seconds

11=1024 seconds

12=2048 seconds

6.120.6 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. You may have to cancel one of the existing ASOCCs by entering the **CANC:ASOCC** input message. Then reenter the **SET:ASOCC** input message.

6.120.7 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CANC:ASOCC
OP:ASOCC
SET:ASOCC

Output Messages:

CANC ASOCC
OP ASOCC

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6.121 SET BOOTLVL

Application
INIT

Message class
MAINT

6.121.1 Reason for output

Reports the processing status of the input message **SET:BOOTLVL**.

6.121.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/IN031	No	None
2	/IN030	No	None
3	/IN029	No	None
4	/IN028	No	None
5	/IN027	No	None
6	/IN026	No	None
7	/IN025	No	None
8	/IN024	No	None
9	/IN023	No	None
10	/IN022	No	None
11	/IN021	No	None

6.121.3 Format

The following formats are listed for this command.

1. `SET BOOTLVL COMPLETED - BOOT LEVEL SET TO a (WAS a )`
2. `SET BOOTLVL a FAILED TO MOVE TEMPORARY FILE b TO b . ERRNO c`
3. `SET BOOTLVL a FAILED TO WRITE END OF INITLIST TO TEMPORY FILE b , ERRNO c`
4. `SET BOOTLVL a FAILED TO WRITE NEW BOOT LEVEL TO TEMPORY FILE b , ERRNO c`
5. `SET BOOTLVL a FAILED TO WRITE TEMPORARY FILE b , ERRNO c`
6. `SET BOOTLVL a DID NOT FIND ANY NON-NULL, NON-COMMENT LINES IN b`
7. `SET BOOTLVL a FAILED TO OPEN TEMPORARY FILE b`
8. `SET BOOTLVL a READ d BYTES FROM b (EXPECTED e )`

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9. SET BOOTLVL *a* FAILED TO ALLOCATE SPACE, ERRNO *c*
10. SET BOOTLVL *a* FAILED TO OPEN INITLIST - *b* - ERRNO *c*
11. SET BOOTLVL *a* FAILED TO FIND INITLIST - *b*

6.121.4 Parameters

a one of the following values:

20=Day 1 boot.

30=Database only.

80=Full system.

90=Full system, automatically start provisioned SPAs.

91-255=User-defined run levels.

b an filename.

c an internal error code.

d an actual number.

e an expected number.

Warning! If the Active Control Computer is out of service, the initlist on the Active Control Computer can not be updated.

6.121.5 Action to be taken

None. This message is for information only.

6.121.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

SET:BOOTLVL
SET:RUNLVL

Output Messages:

None.

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6.122 SET RUNLVL

Application
INIT

Message class
MAINT

6.122.1 Reason for output

Reports the processing status of the input message **SET:RUNLVL**.

6.122.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/IN033	No	None
2	/IN000	No	None
3	/IN001	No	None
4	/IN002	No	None
5	/IN003	No	None
6	/IN006	No	None
7	/IN010	No	None
8	/IN016	No	None
9	/IN018	No	None
10	/IN032	No	None
11	/IN034	No	None
12	/IN039	No	None

6.122.3 Format

The following formats are listed for this command.

1. `SET RUNLVL= a COMPLETED FOR NEW SYSTEM RUN LEVEL a , b PROCS STARTED`
2. `SET RUNLVL= a FAILED TO GET MSGH QID, ERROR c`
3. `SET RUNLVL= a FAILED TO SEND REQUEST TO INIT, ERROR c`
4. `SET RUNLVL= a RECEIVE MESSAGE FAILED, ERROR b`
5. `SET RUNLVL= a RECIEVED INVALID ACK RESPONSE, SIZE (number) (expected (number))`

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6. SET RUNLVL= *a* RECEIVED INVALID FAILURE MESSAGE, SIZE (number) (expected (number))
7. SET RUNLVL= *a* FAILED TO RECEIVE RESPONSE FROM INIT
8. SET RUNLVL= *a* FAILED - SYSTEM IS CURRENTLY IN AN INITIALIZATION INTERVAL
9. SET RUNLVL= *a* FAILED - UNKNOWN ERROR *c* RECEIVED FROM INIT
10. SET RUNLVL= a RECEIVED INVALID ACK RESPONSE - SYSTEM RUN LEVEL *a* (expected *a*)
11. SET RUNLVL= *a* FAILED - RUN LEVEL *a* IS BELOW CURRENT SYSTEM RUN LEVEL - *a*
12. SET RUNLVL= *a* FAILED - INIT LIST (/sn/init/initlist) IS CORRUPTED OR MISSING

6.122.4 Parameters

a the run level number.

b number of control computer processes which were started in response to the **SET:RUNLVL** input message.

c error code.

6.122.5 Action to be taken

For format [12], seek the next level of technical assistance. All other formats are for information only.

6.122.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

OP:INIT
SET:RUNLVL

Output Messages:

None.

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6.123 SET SOCC

Application
S7SCH

Message class
MAINT

6.123.1 Reason for output

The following describes the reason for output when executing this command.

1. Execution of the **SET:SOCC** input message was successful.
2. Execution of the **SET:SOCC** input message failed because the Service Management System (SMS)-Originated Code Control (SOCC) was already set on the key specified in the input message.
3. The platform allows 256 manual SOCCs at any time. If you try to set a 257th SOCC, you will get this error.
4. Execution of the **SET:SOCC** input message was successful.
5. Execution of the **SET:SOCC** input message failed because the Service Management System (SMS)-Originated Code Control (SOCC) was already set on the key specified in the input message.
6. The platform allows 256 manual SOCCs at any time. If you try to set a 257th SOCC, you will get this error.

6.123.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	/S7000	No	None
2	/S7051	No	None
3	/S7053	No	None
4	/S7000	No	None
5	/S7051	No	None
6	/S7053	No	None

6.123.3 Format

The following formats are listed for this command.

1. `SET SOCC, KEY= a , DIGTYPE= b , GAPLVL= c , DURLVL= d COMPLETED SUCCESSFULLY.`

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2. SET SOCC, KEY= *a* , DIGTYPE= *b* , GAPLVL= *c* , DURLVL= *d* FAILED SOCC IS ALREADY SET ON THE KEY
3. SET SOCC, KEY= *a* , DIGTYPE= *b* , GAPLVL= *c* , DURLVL= *d* FAILED THE SOCC TABLE IS FULL
4. SET SOCC, KEY= *a* , TRANSTYPE= *e* , GAPLVL= *c* , DURLVL= *d* COMPLETED SUCCESSFULLY
5. SET SOOC, KEY= *a* , TRANSTYPE= *e* , GAPLVL= *c* , DURLVL= *d* FAILED SOCC IS ALREADY SET ON THE KEY
6. SET SOCC, KEY= *a* , TRANSTYPE= *e* , GAPLVL= *c* , DURLVL= *d* FAILED THE SOCC TABLE IS FULL

6.123.4 Parameters

a the controlled code, a keyed number with 3, 6, 7, 8, 9, or 10 digits.

b the type of digits:

DIALED = The called number.

ANI = The calling number.

c the control gap level.

d the control duration level.

e the translation type (0-255). This type number is determined by the Signal Transfer Point (STP) and associated with the trigger type on the Service Switching Point (SSP).

6.123.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.
3. You may have to cancel one of the existing SOCCs by entering the **CANC:SOCC** input message. Then reenter the **SET:SOCC** input message.
4. For information only.
5. For information only.
6. You may have to cancel one of the existing SOCCs by entering the **CANC:SOCC** input message. Then reenter the **SET:SOCC** input message.

6.123.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

CANC:SOCC
OP:SLK

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OP:SOCC
SET:SOCC

Output Messages:

None.

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6.124 SND ALCLEAR

Application
SNMP

Message class
MAINT

6.124.1 Reason for output

Reports the processing status of the **SND:ALCLEAR** input message.

6.124.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1	NM008	No	None
2	NM009	No	None

6.124.3 Format

The following formats are listed for this command.

1. **SND ALCLEAR,ALINDEX=** *a* **COMPLETED**
2. **SND ALCLEAR,ALINDEX=** *a* **FAILED**

6.124.4 Parameters

a the alarm index passed to the input message.

6.124.5 Action to be taken

The following corrective actions are listed below.

1. For information only.
2. For information only.

6.124.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

SND:ALCLEAR

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Output Messages:

None.

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6.125 TRAP ASSOC

Application
STSCH

Message class
MAINT, NMPOLL

6.125.1 Reason for output

The following are reasons for output when executing this command.

1. Reports the status of the **TRAP:ASSOC** input message.

6.125.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Repeat	Alarm level
1		No	None
2		No	None

6.125.3 Format

The following formats are listed for this command.

1. `TRAP ASSOC= [a-b,b] COMMAND COMPLETED SUCCESSFULLY.`
2. `TRAP ASSOC= a FAILED - TRAP IS NOT SUPPORTED FOR NON-M3UA ASSOCIATIONS`

6.125.4 Parameters

`a` node number (0-31)

`b` the association number (1-62)

6.125.5 Action to be taken

The following corrective actions are listed below.

1. None. This message is for information only.
2. None. This message is for information only.

6.125.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

TRAP:ASSOC

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Output Messages:

None.

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Asserts

6.126 Overview

6.126.1 Purpose

This chapter introduces the concept of an assert. Asserts in the 23000 to 23999 range indicate SS7 Service Circuit Handler (S7SCH) errors.

6.126.2 Contents

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6.127 General assert information

6.127.1 Definition

Asserts are small segments of code within programs or processes that check the validity of data during system operation.
Each time a program reaches a defensive check, a test is made to determine if an assertion is true.

If the assertion is...	then...
true	no action is taken.
false	an assert failure exists. An assert message will be stored in the OMLog file. The assert message provides information about the unexpected software event that transpired.

6.127.2 Types of Checks

Asserts perform various kinds of checks, including:

- range checks on pointers, global data, and function arguments to ensure that reads and writes occur within restricted ranges
- redundancy checks made on duplicate copies of data stored at different locations to detect memory errors
- point-to-point checks to prevent network data structure corruption
- consistency checks between logically related blocks of data
- message acknowledgment checks on static and dynamic data
- return code checks to detect erroneous return values

6.127.3 Presentation of asserts in this document

Each assert documented in this manual includes the following items:

Definitions

Number
The numeric identifier that precedes the header text in the assert message.

Format
The text that appears in the assert message. The message may include 0 or more variables which are denoted by the lower case letters a,b,c,etc. Variables are described in the Variables section.

Explanation
Descriptive information explaining the events that triggered the assert.

Variables
Definitions of any variables used in the assert. Variables are denoted in the Format section by lower case letters a,b,c, etc.

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Action to be taken
Listed in this section are recommended corrective actions that may resolve the problems associated with an assert condition. Not every problem associated with an assert has a corresponding corrective action.

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6.128 23001

6.128.1 Format

```
CANNOT CREATE S7SCH SHARED MEMORY QUEUE - ERROR CODE=a
```

6.128.2 Explanation

The SS7 Service Circuit Handler (S7SCH) process cannot create the shared memory queue between the Control Process (CPROC) and Read Processor (RPROC) because insufficient system memory exists.

6.128.3 Variables

The following variables are used in this assert:

a The numerical UNIX error code.

6.128.4 Action to be taken

To correct this problem, perform the following steps:

1

A system-wide UNIX boot is necessary to recover from this condition.

Important! A system-wide boot will temporarily suspend all call processing.

From the UNIX console, enter the following input messages to perform the boot:

```
init b
init a
```

2

If the corrective action presented above does not correct the problem then seek the next level of technical support.

END OF STEPS

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6.129 23002

6.129.1 Format

CANNOT REGISTER PROCESS NAME ON MSGH - ERROR CODE=*a*

6.129.2 Explanation

The SS7 Service Circuit Handler (S7SCH) cannot register its process name with the Message Handler (MSGH) because no system queue is available.

6.129.3 Variables

The following variables are used in this assert:

a The numerical UNIX error code.

6.129.4 Action to be taken

To correct this problem, perform the following steps:

1

A system-wide UNIX boot is necessary to recover from this condition

Important! A system-wide boot will temporarily suspend all call processing.

From the UNIX console, enter the following input messages to perform the boot:

```
init b
init a
```

2

If the corrective action presented above does not correct the problem then seek the next level of technical support.

END OF STEPS

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6.130 23003

6.130.1 Format

```
CANNOT ATTACH TO SPMAN SHARED MEMORY - ERROR CODE=a
```

6.130.2 Explanation

The SS7 Service Circuit Handler (S7SCH) cannot attach to the Service Package Manager's (SPMAN's) shared memory. SPMAN must be up and running before starting the S7SCH.

6.130.3 Variables

The following variables are used in this assert:

a The numerical UNIX error code.

6.130.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that SPMAN is up and running:

```
OP:INIT
```

2

If SPMAN is operational, then a system-wide UNIX boot is necessary to recover from this condition.

Important! A system-wide boot will temporarily suspend all call processing.

From the UNIX console, enter the following input message to perform the boot:

```
init b
init a
```

3

If the corrective action presented above does not correct the problem then seek the next level of technical support.

End of steps

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6.131 23004

6.131.1 Format

CANNOT ATTACH TO S7SCH SHARED MEMORY QUEUE - ERROR CODE=*a*

6.131.2 Explanation

The SS7 Service Circuit Handler (S7SCH) shared memory queue was removed by the system. The S7SCH SPROC and Read Processor (RPROC) have detached from shared memory simultaneously.

6.131.3 Variables

The following variables are used in this assert:

a The numerical UNIX error code.

6.131.4 Action to be taken

To correct this problem, perform the following:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

INIT:PROC=S7SCH,LEVEL=1

2

If the corrective action presented above does not correct the problem then seek the next level of technical support.

END OF STEPS

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6.132 23005

6.132.1 Format

```
CANNOT CREATE S7SCH SHARED MEMORY
```

6.132.2 Explanation

The SS7 Service Circuit Handler (S7SCH) process cannot create the shared memory for its data objects because system memory is insufficient.

6.132.3 Action to be taken

To correct this problem, perform the following steps:

1

A system-wide UNIX boot is necessary to recover from this condition

Important! A system-wide boot will temporarily suspend all call processing.

From the UNIX console, enter the following input messages to perform the boot:

```
init b
init a
```

2

If the corrective action presented above does not correct the problem then seek the next level of technical support.

End of steps

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6.133 23006

6.133.1 Format

```
CANNOT ATTACH TO S7SCH SHARED MEMORY
```

6.133.2 Explanation

The SS7 Service Circuit Handler (S7SCH) internal shared memory segment was removed. The process cannot attach to its own shared memory segment.

6.133.3 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If the corrective action presented above does not correct the problem then seek the next level of technical support.

END OF STEPS

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6.134 23007

6.134.1 Format

```
CANNOT GET SPMAN'S QID - ERROR CODE=a
```

6.134.2 Explanation

The SS7 Service Circuit Handler (S7SCH) cannot retrieve the Service Package Manager's (SPMAN's) QID through the Message Handler (MSGH). SPMAN must be operational before the S7SCH is started.

6.134.3 Variables

The following variables are used in this assert:

`a` The numerical UNIX error code.

6.134.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that SPMAN is up and running:

```
OP:INIT
```

2

If SPMAN is operational, then a system-wide UNIX boot is necessary to recover from this condition.

Important! A system-wide boot will temporarily suspend all call processing.

From the UNIX console, enter the following input message to perform the boot:

```
init b
init a
```

3

If the corrective action presented above does not correct the problem then seek the next level of technical support.

END OF STEPS

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6.135 23011

6.135.1 Format

```
invalid type_of_digit a
```

6.135.2 Explanation

The message from the Command Execution Program (CEP) contains an invalid digit type.

6.135.3 Variables

The following variables are used in this assert:

a The invalid digit type.

6.135.4 Action to be taken

This assert is for information only. No action is required.

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6.136 23012

6.136.1 Format

```
invalid number_of_digit a
```

6.136.2 Explanation

The message from the Command Execution Program (CEP) contains an invalid number of digits and does not comply with the North American Dialing Plan. Digit length field should comply with the NPA-NXX-XXX format.

6.136.3 Variables

The following variables are used in this assert:

`a` The invalid number of digits.

6.136.4 Action to be taken

This assert is for information only. No action is required.

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6.137 23013

6.137.1 Format

```
invalid PC=a
```

6.137.2 Explanation

An invalid Point Code (PC) for the Calling Name (CNAM) delivery was inserted. The PC must be a nonzero value.

6.137.3 Variables

The following variables are used in this assert:

`a` The unsigned hexadecimal PC identifier.

6.137.4 Action to be taken

This assert is for information only. No action is required.

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6.138 23014

6.138.1 Format

```
table is full
```

6.138.2 Explanation

The Calling Name (CNAM) table reached its physical limit. The data stored in the SS7 Service Circuit Handler (S7SCH) is now out of sync with the data stored in the platform database.

6.138.3 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

`INIT:PROC=S7SCH,LEVEL=1`

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

END OF STEPS

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6.139 23015

6.139.1 Format

```
PC=a entry exist
```

6.139.2 Explanation

The craft tried to insert an existing Point Code (PC) into the Calling Name (CNAM) table. The data stored in the SS7 Service Circuit Handler (S7SCH) is now out of sync with the data stored in the platform database.

6.139.3 Variables

The following variables are used in this assert:

`a` The unsigned hexadecimal PC identifier.

6.139.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

`INIT:PROC=S7SCH,LEVEL=1`

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

END OF STEPS

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6.140 23016

6.140.1 Format

```
table is empty
```

6.140.2 Explanation

The craft tried to delete an entry from the Calling Name (CNAM) table, but the table is empty. The data stored in the SS7 Service Circuit Handler (S7SCH) is now out of sync with the data stored in the platform database.

6.140.3 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

`INIT:PROC=S7SCH,LEVEL=1`

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

END OF STEPS

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6.141 23017

6.141.1 Format

```
PC=a does not exist
```

6.141.2 Explanation

The craft tried to delete a nonexisting Point Code (PC) entry from the Calling Name (CNAM) table. The data stored in the SS7 Service Circuit Handler (S7SCH) is now out of sync with the data stored in the platform database.

6.141.3 Variables

The following variables are used in this assert:

`a` The unsigned hexadecimal PC identifier.

6.141.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

`INIT:PROC=S7SCH,LEVEL=1`

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

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6.142 23018

6.142.1 Format

```
Failed to allocate a memory from memory pool
```

6.142.2 Explanation

The SS7 Service Circuit Handler (S7SCH) internal shared memory segment has run out of memory. The data stored in the S7SCH is now out of sync with the data stored in the platform database.

6.142.3 Variables

The following variables are used in this assert:

a The amount of memory that could not be allocated.

6.142.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the S7SCH:

INIT:PROC=S7SCH,LEVEL=1

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

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6.143 23019

6.143.1 Format

```
Attempt to start running timer,type=a, para=b
```

6.143.2 Explanation

A duplicate/identical timer is running.

6.143.3 Variables

The following variables are used in this assert:

- a — The numerical type.
- b — The numerical parameter.

6.143.4 Action to be taken

This assert is for information only. No action is required.

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6.144 23020

6.144.1 Format

```
Timer value is out of range, timer_id = a, value=b
```

6.144.2 Explanation

The timer value is too big to be handled by the S7 timer object.

6.144.3 Variables

The following variables are used in this assert:

- a — The numerical timer identifier.
- b — The numerical timer value.

6.144.4 Action to be taken

This assert is for information only. No action is required.

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6.145 23021

6.145.1 Format

```
Timer control block not available
```

6.145.2 Explanation

The system is running out of timer control blocks.

6.145.3 Action to be taken

To correct this problem, perform the following:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH):

```
INIT:PROC=S7SCH,LEVEL=1
```

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

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6.146 23022

6.146.1 Format

```
Invalid input parametera, type=a, parameter=b
```

6.146.2 Explanation

The specified timer type exceeded its upper limit.

6.146.3 Variables

The following variables are used in this assert:

- a — The numerical timer type.
- b — The numerical timer parameter.

6.146.4 Action to be taken

This assert is for information only. No action is required.

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6.147 23023

6.147.1 Format

```
SCDETIMER failed timer type=a para=b ret_value=c
```

6.147.2 Explanation

The system tried to stop a timer after the timer expired.

6.147.3 Variables

The following variables are used in this assert:

- a — The numerical type.
- b — The numerical parameter.
- c — The numerical return value.

6.147.4 Action to be taken

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6.148 23024

6.148.1 Format

```
Invalid timer type=a
```

6.148.2 Explanation

A timer of the specified type has expired.

6.148.3 Variables

The following variables are used in this assert:

a The numerical timer type.

6.148.4 Action to be taken

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6.149 23025

6.149.1 Format

```
Cannot create a Ss7_msg object
```

6.149.2 Explanation

The internal shared memory segment of the SS7 Service Circuit Handler (S7SCH) process is running out of memory space.

6.149.3 Action to be taken

To correct this problem, perform the following:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH):

```
INIT:PROC=S7SCH,LEVEL=1
```

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

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6.150 23026

6.150.1 Format

```
Cannot allocate data block for Ss7_msg
```

6.150.2 Explanation

The internal shared memory segment of the SS7 Service Circuit Handler (S7SCH) process is running out of memory space.

6.150.3 Action to be taken

To correct this problem, perform the following:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH):

INIT:PROC=S7SCH,LEVEL=1

Result: This initialization will resynchronize the data in the S7SCH and the platform database.

2

If this assert continues to occur after the initialization taken in Step 1, then seek the next level of technical support.

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6.151 23027

6.151.1 Format

```
register failed
```

6.151.2 Explanation

The SS7 Service Circuit Handler (S7SCH) cannot register its process name with Trap and Trace (TT).

6.151.3 Action to be taken

To correct this problem, perform the following:

1

Enter the following input message to verify that TT is in service:

OP:INIT,STATUS

2

Determine the following:

If TT is...	then...
in service	seek the next level of technical support.
NOT in service	resolve the TT outage. Then enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH): **INIT:PROC=S7SCH, LEVEL=1**

3

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.152 23028

6.152.1 Format

```
dump_ss7 failed, since no space left in /sn/core
```

6.152.2 Explanation

Attempt to dump the ss7 board coredump data to /sn/core/S7SCH failed.

6.152.3 Action to be taken

To correct this problem, perform the following:

1

Save and remove the files under the /sn/core directory.

2

Document and report the problem to Technical Support.

END OF STEPS

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6.153 23050

6.153.1 Format

```
MHattach() failed! rtn=a
```

6.153.2 Explanation

A Message Transfer Part (MTP) level 2 field update temporary process failed to attach to the Message Handler (MSGH) process.

6.153.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.153.4 Action to be taken

Seek the next level of technical support to determine whether or not a system-wide initialization is necessary.

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6.154 23051

6.154.1 Format

```
MHregName() failed! rtn=a
```

6.154.2 Explanation

A Message Transfer Part (MTP) level 2 field update temporary process failed to register its process name with the process.

6.154.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.154.4 Action to be taken

Seek the next level of technical support to determine whether or not a system-wide initialization is necessary.

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6.155 23052

6.155.1 Format

```
MHsend() failed! rtn=a
```

6.155.2 Explanation

A Message Transfer Part (MTP) level 2 field update temporary process failed to send messages to a certain process.

6.155.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.155.4 Action to be taken

Seek the next level of technical support to determine whether or not a system-wide initialization is necessary.

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6.156 23053

6.156.1 Format

```
MHreceive() failed! rtn=a
```

6.156.2 Explanation

A Message Transfer Part (MTP) level 2 field update temporary process failed to receive messages.

6.156.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.156.4 Action to be taken

Seek the next level of technical support to determine whether or not a system-wide initialization is necessary.

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6.157 23054

6.157.1 Format

```
received message of size a, not size b
```

6.157.2 Explanation

A Message Transfer Part (MTP) level 2 field update temporary process received a message of the size specified by the first variable (***a***) but was expecting/requiring a message of the size specified by the second variable (***b***).

6.157.3 Variables

The following variables are used in this assert:

a The actual message size that was received.

b The expected message size.

6.157.4 Action to be taken

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6.158 23100

6.158.1 Format

```
MHgetMhqid(S7SCH) failed! rtn=a
```

6.158.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Read Processor (RPROC) failed to get the message queue ID of the S7SCH Control Processor (CPROC).

6.158.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.158.4 Action to be taken

To correct this problem, perform the following:

1

Enter the following input message to verify that the S7SCH is in service:

`OP:INIT`

2

Determine the following:

If the S7SCH is...	then...
in service	a system-wide initialization is necessary to recover from this condition. **Important!** A system-wide initialization will temporarily suspend all call processing. Seek the next level of technical support before performing a system-wide initialization.
NOT in service	resolve the outage.

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6.159 23101

6.159.1 Format

```
MHreceive() failed! rtn=a
```

6.159.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Read Processor (RPROC) failed to receive a message.

6.159.3 Variables

The following variables are used in this assert:

a The numerical return value.

6.159.4 Action to be taken

Seek the next level of technical support.

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6.160 23102

6.160.1 Format

```
SQattach() failed! rtn=a errno=b
```

6.160.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Read Processor (RPROC) failed to attach to the S7SCH Control Processor (CPROC) shared memory.

6.160.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

`b` The numerical UNIX error code.

6.160.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that the S7SCH is in service:

`OP:INIT`

2

Determine the following:

If the S7SCH is...	then...
in service	a system-wide initialization is necessary to recover from this condition. **Important!** A system-wide initialization will temporarily suspend all call processing. Seek the next level of technical support before performing a system-wide initialization.
NOT in service	resolve the outage.

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6.161 23103

6.161.1 Format

```
MHattach() failed! rtn=a errno=b
```

6.161.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Read Processor (RPROC) failed to attach to the Message Handler (MSGH) process.

6.161.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

`b` The numerical UNIX error code.

6.161.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that the MSGH is in service:

`OP:INIT`

2

Determine the following:

If the MSGH is...	then...
in service	a system-wide initialization is necessary to recover from this condition. **Note:** A system-wide initialization will temporarily suspend all call processing. Seek the next level of technical support before performing a system-wide initialization.
NOT in service	resolve the outage.

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6.162 23104

6.162.1 Format

```
MHregName() failed! rtn=a
```

6.162.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Read Processor (RPROC) failed to register a process name with the Message Handler (MSGH) process.

6.162.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.162.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that the MSGH is in service:

OP:INIT

2

Determine the following:

If the MSGH is...	then...
in service	a system-wide initialization is necessary to recover from this condition. **Important!** A system-wide initialization will temporarily suspend all call processing. Seek the next level of technical support before performing a system-wide initialization.
NOT in service	resolve the outage.

End of steps

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6.163 23105

6.163.1 Format

```
open() failed! file=a errno=b
```

6.163.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Read Processor (RPROC) failed to open a STREAMS file.

6.163.3 Variables

The following variables are used in this assert:

a The name of the file.

b The numerical UNIX error code.

6.163.4 Action to be taken

Seek the next level of technical support.

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6.164 23200

6.164.1 Format

```
open() failed! brd=a errno=b
```

6.164.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Control Processor (CPROC) failed to open a STREAMS file for an abnormal reason.

6.164.3 Variables

The following variables are used in this assert:

`a` The board number.

`b` The numerical UNIX error code.

6.164.4 Action to be taken

Seek the next level of technical support.

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6.165 23201

6.165.1 Format

```
MHgetMhqid(S7SCHRP1) failed! brd=a rtn=b
```

6.165.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Control Processor (CPROC) failed to get the message queue ID of the S7SCH Read Processor (RPOC).

6.165.3 Variables

The following variables are used in this assert:

`a` The board number.

`b` The numerical return value.

6.165.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that the S7SCHRP1 process is active:

`OP:INIT`

2

Determine the following:

If the S7SCHRP1 is...	then...
active	a system-wide initialization is necessary to recover from this condition. **Important!** A system-wide initialization will temporarily suspend all call processing. Seek the next level of technical support before performing a system-wide initialization.
NOTactive	resolve the outage.

END OF STEPS

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6.166 23202

6.166.1 Format

```
invalid board in slot, brd=a slot=b
```

6.166.2 Explanation

The SS7 Service Circuit Handler (S7SCH) Control Processor (CPROC) detected either an invalid board in the SS7Interface Controller (SS7IC) slot or an empty SS7IC slot.

6.166.3 Variables

The following variables are used in this assert:

`a` The board number.

`b` The name of the slot.

6.166.4 Action to be taken

To correct this problem, perform the following steps:

1

Determine the following:

If...	then...
the slot is empty	go to Step 2.
a board is located in the slot	enter the mds commands from the UNIX console to remove the invalid board. Go to Step 2.

2

Insert a valid SS7IC board in the specified slot.

3

Enter the following input message to restore the board to service:

`RST:SS7BRD=a`

The pertinent input message variable is:

`a` The SS7IC board number (1-3).

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4

If the corrective action presented above does not correct the problem then seek the next level of technical support.

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6.167 23203

6.167.1 Format

```
MHattach() failed! rtn=a
```

6.167.2 Explanation

The SS7 Interface Controller (SS7IC) diagnostic temporary process failed to attach to the Message Handler (MSGH) process.

6.167.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.167.4 Action to be taken

Seek the next level of technical support.

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6.168 23204

6.168.1 Format

```
MHregName() failed! rtn=a
```

6.168.2 Explanation

The SS7 Interface Controller (SS7IC) diagnostic temporary process failed to register a process name with the Message Handler (MSGH).

6.168.3 Variables

The following variables are used in this assert:

a The numerical return value.

6.168.4 Action to be taken

Seek the next level of technical support.

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6.169 23205

6.169.1 Format

```
board not in slot, slot=a
```

6.169.2 Explanation

The SS7 Interface Controller (SS7IC) diagnostic temporary process detected that an SS7IC slot is empty.

6.169.3 Variables

The following variables are used in this assert:

a The name of the slot.

6.169.4 Action to be taken

To correct this problem, perform the following steps:

1

Insert a valid SS7IC board in the specified slot.

2

Enter the following input message to verify that the board is operational:

DGN:SS7BRD=a

The pertinent input message variable is:

a The SS7IC board number (1-3).

3

When the diagnostic passes, enter the following input message to place the board in service:

RST:SS7BRD=a

The pertinent input message variable is:

a The SS7IC board number (1-3).

4

If the corrective actions presented above do not correct the problem then seek the next level of technical support.

End of steps

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6.170 23206

6.170.1 Format

```
Failed to allocate memory for CLS=a
```

6.170.2 Explanation

The specified combined link set (CLS) cannot be added because of a memory shortage.

6.170.3 Variables

The following variables are used in this assert:

a The numerical CLS identifier.

6.170.4 Action to be taken

Seek the next level of technical support.

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6.171 23207

6.171.1 Format

```
Failed to assign linkset=a into combined linkset=b
```

6.171.2 Explanation

The combined link set already has two link sets and cannot be assigned a third one.

6.171.3 Variables

The following variables are used in this assert:

a The identifier of the link set that could not be assigned.

b The identifier of the combined link set that is full.

6.171.4 Action to be taken

To correct this problem, perform the following steps:

1

Verify the status of combined link sets using the Recent Change LINKSET FORM. Enter the following input message to determine if data is inconsistent with the Recent Change data:

OP:LS=a,ALL

The pertinent input message variable is:

a The signaling link set number (1-16).

2

Determine the following:

If a data inconsistency...	then...
exists	enter the following input message to perform a level 1 initialization of the SS7 Service Circuit Handler (S7SCH) to synchronize the data: **INIT:PROC=S7SCH,LEVEL=1**
does NOT exist	seek the next level of technical support.

3

If the corrective actions presented above do not correct the problem then seek the next level of technical support.

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6.172 23208

6.172.1 Format

```
Failed to allocate memory for LS=a
```

6.172.2 Explanation

The specified link set (LS) cannot be added because of a memory shortage.

6.172.3 Variables

The following variables are used in this assert:

a The numerical link set (LS) identifier.

6.172.4 Action to be taken

Seek the next level of technical support.

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6.173 23209

6.173.1 Format

```
Request to add DLS=a in CLS=b failed
```

6.173.2 Explanation

An attempt to add the specified link set data has failed.

6.173.3 Variables

The following variables are used in this assert:

a The numerical identifier of the link set data.

b The numerical identifier of the combined link set.

6.173.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If the data insertion continues to fail and this assert continues to occur, then seek the next level of technical support.

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6.174 23210

6.174.1 Format

```
Request to add SLK=a-b in LS=c failed
```

6.174.2 Explanation

An attempt to assign data to the specified link set has failed.

6.174.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link (SLK).

`c` The numerical identifier of the link set (LS).

6.174.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If the data insertion continues to fail and this assert continues to occur, then seek the next level of technical support.

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6.175 23211

6.175.1 Format

```
Invalid link timer type assign for SLK=a-b
```

6.175.2 Explanation

An attempt was made to assign an invalid timer to the specified SS7 link (SLK).

6.175.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

6.175.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

`INIT:PROC=S7SCH,LEVEL=1`

2

If this assert continues to occur, then seek the next level of technical support.

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6.176 23212

6.176.1 Format

```
No memory for Lk_mh constructor SLK=a-b
```

6.176.2 Explanation

The specified Signaling System 7 (SS7) link (SLK) cannot be added because of a memory shortage.

6.176.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

6.176.4 Action to be taken

Seek the next level of technical support.

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6.177 23213

6.177.1 Format

```
Mtpl2 SAP connect failed with SLK=a-b
```

6.177.2 Explanation

The specified Signaling System 7 (SS7) link (SLK) cannot receive any indication from the Message Transfer Part level 2 (MTP L2).

6.177.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

6.177.4 Action to be taken

Seek the next level of technical support.

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6.178 23214

6.178.1 Format

```
Invalid congestion level, level=a
```

6.178.2 Explanation

A Message Transfer Part (MTP) level 3 received an invalid congestion level from MTP level 2.

6.178.3 Variables

The following variables are used in this assert:

a The numerical level indicator.

6.178.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

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6.179 23215

6.179.1 Format

```
Cannot send message on unequipped SLK=a-b
```

6.179.2 Explanation

A Message Transport Part level 3 tried to send a message via an unequipped Signaling System 7 (SS7) link (SLK).

6.179.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

6.179.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

`INIT:PROC=S7SCH,LEVEL=1`

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.180 23216

6.180.1 Format

```
Send msg in SLK=a-b failed, it belong to unequipped linkset=c
```

6.180.2 Explanation

A Message Transfer Part (MTP) level 3 tried to send a message via an unequipped link set.

6.180.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

`c` The numerical link set identifier.

6.180.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

`INIT:PROC=S7SCH,LEVEL=1`

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.181 23217

6.181.1 Format

```
Build load share table failed, SLK=a-b not in lks[ ] for  LS=c
```

6.181.2 Explanation

An attempt was made to build a link set load share table with a link that does not belong to the link set.

6.181.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

`c` The numerical link set identifier.

6.181.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

`INIT:PROC=S7SCH,LEVEL=1`

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.182 23218

6.182.1 Format

```
In-service SLK=a-b failed, it belong to unequipped  linkset=c
```

6.182.2 Explanation

An attempt was made to restore a link belonging to an unequipped link set.

6.182.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

`c` The numerical link set identifier.

6.182.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

`INIT:PROC=S7SCH,LEVEL=1`

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.183 23219

6.183.1 Format

```
Out-of-service SLK=a-b failed, it belong to unequipped linkset=c
```

6.183.2 Explanation

An attempt was made to remove a link belonging to an unequipped link set.

6.183.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

`c` The numerical link set identifier.

6.183.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

`INIT:PROC=S7SCH,LEVEL=1`

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.184 23220

6.184.1 Format

```
Update wrong pc data, pc=a-b-c
```

6.184.2 Explanation

An attempt was made to update the specified point code (pc). The point code data is incorrect.

6.184.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the point code.

6.184.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.185 23221

6.185.1 Format

```
Process TFx event failed, can't allocate memory  for Dmember_pc=a-b-c
```

6.185.2 Explanation

An attempt was made to add the dynamic member point code(pc); however, no memory is available.

6.185.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the dynamic member point code.

6.185.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.186 23222

6.186.1 Format

```
Try to delete non-exist pointcode=a-b-c
```

6.186.2 Explanation

An attempt was made to delete the specified point code; however, the point code does not exist in the database.

6.186.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the point code.

6.186.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

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6.187 23223

6.187.1 Format

```
Access wrong pc object, pc=a-b-c
```

6.187.2 Explanation

An attempt was made to access the specified point code (pc); however, the pointcode does not exist.

6.187.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the point code.

6.187.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.188 23224

6.188.1 Format

```
Invalid route LS=a for PC=b-c-d
```

6.188.2 Explanation

An attempt was made to use an invalid link set to route a message to the specified point code.

6.188.3 Variables

The following variables are used in this assert:

`a` The numerical link set identifier

`b,c,d` The numerical identifiers of the point code.

6.188.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.189 23225

6.189.1 Format

```
Attempt to start Route_set timer which is not exist, timer_type=a
```

6.189.2 Explanation

An attempt was made to start a nonexistent route set timer.

6.189.3 Variables

The following variables are used in this assert:

a The numerical timer type.

6.189.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.190 23226

6.190.1 Format

```
Attempt to check Route_set timer which is not exist, timer_type=a
```

6.190.2 Explanation

An attempt was made to check a nonexistent route set timer.

6.190.3 Variables

The following variables are used in this assert:

a The numerical timer type.

6.190.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

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6.191 23227

6.191.1 Format

```
Attempt to stop Route_set timer which is not exist, timer_type=a
```

6.191.2 Explanation

An attempt was made to stop a nonexistent route set timer.

6.191.3 Variables

The following variables are used in this assert:

a The numerical timer type.

6.191.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

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6.192 23228

6.192.1 Format

```
Invalid routing flag in route_set time out
```

6.192.2 Explanation

An invalid routing flag was detected while a route set congestion test timer was being handled.

6.192.3 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

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6.193 23229

6.193.1 Format

```
Rcvd Ntwk Mgmt MSU from Undefined or
Non-adjacent PC=a-b- c,h1h0=0xd
```

6.193.2 Explanation

A Message Transfer Part (MTP) level 3 received a Network Management message from an undefined point code or from nonadjacent point codes.

6.193.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the point code.

`d` The hexadecimal identifier of h1h0.

6.193.4 Action to be taken

To correct this problem, perform the following steps:

1

Using the Recent Change and Verify (RC/V) form "SS7 POINTCODE FORM," verify that adjacent point codes have been populated.

2

Determine the following:

If a point code...	then...
is defined	enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH): **`INIT:PROC=S7SCH,LEVEL=1`**
is NOT defined	a point code must be supplied.

3

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.194 23230

6.194.1 Format

```
Attempt to flush out the messages failed, brd=a
```

6.194.2 Explanation

The status between the links and the corresponding board is inconsistent. There is no problem with the links, but the board is out of service.

6.194.3 Variables

The following variables are used in this assert:

a The numerical board identifier.

6.194.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1,ucl
```

2

If this assert continues to occur, then seek the next level of technical support.

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6.195 23231

6.195.1 Format

`Cannot find /sn/s7sch/ss7d1 to execute download SS7 board`

6.195.2 Explanation

`ss7d1*` does not exist under `/sn/s7sch`.

6.195.3 Action to be taken

Seek the next level of technical support.

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6.196 23232

6.196.1 Format

`Failed to Reset the SS7 Board, brd=a`

6.196.2 Explanation

The `cfreset` command will mark any open STREAMS in error and force a controller hardware reset. Failure to reset the board may prevent it from being tested.

6.196.3 Variables

The following variables are used in this assert:

`a` The numerical board identifier.

6.196.4 Action to be taken

To correct this problem, perform the following steps:

1

Examine path */etc* to see if *cfreset* exists, or check the board to see if it is on the slot.

2

If the corrective action presented above does not resolve the problem, then seek the next level of technical support.

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6.197 23233

6.197.1 Format

```
Cannot Open the File, brd=a
```

6.197.2 Explanation

A file cannot be opened for the ssvii driver. The SS7 boards have slots, each of which is represented as a file. If these files do not exist, this assert message will occur.

6.197.3 Variables

The following variables are used in this assert:

a The numerical board identifier.

6.197.4 Action to be taken

To correct this problem, perform the following steps:

1

Examine the path to the file */config/hw/system/ctlr* to see if the *ssvii* file exists.

2

If the corrective action presented above does not resolve the problem, then seek the next level of technical support.

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6.198 23234

6.198.1 Format

`Failed to ioctl the status, brd=a`

6.198.2 Explanation

Most of the `ioctl()` commands require that the user processes provide sufficient data space for expected return data. Failure of an `ioctl()` command may cause data corruption.

6.198.3 Variables

The following variables are used in this assert:

`a` The numerical board identifier.

6.198.4 Action to be taken

Seek the next level of technical support.

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6.199 23235

6.199.1 Format

`Invalid IOP Number, iop=a`

6.199.2 Explanation

Two Input/Output Processor (IOP) modules (IOP0 and IOP1) are shared by all of the SS7 Boards. Any other IOP numbers are invalid.

6.199.3 Variables

The following variables are used in this assert:

`a` The numerical IOP identifier.

6.199.4 Action to be taken

Seek the next level of technical support.

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6.200 23236

6.200.1 Format

```
Update wrong pc data, pc=a
```

6.200.2 Explanation

An attempt was made to update the specified point code (pc). The point code data is incorrect.

6.200.3 Variables

The following variables are used in this assert:

a The numerical pc identifier.

6.200.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.201 23237

6.201.1 Format

```
Process TFx event failed, can't allocate memory for pc=a
```

6.201.2 Explanation

An attempt was made to add the dynamic member pointcode; however, no memory is available.

6.201.3 Variables

The following variables are used in this assert:

a The numerical pc identifier.

6.201.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.202 23238

6.202.1 Format

```
Try to delete non-exist pointcode=a
```

6.202.2 Explanation

An attempt was made to delete the specified point code (pc); however, the point code does not exist in the database.

6.202.3 Variables

The following variables are used in this assert:

a The numerical pc identifier.

6.202.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.203 23239

6.203.1 Format

```
Access wrong pc object, pc=a
```

6.203.2 Explanation

An attempt was made to access the specified point code (pc); however, the pointcode does not exist.

6.203.3 Variables

The following variables are used in this assert:

a The numerical pc identifier.

6.203.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.204 23240

6.204.1 Format

Invalid route LS=*a* for PC=*b*

6.204.2 Explanation

An attempt was made to use an invalid link set (LS) to route a message to the specified point code (PC).

6.204.3 Variables

The following variables are used in this assert:

a The numerical link set identifier.

b The numerical pc identifier.

6.204.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.205 23241

6.205.1 Format

Rcvd Ntwk Mgmt MSU from Undefined or Non-adjacent PC=*a*, h1h0=0x*b*

6.205.2 Explanation

A Message Transfer Part (MTP) level 3 received a Network Management message from an undefined point code (PC) or from nonadjacent point codes.

6.205.3 Variables

The following variables are used in this assert:

a The numerical identifier of the point code.

b The hexadecimal identifier of h1h0.

6.205.4 Action to be taken

To correct this problem, perform the following steps:

1

Using the Recent Change and Verify (RC/V) form "SS7 POINTCODE FORM," verify that adjacent point codes have been populated.

2

Determine the following:

If a point code...	then...
is defined	enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH): **INIT:PROC=S7SCH,LEVEL=1**
is NOT defined	a point code must be supplied.

3

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.206 23242

6.206.1 Format

MHgetMhqid(S7SCHRP1) failed! brd=*a*-*b* rtn=*c*

6.206.2 Explanation

The Control Server cannot get the message queue ID from Telecom Server (TS) upon board ID.

6.206.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the board.

`c` The numerical return value.

6.206.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that TS S7TSSCHRP is up and running:

OP:INIT

2

Determine the following:

If the S7TSSCHRP is...	then...
active	a TS system-wide initialization is necessary to recover from this condition. **Important!** A system-wide boot of TS will temporarily suspend all call processing. Seek the next level of technical support before performing a TS initialization.
NOT active	resolve the outage.

END OF STEPS

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6.207 23243

6.207.1 Format

Attempt to flush out the messages failed, brd=*a*-*b*

6.207.2 Explanation

The status between the links and the corresponding board is inconsistent. There is no problem with the links, but the board is out of service.

6.207.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the board.

6.207.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Telecom Server Service Circuit Handler (S7TSSCH):

INIT:PROC=S7TSSCH,LEVEL=1,MACHINE=TSa

The pertinent input message variable is:

`a` The SS7 Node ID.

2

If this assert continues to occur, then seek the next level of technical support.

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6.208 23244

6.208.1 Format

Request to add SLK=*a*-*b*-*c* in LS=*d* failed

6.208.2 Explanation

An attempt to assign data to the specified link set (LS) has failed.

6.208.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

`d` The numerical identifier of the link set.

6.208.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.209 23245

6.209.1 Format

Invalid link timer type assign for SLK=*a*-*b*-*c*

6.209.2 Explanation

An attempt was made to assign an invalid timer to the specified SS7 link (SLK).

6.209.3 Variables

The following variables are used in this assert:

a,b,c The numerical identifiers of the SS7 link.

6.209.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

End of steps

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6.210 23246

6.210.1 Format

No memory for Lk_mh constructor SLK=*a*-*b*-*c*

6.210.2 Explanation

The specified Signaling System 7 (SS7) link (SLK) cannot be added because of a memory shortage.

6.210.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

6.210.4 Action to be taken

Seek the next level of technical support.

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6.211 23247

6.211.1 Format

Mtpl2 SAP connect failed with SLK=*a*-*b*-*c*

6.211.2 Explanation

The specified Signaling System 7 (SS7) link (SLK) cannot receive any indication from the Message Transfer Part level 2 (MTP L2).

6.211.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

6.211.4 Action to be taken

Seek the next level of technical support.

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6.212 23248

6.212.1 Format

Can't send message on unequipped SLK=*a*-*b*-*c*

6.212.2 Explanation

A Message Transport Part level 3 tried to send a message via an unequipped Signaling System 7 (SS7) link (SLK).

6.212.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

6.212.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

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6.213 23249

6.213.1 Format

Send msg in SLK=*a*-*b*-*c* failed, it belongs to unequipped linkset=*d*

6.213.2 Explanation

A Message Transfer Part (MTP) level 3 tried to send a message via an unequipped link set.

6.213.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

`d` The numerical identifier of the link set.

6.213.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

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6.214 23250

6.214.1 Format

Build load share table failed, SLK=*a*-*b*-*c* not in lks[] for LS=*d*

6.214.2 Explanation

An attempt was made to build a link set load share table with a SS7 link (SLK) that does not belong to the link set.

6.214.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

`d` The numerical identifier of the link set.

6.214.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

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6.215 23251

6.215.1 Format

In-service SLK=*a*-*b*-*c* failed, it belongs to unequipped linkset=*d*

6.215.2 Explanation

An attempt was made to restore a SS7 link (SLK) belonging to an unequipped link set.

6.215.3 Variables

The following variables are used in this assert:

a,b,c The numerical identifiers of the SS7 link.

d The numerical identifier of the link set.

6.215.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

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6.216 23252

6.216.1 Format

Out-of-service SLK=*a*-*b*-*c* failed, it belongs to unequipped linkset=*d*

6.216.2 Explanation

An attempt was made to remove a SS7 link (SLK) belonging to an unequipped link set.

6.216.3 Variables

The following variables are used in this assert:

`a,b,c` The numerical identifiers of the SS7 link.

`d` The numerical identifier of the link set.

6.216.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (S7SCH).

INIT:PROC=S7SCH,LEVEL=1

2

If this assert continues to occur, then seek the next level of technical support.

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6.217 23400

6.217.1 Format

```
Invalid rent = a
```

6.217.2 Explanation

The peg count for the rent payment is invalid.

6.217.3 Variables

The following variables are used in this assert:

a The numerical identifier for the rent.

6.217.4 Action to be taken

This assert is for information only. No action is required.

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6.218 23401

6.218.1 Format

```
Table is full
```

6.218.2 Explanation

The transaction ID table is full.

6.218.3 Action to be taken

This assert is for information only. No action is required.

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6.219 23402

6.219.1 Format

SCCP header parsing failed, err_code=a

6.219.2 Explanation

The SS7 Service Circuit Handler (S7SCH) detected an error in the Signaling Connection Control Part (SCCP) header of an incoming message.

6.219.3 Variables

The following variables are used in this assert:

a The numerical UNIX error code.

6.219.4 Action to be taken

This assert is for information only. No action is required.

Or another option is to turn on the S7SCH trace flag s7sccper to dump the entire incoming message in hex format to the debuglog.

The message format is: **TRACE:PROC=S7SCH,MODE=s7sccper**.

The trace information may help debug the network provisioning problem.

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6.220 23403

6.220.1 Format

```
Get route failed - SSN=a
```

6.220.2 Explanation

The SS7 Service Circuit Handler (S7SCH) cannot retrieve routing information from the Service Package Manager (SPMAN).

6.220.3 Variables

The following variables are used in this assert:

a The numerical identifier for the subsystem number (SSN).

6.220.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that the SPA has registered its routing key or subsystem number (SSN) with SPMAN:

```
OP:RTGBL
```

2

The routing table must exist for the SPA to function properly. If the table exists and is properly populated yet this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.221 23404

6.221.1 Format

```
Routing failed, rtkey=a
```

6.221.2 Explanation

The SS7 Service Circuit Handler (S7SCH) cannot retrieve routing information from the Service Package Manager (SPMAN).

6.221.3 Variables

The following variables are used in this assert:

a The numerical identifier for the routing key.

6.221.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to verify that the SPA has registered its routing key or subsystem number (SSN) with SPMAN:

```
OP:RTGBL
```

2

The routing table must exist for the SPA to function properly. If the table exists and is properly populated yet this assert continues to occur, then seek the next level of technical support. If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.222 23405

6.222.1 Format

```
Invalid message type = a
```

6.222.2 Explanation

An incoming message contains an invalid Signaling Connection Control Part (SCCP) message type.

6.222.3 Variables

The following variables are used in this assert:

a The numerical identifier for the message type.

6.222.4 Action to be taken

This assert is for information only. No action is required.

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6.223 23406

6.223.1 Format

SSN unequipped, SSN=a

6.223.2 Explanation

The specified local subsystem number (SSN) is not populated.

6.223.3 Variables

The following variables are used in this assert:

a The numerical identifier for the subsystem number (SSN).

6.223.4 Action to be taken

This assert is for information only. No action is required.

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6.224 23407

6.224.1 Format

Mate SSN, *a*, unavailable

6.224.2 Explanation

The specified mate point code of the subsystem number (SSN) is set to zero.

6.224.3 Variables

The following variables are used in this assert:

a The numerical identifier for the subsystem number (SSN)

6.224.4 Action to be taken

This assert is for information only. No action is required.

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6.225 23408

6.225.1 Format

```
Timer queue is full
```

6.225.2 Explanation

The SCCP Management (SCMG) supports up to ten local timer queues for coordinate state changeover control. An attempt was made to establish an eleventh queue.

6.225.3 Action to be taken

This assert is for information only. No action is required.

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6.226 23409

6.226.1 Format

MHmsgBase::send() failed! rtn=a, dstQid=b

6.226.2 Explanation

The message send failed because the given destination queue ID is invalid.

6.226.3 Variables

The following variables are used in this assert:

a The numerical return value.

b The numerical identifier of the destination queue.

6.226.4 Action to be taken

A bug occurred in the sending process. Document the problem, and write a problem report to Technical Support.

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6.227 23411

6.227.1 Format

`EDdlcharioinit ( ) failed retval=a`

6.227.2 Explanation

The `EDdlcharioinit ( )` encoding routing cannot initialize the IOPTR.

6.227.3 Variables

The following variables are used in this assert:

`a` The numerical return value.

6.227.4 Action to be taken

This is a defense check. No action is required by maintenance personnel other than reporting the problem to the vendor.

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6.228 23412

6.228.1 Format

enc_top_ACG ( ) failed retval=*a*, encode_idx=*b*

6.228.2 Explanation

The encoding routine for the Signaling System 7 (SS7) Transaction Capability Application Part (TCAP) Automatic Call Gapping (ACG) failed.

6.228.3 Variables

The following variables are used in this assert:

a The numerical return value.

b The numerical encode identifier.

6.228.4 Action to be taken

This is a defense check. Maintenance personnel may be able to correct the problem by validating the subsystem number (SSN) recent change data and manual Enhanced Services Manager (eSM)-Originated Code Control (SOCC) list.

Or another option is to turn on the S7SCH trace flag s7acgerr to dump the outgoing TCAP ACG record from the application in hex format to the debuglog to help debug the encoding problem.

The message format is: **TRACE:PROC=S7SCH,MODE=s7acgerr**.

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6.229 23500

6.229.1 Format

`Failed to send a message from S7SCH to CEP using MSGH, error=a`

6.229.2 Explanation

The SS7 Service Circuit Handler (S7SCH) could not send a message to one of the Command Execution Processes (CEPs). This could result in failure of one of the S7SCH related User System Language Interface (USLI) commands.

6.229.3 Variables

The following variables are used in this assert:

a The message that failed, for specific information on this message refer to the Output Messages document.

6.229.4 Action to be taken

To correct this problem, perform the following steps:

1

Determine the following:

If the error code...	then...
specifies to "Try again"	reenter the failed USLI command.
does NOT specify to "Try again"	seek the next level of technical support.

END OF STEPS

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6.230 23501

6.230.1 Format

Invalid operation type received from CHG:SLK CEP

6.230.2 Explanation

The SS7 Service Circuit Handler (S7SCH) received an option other than BLK (block link) or UBLK (unblock link) in the **CHG:SLK** input message. The assert is generally attributable to a software error or to data corruption in the Command Execution Process (CEP) **CHG:SLK** or in the S7SCH or the Input Message Data Base (IMDB).

6.230.3 Action to be taken

To correct this problem, perform the following steps:

1

Reenter the **CHG:SLK** input message.

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.231 23502

6.231.1 Format

Invalid reply for CHG:SLK from S7SCH

6.231.2 Explanation

The data regarding operation type in **CHG:SLK** was lost or corrupted in the SS7 Service Circuit Handler (S7SCH). This will result in a failure of the **CHG:SLK** input message.

6.231.3 Action to be taken

To correct this problem, perform the following steps:

1

Reenter the **CHG:SLK** input message.

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.232 23503

6.232.1 Format

Internal Software error while changing Marginal Performance Threshold values

6.232.2 Explanation

The SS7 Service Circuit Handler (S7SCH) encountered an unexpected state while adding, updating, or loading the marginal performance report threshold values. This normally indicates that a software error occurred.

6.232.3 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message:

DUMP:MPR,TYPE=a,SLK=b-c

The pertinent input message variables are:

a	The marginal performance signaling link report type. CURR is the current hour's data. PREV is the previous hour's data.
b	The signaling link group number (1-3).
c	The signaling link member number (1-3).

2

Verify the marginal performance report thresholds on the hourly report and those using the Recent Change form by comparing the data in the results from the input message used in Step 1 with the Marginal Performance Thresholds Recent Change form (Form 3.7).

3

Determine the following:

If the marginal performance report threshold values...	then...
are the same	Service Node (SN) performance is not impacted and this assert can be ignored.
are not the same	seek the next level of technical support.

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6.233 23504

6.233.1 Format

Invalid POINTCODE TYPE received while adding/updating POINTCODE data in S7SCH.

6.233.2 Explanation

The SS7 Service Circuit Handler (S7SCH) does not recognize a point code type that it received from Recent Change. This assert usually is attributable to a software error in Recent Change for point code data.

6.233.3 Action to be taken

Seek the next level of technical support.

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6.234 23505

6.234.1 Format

`Bad or missing SS7 board = a`

6.234.2 Explanation

The SS7 Interface Controller (S7IC) number is associated with either a bad board or an improperly seated board.

6.234.3 Variables

The following variables are used in this assert:

a The numerical identifier of the board.

6.234.4 Action to be taken

To correct this problem, perform the following steps:

1

Verify that the board specified in the assert is correct and that the board is properly inserted/seated.

2

Determine the following:

If the board...	then...
is properly seated	the board itself may be faulty. Replace the board with a board known to be functioning properly.
is properly seated and is known to be functioning properly yet the assert continues to occur	seek the next level of technical support.

END OF STEPS

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6.235 23506

6.235.1 Format

Unexpected trigger for Marginal Performance Reports

6.235.2 Explanation

The marginal performance reports software was activated even though there was no request for either scheduled or on-demand reports. This is an unexpected redundant software event caused by a software error.

6.235.3 Action to be taken

Seek the next level of technical support.

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6.236 23507

6.236.1 Format

Did not receive Measurements data from S7IC for SLK=*a*-*b*

6.236.2 Explanation

The SS7 Interface Controller (S7IC) did not respond to the request for the Message Transfer Point (MTP) level 2 measurements from the SS7 Service Circuit Handler (S7SCH).

6.236.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

6.236.4 Action to be taken

To correct this problem, perform the following steps:

1

Verify that the S7IC that services this link is properly seated and functioning. Enter the following input message to verify that the board is good:

DGN:SS7BRD=*a*

The pertinent input message variable is:

`a` The SS7IC board number.

2

Determine the following:

If the output from Step 1 indicates that the board is...	then...
properly functioning and is seated properly	seek the next level of technical support.
not functioning properly	replace the board with a board that is known to be functioning properly. Enter the following input message to restore the board to service: **RST:SS7BRD=*a*** The pertinent input message variable is: `a` - The SS7IC board number.

END OF STEPS

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6.237 23508

6.237.1 Format

Could not send measurements data for some of the links to MEAS process

6.237.2 Explanation

The SS7 Service Circuit Handler (S7SCH) could not send complete data for S7_LINK_MEAS table to the measurements (MEAS) process because of a resource problem. This results in an incomplete link measurement report during the next scheduled interval.

6.237.3 Action to be taken

Seek the next level of technical support.

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6.238 23509

6.238.1 Format

Request for collecting S7IC measurements for unknown report type

6.238.2 Explanation

The SS7 Service Circuit Handler (S7SCH) requested measurements data for either marginal performance reports or normal scheduled measurements from the SS7 Interface Controller (S7IC). This assert occurs if the measurement type requested is not known to the S7IC.

6.238.3 Action to be taken

Seek the next level of technical support.

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6.239 23510

6.239.1 Format

Request for invalid measurements type received from DUMP:MEAS CEP

6.239.2 Explanation

While the DUMP:MEAS input message was being executed, the SS7 Service Circuit Handler (S7SCH) was asked for measurements other than those known to the handler (that is, FEP, LINK, MTP, SCCP, and APPL). This is an internal software error.

6.239.3 Action to be taken

Seek the next level of technical support.

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6.240 23511

6.240.1 Format

MEAS process request for unknown measurement type

6.240.2 Explanation

The SS7 Service Circuit Handler (S7SCH) received a request from MEAS for a measurement that it does not recognize. This is an internal software error.

6.240.3 Action to be taken

Seek the next level of technical support.

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6.241 23512

6.241.1 Format

Invalid measurements type = *a*, encountered in S7SCH

6.241.2 Explanation

The SS7 Service Circuit Handler (S7SCH) is trying to process a message for a measurement type registered with its measurement class, but there are no member functions to continue the processing. This is an internal software error.

6.241.3 Variables

The following variables are used in this assert:

a The numerical identifier of the invalid measurements type.

6.241.4 Action to be taken

Seek the next level of technical support.

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6.242 23513

6.242.1 Format

Failed to register an S7SCH measurement table in measurement Class

6.242.2 Explanation

The SS7 Service Circuit Handler (S7SCH) could not register one of the measurements tables with its measurements class.

6.242.3 Action to be taken

Seek the next level of technical support.

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6.243 23514

6.243.1 Format

`Could not get MSGH QID for a process, rtn=b`

6.243.2 Explanation

The SS7 Service Circuit Handler (S7SCH) could not get a message QID for the SSCPROC subsystem. Because of this, the S7SCH does not send the exception report to Signaling Engineering & Administration System (SEAS).

6.243.3 Variables

The following variables are used in this assert:

a The name of the process that failed.

b The message that failed, for specific information on this message refer to the Output Messages document.

6.243.4 Action to be taken

To correct this problem, perform the following steps:

1

Determine the following:

If the error code indicates...	then...
a non-registered name	check to see if the initlist contains SSCPROC under */sn/init*. If SSCPROC does not exist, then it must be added, and the SCN must be started again.
anything other than a non-registered name	seek the next level of technical support.

END OF STEPS

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6.244 23515

6.244.1 Format

Invalid Overload level = *a* while outputting OM REPT ISA

6.244.2 Explanation

The valid values for overload level are the numbers 0 to 15. This assert is triggered when the function for outputting the `REPT ISA` message encountered an overload value other than these values.

6.244.3 Variables

The following variables are used in this assert:

`a` The invalid numerical overload level.

6.244.4 Action to be taken

Seek the next level of technical support.

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6.245 23516

6.245.1 Format

```
Null FROM GT received from sccp class while collecting special study meas
```

6.245.2 Explanation

The global title data for the special study has been corrupted.

6.245.3 Action to be taken

To correct this problem, perform the following steps:

1

Using the "SPECIAL STUDY MEASUREMENTS FOR GLOBAL TITLES FORM" under the SPA RELATED PLATFORM FORMS SUBMENU in the Recent Change and Verify (RC/V) system, delete all the data for global titles for the special study, then add the data again.

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.246 23517

6.246.1 Format

Received data from NPA range from sccp class while collecting special study meas

6.246.2 Explanation

A range of NPAs is not allowed for the special study. The SS7 Service Circuit Handler (S7SCH) encountered an invalid NPA.

6.246.3 Action to be taken

To correct this problem, perform the following steps:

1

Using the "SPECIAL STUDY MEASUREMENTS FOR GLOBAL TITLES FORM" under the SPA RELATED PLATFORM FORMS SUBMENU in the Recent Change and Verify (RC/V) system, delete all the data for global titles for the special study, then add the data again.

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.247 23518

6.247.1 Format

Could not send entire special study measurements data to MEAS process

6.247.2 Explanation

The SS7 Service Circuit Handler (S7SCH) could not send the MEAS process complete data for a special study measurement period because of a resource problem. Incomplete special study measurements data will appear in the next scheduled interval report.

6.247.3 Action to be taken

Seek the next level of technical support.

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6.248 23519

6.248.1 Format

Assign Start time equal to zero in SLK = *a-b*

6.248.2 Explanation

The measurement timer assigned to the SS7 link (SLK) is not running.

6.248.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the SS7 link.

6.248.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Service Circuit Handler (SS7SCH).

```
INIT:PROC=S7SCH,LEVEL=1
```

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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6.249 23521

6.249.1 Format

Bad or missing ss7 board = *a-b*

6.249.2 Explanation

The SS7 Interface Controller (S7IC) number Telecom Server is associated with either a bad board or an improperly seated board.

6.249.3 Variables

The following variables are used in this assert:

`a,b` The numerical identifiers of the board.

6.249.4 Action to be taken

To correct this problem, perform the following steps:

1

Verify that the board specified in the assert is properly inserted or seated.

2

Determine the following:

If the board...	then...
is properly seated	the board itself may be faulty. Replace the board with a board known to be functioning properly.
is properly seated and is known to be functioning properly yet the assert continues to occur	seek the next level of technical support.

End of steps

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6.250 23522

6.250.1 Format

Did not receive Measurements data from S7IC for SLK=*a*-*b*-*c*

6.250.2 Explanation

The SS7 Interface Controller (S7IC) did not respond to the request for the Message Transfer Point (MTP) level 2 measurements from the SS7 Service Circuit Handler (S7SCH).

6.250.3 Variables

The following variables are used in this assert:

a,b,c	The numerical identifiers of the SS7 link (SLK).

6.250.4 Action to be taken

To correct this problem, perform the following steps:

1

Verify that the S7IC that services this link is properly seated and functioning. Enter the following input message to verify that the board is good:

DGN:SS7BRD=*a*-*b*

The pertinent input message variables are:

a	SS7 Node ID.
b	The SS7IC board number.

2

Determine the following:

If the output from Step 1 indicates that the board is...	then...
properly functioning and is seated properly	seek the next level of technical support.
not functioning properly	replace the board with a board that is known to be functioning properly. Enter the following input message to restore the board to service: **RST:SS7BRD=*a*- *b*** The pertinent input message variables are: *a* - The SS7 Node ID. *b* - The SS7IC board number.

END OF STEPS

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6.251 23523

6.251.1 Format

Assign Start time equal to zero in SLK=*a*-*b*-*c*

6.251.2 Explanation

The measurement timer assigned to the SS7 link (SLK) is not running.

6.251.3 Variables

The following variables are used in this assert:

a,b,c The numerical identifiers of the SS7 link (SLK).

6.251.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the following input message to perform a level 1 initialization on the SS7 Telecom Server Service Circuit Handler (S7TSSCH).

INIT:PROC=S7TSSCH,LEVEL=1,MACHINE=TS*a*

The pertinent input message variable is:

a The SS7 Node ID.

2

If this assert continues to occur, then seek the next level of technical support.

End of steps

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6.252 23524

6.252.1 Format

```
DB send failed
```

6.252.2 Explanation

This assert is generated when S7SCH fails to send DB message. It indicates a failure of a database update.

6.252.3 Action to be taken

To correct this problem, perform the following steps:

1

Enter the associated input message again.

2

If this assert continues to occur, then seek the next level of technical support.

End of steps

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6.253 23525

6.253.1 Format

Failed to open file *a*, will create with values: inc=*b* out=*c*

6.253.2 Explanation

The indicated configuration file could not be opened. This file may be missing or unreadable.

6.253.3 Variables

The following variables are used in this assert:

a The name of the configuration file that could not be opened.

b The default number of incoming transaction identifiers (TIDs) that will be specified in the new configuration file created by the system.

c The default number of outgoing transaction identifiers (TIDs) that will be specified in the new configuration file created by the system.

6.253.4 Action to be taken

No action is required. A new configuration file will automatically be created by the system with the default number of incoming and outgoing TIDs indicated in this assert.

To change the number of TIDs in a configuration file, simply edit the TID value(s) and save the configuration file. A reboot of the system may be required in order for these changes to take effect.

Refer to the configuration file for information on what constitutes a valid incoming and outgoing TID value.

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6.254 23526

6.254.1 Format

File *a* has invalid values, will update with values: inc=*b* out=*c*

6.254.2 Explanation

The indicated configuration file contains invalid transaction identifier (TID) information. The incoming TID value, outgoing TID value, or both may be incorrect or missing. See the configuration file for specifications of what constitutes valid incoming and outgoing TID values.

6.254.3 Variables

The following variables are used in this assert:

a The name of the configuration file that contains invalid TID values.

b The default number of incoming transaction identifiers (TIDs) that will be specified in the new configuration file created by the system.

c The default number of outgoing transaction identifiers (TIDs) that will be specified in the new configuration file created by the system.

6.254.4 Action to be taken

No action is required. A new configuration file will automatically be created by the system with the default number of incoming and outgoing TIDs indicated in this assert.

To change the number of TIDs in a configuration file, simply edit the TID value(s) and save the configuration file. A reboot of the system may be required in order for these changes to take effect.

Refer to the configuration file for information on what constitutes a valid incoming and outgoing TID value.

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6.255 23900

6.255.1 Format

Received invalid size of message *a*, the size should be *b*

6.255.2 Explanation

The Control Execution Program (CEP) received an invalid message size from the Message Handler (MSGH).

6.255.3 Variables

The following variables are used in this assert:

a The actual size of the message.

b The expected size of the message.

6.255.4 Action to be taken

To correct this problem, perform the following steps:

1

Enter the associated input message again.

2

If this assert continues to occur, then seek the next level of technical support.

END OF STEPS

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Alarm output messages

6.256 Overview

6.256.1 Purpose

This chapter provides detailed information on alarmed output messages (OMs).

6.256.2 Description of alarm interfaces

The platform alarm information can be gathered in the following ways :

- TCP/IP connection to port 5218.
- Through SNMP.
- Through logging in and monitoring the *scclog* files.

Information on the TCP/IP connections is found in the *MCAS R3.1 System Administration, 270-700-167* under "Activating Remote Maintenance".

Information on SNMP is found in the *MCAS R3.1 System Administration, 270-700-167* under "Activating Remote Maintenance" under "SNMP Alarm Table Interface Overview" section.

Lastly, monitoring logfiles is to be done by logging on to the system and running **`/cs/sn/bin/tailer scclog`**

The *scclog* logs contain the same information as listening to port 5218.

6.256.3 General alarmed specification

When engineering a system to monitor the AMS output stream the following numbers may be used:

- Max alarms output is 2K Bytes /sec.
- Average is less then 1K Bytes/sec.

6.256.4 Platform alarmed output messages

Alarm output messages can have the following values :

- Critical
- Major
- Minor
- Transient
- Clear

The following definitions are used for each alarm type.

- CRITICAL, Severe platform and/or SPA service affecting condition, resulting in loss of all call processing, that requires IMMEDIATE corrective action. Immediate analysis and immediate repair will be reserved for critical alarm conditions no matter time of day or day of week. Use when condition results in loss of all Call Processing in SPA or platform.

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- MAJOR, Serious platform and/or SPA service affecting condition that requires corrective action as soon as possible. Major alarms typically will be analyzed immediately by maintenance technician but the corrective action scheduled in the short-term future. Whereas a critical alarm is used for loss of all call processing, the major alarm is used for a condition that restricts call processing.
- MINOR, Troubles that do not have a serious effect on services typically related to units/circuits not essential for call processing. Minor alarms typically involve scheduled analysis and scheduled corrective action. In most situations, they will not receive immediate attention. Corrective action can be delayed/scheduled without further degradation in service.

A Transient alarm can have 3 values - critical, major, and minor. The difference between a transient and non-transient alarm is that the transient alarm does not have an associated clear alarm. A transient alarm could be an alarm where alarm condition is temporary.

A non-Transient alarm will have an associated clear alarm and the alarm period is active until the clear received.

Both Transient and non-Transient alarm types activate the LMT/RMT indicators. The indicators will stay lit until the F4 key is entered on the LMT/RMT.

Each alarmed OM has a unique alarm code. The Unique Alarm Code is a six character alphanumeric alarm code that is provided for both platform and application alarms that are transmitted via SNMP to the OMC-H. For more information, see the section *Unique Alarm Code section* in the *MCAS R3.1 System Administration*.

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6.257 RCVRY RTEUAV

Application
S7SCH

Message class
NMS7

6.257.1 Reason for output

Indicates that an SS7 all routes unavailable condition, as previously reported, has ended.

6.257.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS010	941010	No	None
2	/SS024	941024	No	None

6.257.3 Format

`RCVRY-RTEUAV:::::: DPC=` *a* `,FARCLLI=` *b* `,DTIME=` *c*

6.257.4 Parameters

a the destination pointcode.

ANSI format = *nnncccmmm* (*n*=Network ID, *c*=Cluster ID, *m*=Member ID)

ITU format = *xxxxx* (0-16383)

CHN format = *mmmssppp* (*m*=Main Area ID, *s*=Sub-Area ID, *p*=Point ID)

b the common language location identifier: *xxxxyyzzwww*

xxxx = city, town, or locality code.

yy= state or province code.

zz= building code.

www= traffic unit identifier code.

c the detection time: *hh - mm - ss - ttt*

hh = hours

mm = minutes

ss = seconds

ttt = time zone code

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6.257.5 Action to be taken

None. This message is for information only.

6.257.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

None.

6.257.7 X733 Information

OK key: /SS003, /SS022

AlarmType: communicationAlarm

Probable Cause: communicationsProtocolError

Object Name: SS7FarEndPointCode#

Specific problem: SS7FarEndPointCode# RTEUAV

Additional text: REPT-RTEUAV, SS7FarEnd=INACCESSIBLE

6.257.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SS010,

/SS024

6.257.9 Examples:

Alarmed

```
*C REPT-RTEUAV::::::DPC=961,FARCLLI=LSLEILWETT3,DTIME=12-17-05-CST
::communicationAlarm::communicationsProtocolError::
SS7FarEndPointCode#961
::SS7FarEndPointCode#961 RTEUAV::REPT-RTEUAV, SS7FarEnd=INACCESSIBLE::
```

Cleared

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```
RCVRY-RTEUAV::::::DPC=961,FARCLLI=LSLEILWETT3,DTIME=12-34-33-CST
::communicationAlarm::communicationsProtocolError::
SS7FarEndPointCode#961
:: SS7FarEndPointCode#961 RTEUAV::RCVRY-RTEUAV, SS7FarEnd=ACCESSIBLE::
```

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6.258 RCVRY STP-PRO

Application
S7SCH

Message class
MAINT

6.258.1 Reason for output

Indicates that the Service Control Point (SCP) no longer receives processor outage messages on all the links from the Signal Transfer Point (STP).

6.258.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7047	929047	No	None
2	/S7100	929100	No	CL

6.258.3 Format

```
RCVRY STP-PRO STP= a FARCLLI= b
```

6.258.4 Parameters

a the pointcode of the STP.

ANSI format = *nnncccmmm* (*n*=Network ID, *c*=Cluster ID, *m*=Member ID)

b the common language location identifier of the STP: *xxxxyyzzwww*

xxxx = city, town, or locality code.

yy = state or province code.

zz = building code.

www = traffic unit identifier code.

6.258.5 Action to be taken

None. This message is for information only.

6.258.6 Additional information and references

The following are additional information sources regarding this command.

Input messages:

None.

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Output messages

None.

6.258.7 X733 Information

OM key: /S7046, /S7099

AlarmType: communicationAlarm

Probable Cause: communicationsProtocolError

Object Name: STP#, FARCLLI=

Specific problem: STP562 Processor Outage

Additional text: STP=PROCESSOR OUTAGE

6.258.8 Clear OM key:

The following are the Clear OM key(s) for this command:

/S7047,

/S7100

6.258.9 Example

Alarmed

```
*C REPT STP-PRO STP=581 FARCLLI=NPVLILASTT1
::communicationAlarm::communicationsProtocolError:: STP#581,
FARCLLI=NPVLILASTT1::STP# Processor Outage::STP=PROCESSOR OUTAGE::
```

Cleared

```
RCVRY STP-PRO  STP=581 FARCLLI=NPVLILASTT1
::communicationAlarm::communicationsProtocolError:: STP#581,
FARCLLI= NPVLILASTT1::STP# Processor Outage::STP=PROCESSOR
OUTAGE CLEARED::
```

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6.259 RCVRY LKOTG

Application

S7SCH

6.259.1 Reason for output

The following describes the reason for output when executing this command:

1. Indicates that the SAAL SS7 link has transition, for any reason, from the available state to the unavailable state as preceived by MTP level 3.

6.259.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS026	941026	No	CL

6.259.3 Format

The following formats are listed for this command:

1. `REPT-LKOTG::::::LINK=` *a* `,AC=` *b* `,DTIME=` *c*

6.259.4 Parameters

`a ( link ID )` The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

`b ( link Availability cause )` `INS` = Successful reestablishment of the SAAL connection

`LFU`= Local force unihibit

`LMU`= Local management uninhibit

`LRU`= Local routing control uninhibit

`RFU`= Remote force uninhibit

`RMU`= Remote management uninhibit

`c ( Date and Time )` the detection time: *hh - mm - ss - ttt*

hh = hours

mm= minutes

ss = seconds

ttt = time zone code

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6.259.5 Action to be taken

The following corrective actions are listed:

1. Discover the cause for the link outage and remedy if possible. The link might be restored to in-service automatically.

6.259.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.259.7 X733 Information:

OM key: /SS026

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SS7 Link

Specific problems: REPT-LKOTG

Additional text: RCVRY-LKOTG

6.259.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SS026

6.259.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
** REPT-LKOTG::::::LINK=A0000001-00,LOC=XER,DTIME=14-55-13-UTC
::communicationAlarm::communicationsProtocolError::as001#SS7
Link#1::SS7 Link#1 LKOTG:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=0,
LFC=XER, REPT-LKOTG;941025;PLATFORM::
```

Cleared

```
CL RCVRY-LKOTG::::::LINK=A0000001-00,AC=INS,DTIME=14-58-19-UTC
::communicationAlarm::communicationsProtocolError::as001#SS7
Link#1::SS7 Link#1 LKOTG:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=0,
RCVRY-LKOTG;941026;PLATFORM::
```


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6.260 RCVRY MASTERHB

6.260.1 Reason for output

Indicates the heartbeat with the SS7 master node has been recovered.

6.260.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7242	929242	No	None

6.260.3 Format

```
RCVRY MASTERHB  MASTER=a  Node ID=b  HostName=c  Host Machine Name=b
```

6.260.4 Parameters

a S7SCH or STSCH.

b Node ID of the unavailable Master.

c Host Name of the unavailable Master.

d Host Machine Name of the unavailable Master.

6.260.5 Action to be taken

This message is for information only.

6.260.6 Additional information and references

The following are additional information sources regarding this command.

Input messages

None.

Output messages

```
REPT MASTERHB
```

6.260.7 X733 Information

OK key: /S7242

AlarmType: communicationAlarm

Probable Cause: communicationsSubsystemFailure

Object Name: S7SCH

Specific problem: MASTERHB OOS

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Additional text: None

6.260.8 Clear OM key

The following are the Clear OM key(s) for this command:

/S7242

6.260.9 Examples:

Alarmed

```
* REPT MASTERHB-FAILED  MASTER=as1  TRYING TO RECOVER
::communicationAlarm::communicationsSubsystemFailure::
S7SCH::MASTERHB::OOS::
```

Cleared

```
RCVRY MASTERHB  MASTER=as1  Node ID=1  HostName=as1  Host Machine
Name=as1
::communicationAlarm::communicationsSubsystemFailure::
S7SCH::MASTERHB::IS::
```


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6.261 RCVRY LKF

Application
S7SCH

Message class
NMS7

6.261.1 Reason for output

Indicates that the stated SS7 link that previously failed has been restored. This message occurs only if the restored link remains up for at least one minute.

6.261.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS011	941011	No	CL

6.261.3 Format

`RCVRY LKF LINK=` *a* `,DTIME=` *b*

6.261.4 Parameters

a The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

b the detection time: *hh - mm - ss - ttt*

hh = hours

mm = minutes

ss = seconds

ttt = time zone code

6.261.5 Action to be taken

None. This message is for information only.

6.261.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

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Output Messages:

None.

6.261.7 X733 Information:

OM key: /SS011

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SS7 Link

Specific problems: REPT-LKF

Additional text: RCVRY-LKF

6.261.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SS011

6.261.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
** REPT-LKF::::::LINK=A0000001-00,LFC=XER,DTIME=14-31-17-UTC
::communicationAlarm::communicationsProtocolError::as001#SS7 Link#1::SS7

Link#1 LKF:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=0, REPT-LKF;941004;
PLATFORM::
```

Cleared

```
CL RCVRY-LKF::::::LINK=A0000001-00,DTIME=14-32-38-UTC
::communicationAlarm::communicationsProtocolError::as001#SS7
Link#1::SS7 Link#1 LKF:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=0,
RCVRY-LKF;941011;PLATFORM::
```


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6.262 REPT ASSOC-INACTIVE

Application
STSCH

Message class
MAINT

6.262.1 Reason for output

The following describes the reason for output when executing this command.

1. Reports that both the primary path and the secondary path for the association have become inactive and the association is now down. This message generates a MAJOR alarm.

6.262.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SG004	935004	Yes	MJ

6.262.3 Format

The following formats are listed for this command.

1. `REPT-ASSOC-INACTIVE::::::ASSOC=` *a* `,DTIME=` *b*

   `LOCAL  IP ADDRESS 1 =` *b*

   `LOCAL  IP ADDRESS 2 =` *c*

   `LOCAL  SCTP PORT =` *d*

   `REMOTE IP ADDRESS 1 =` *e*

   `REMOTE IP ADDRESS 2 =` *f*

   `REMOTE SCTP PORT =` *g*

6.262.4 Parameters

a the association number

b the time when the association became inactive

c the first IP address at the platform

d the second IP address at the platform

e SCTP port at the platform

f the first IP address at the far end

g the second IP address at the far end

h the SCTP port at the far end

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6.262.5 Action to be taken

The following corrective actions are listed for this command.

1. Ensure that the SCTP card, telecom server, or Ethernet connection has not failed. Also, check for problems with the IP network. Once the failure is corrected, the network element will automatically recover the association.

6.262.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.262.7 X733 Information:

AlarmType: communicationAlarm

Probable cause: outOfService

Object name: STSCH

Specific problems: ASSOC INACTIVE

Additional text: ASSOC DOWN

6.262.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SG006

6.262.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
   +++ AT042S01C01 2009-05-13 23:14:26 MAINT /SG004 #000582 as001 LEAD >

** REPT-ASSOC-INACTIVE::::::ASSOC=    1,DTIME=23-14-26-CDT
   LOCAL  IP ADDRESS 1 = 135.1.60.241
   LOCAL  IP ADDRESS 2 = 10.241.42.65
   LOCAL  SCTP PORT = 9001
   REMOTE IP ADDRESS 1 = 135.2.122.164
   REMOTE IP ADDRESS 2 = 127.0.0.1
   REMOTE SCTP PORT = 3565
::communicationAlarm::outOfService::STSCH::ASSOC INACTIVE, ASSOC =
1::ASSOC DOWN;935004::
   END OF REPORT #000582++-
```

Cleared

```
   +++ AT042S01C01 2009-05-13 23:14:26 MAINT /SG004 #000582 as001 LEAD >

   +++ AT042S01C01 2009-05-13 23:14:33 MAINT /SG006 #000587 as001 LEAD >

CL REPT-ASSOC-ACTIVE::::::ASSOC=    1
::communicationAlarm::outOfService::STSCH::ASSOC INACTIVE, ASSOC =
1::ASSOC ACTIVE;935006::
   END OF REPORT #000587++-
```

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6.263 REPT ASSOCPATH-INACTIVE

Application
STSCH

Message class
MAINT

6.263.1 Reason for output

The following describes the reason for output when executing this command.

1. Reports that the number of active paths for an association is one (e.g., when either the primary or secondary path for the association becomes inactive). This message generates a MINOR alarm.

6.263.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SG005	935005	Yes	MN

6.263.3 Format

The following formats are listed for this command.

1. REPT-ASSOCPATH-INACTIVE ASSOC= `a` PATH = `b` FAILED TO RECOVER

6.263.4 Parameters

`a` the association number

`PATH` indication of whether the primary or secondary path for the association is inactive.

`b` the path (PRIMARY or SECONDARY) of the association specified that has become inactive and failed to recover.

6.263.5 Action to be taken

The following corrective actions are listed for this command.

1. Ensure that the SCTP card or Ethernet connection has not failed. Also, check for problems with the IP network. Once the failure is corrected, the network element will automatically recover the path for the association..

6.263.6 Additional information and references

The following are additional information sources regarding this command.

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Input Messages:

None.

Output Messages:

None.

6.263.7 X733 Information:

AlarmType: communicationAlarm

Probable cause: outOfService

Object name: STSCH

Specific problems: ASSOC PATH FAILED TO RECOVER

Additional text: ASSOC PATH RECOVERY FAILURE

6.263.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SG006

6.263.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
   +++ AT042S01C01 2009-05-13 23:14:26 MAINT /SG005 #000584 as001 LEAD >

*  REPT-ASSOCPATH-INACTIVE::::::ASSOC=    1,PATH=PRIMARY,FAILED TO
RECOVER
::communicationAlarm::outOfService::STSCH::ASSOC PATH FAILED TO RECOVER,
ASSOC = 1, PATH = PRIMARY::ASSOC PATH RECOVERY FAILURE;935005::
   END OF REPORT #000584++-
```

Cleared

```
   +++ AT042S01C01 2009-05-13 23:14:33 MAINT /SG007 #000586 as001 LEAD >

CL REPT-ASSOCPATH-ACTIVE::::::ASSOC=    1
   LOCAL  IP = 135.1.60.241 LOCAL PORT = 9001
   REMOTE IP = 135.2.122.164 REMOTE PORT = 3565
::communicationAlarm::outOfService::STSCH::ASSOC PATH FAILED TO RECOVER,
ASSOC = 1, PATH = PRIMARY::ASSOC PATH RECOVERED;935007::
   END OF REPORT #000586++-
```

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6.263.10 Clear OM key

None.

6.263.11 Examples

Alarmed

```
   +++ N440SA17 2006-01-13 02:15:33 MAINT /SG005 #000124 as17 LEAD >
TN REPT-ASSOCPATH-INACTIVE::::::ASSOC=1-1,PATH=PRIMARY,FAILED TO RECOVER

::communicationAlarm::outOfService::STSCH::ASSOCIATION INACTIVE FAILED
TO RECOVER::::
   END OF REPORT #000124++-
```


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6.264 REPT ASSOC-ACTIVE

Application
S7

Message class
MAINT

6.264.1 Reason for output

The following describes the reason for output when executing this command:

1. Reports that the association specified has become active and its previous alarm has now been cleared.

6.264.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SG006	935006	NO	CL

6.264.3 Format

The following formats are listed for this command:

1. REPT-ASSOC-ACTIVE::::::ASSOC = a

6.264.4 Parameters

a the association number

6.264.5 Action to be taken

None

6.264.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

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6.264.7 X733 Information

Alarm OM key: 935005

AlarmType: communicationAlarm

Probable cause: outOfService

Object name: STSCH

Specific problems: ASSOC PATH FAILED TO RECOVER

Additional text: ASSOC PATH RECOVERY FAILURE

6.264.8 Clear OM key

935005

6.264.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

Example 1

```
    +++ T5440DA02 2011-07-26 17:45:23 MAINT /SG006 #000884 as00 LEAD >
CL REPT-ASSOC-ACTIVE::::::ASSOC=** text **
::communicationAlarm::outOfService::STSCH::ASSOC INACTIVE::ASSOC
ACTIVE;935006::
   END OF REPORT #000884++-
```


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6.265 REPT ASSOCPATH-ACTIVE

Application
S7

Message class
MAINT

6.265.1 Reason for output

The following describes the reason for output when executing this command:

1. Reports that the stated association path for the association specified has become active and its previous alarm has now been cleared.

6.265.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SG007	935007	NO	CL

6.265.3 Format

The following formats are listed for this command:

1. `REPT-ASSOCPATH-ACTIVE::::::ASSOC=` *a*
   `LOCAL IP =` *b* `LOCAL PORT =` *c*
   `REMOTE IP =` *d* `REMOTE PORT =` *e*

6.265.4 Parameters

a the association number

b the local IP address

c the Local SCTP port

d the remote IP address

e the remote SCTP port

6.265.5 Action to be taken

The following corrective actions are listed for this command:

None

6.265.6 Additional information and references

The following are additional information sources regarding this command.

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Input Messages:

None.

Output Messages:

None.

6.265.7 X733 Information

Alarm OM key: 935005

AlarmType: communicationAlarm

Probable cause: outOfService

Object name: STSCH

Specific problems: ASSOC PATH FAILED TO RECOVER

Additional text: ASSOC PATH RECOVERY FAILURE

6.265.8 Clear OM key

935005

6.265.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

Example 1

```
    ++ T5440DA02 2011-07-26 17:44:49 MAINT /SG007 #000880 as00 LEAD >
CL REPT-ASSOCPATH-ACTIVE::::::ASSOC=** text **
   LOCAL  IP = ** text ** LOCAL PORT = 999
   REMOTE IP = ** text ** REMOTE PORT = 999
::communicationAlarm::outOfService::STSCH::ASSOC PATH FAILED TO
RECOVER::ASSOC PATH RECOVERED
;935007::
   END OF REPORT #000880++-
```


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6.266 REPT INIT

Application
INIT

Message class
MAINT

6.266.1 Reason for output

The following describes the reasons for this output:

1. The named process built with an old or incorrect version of the platform libraries.
2. The maximum configured number of node boots has been exceeded, only platform restarts will be performed.
3. All nodes in the cluster will be reinitialized.
4. The node is being restarted because of an error.
5. Status check of the process did not respond in the expected time (half of sanity_timer value)
6. Reports that there is a new core file. The core file may be from a permanent process or from a process created by a permanent process.
7. Reports that the INIT process has been started by improper method. To perform properly, the INIT process must be started from /etc/inittab by UNIX /etc/init. It cannot be started from shell command line or a shell script.
8. Request for the platform to shutdown.
9. Software checks are inhibited. This can impair system recovery.
10. INIT received SIGTERM from an unexpected process.
11. INIT received unexpected SIGTERM without sender information.
12. Platform install script terminated abnormally.
13. Platform install script did not complete in the expected time.
14. Platform install script failed with the following error code.
15. Platform install script never completed after being called an expected number of times.
16. Report that the start or stop script terminated abnormally.
17. Report that the start or stop script timed out and did not complete in the expected time.
18. Both nodes in the VHOST pair are claiming to be the Active VHOST, rebooting to resolve.
19. Both nodes in the VHOST pair are claiming to be the Active VHOST, resetting to resolve.
20. No Standby VHOST node to failover to, escalating to reboot to resolve.
21. Failover occurred before the new machine was ready.
22. Starting the failover of global queues.
23. Reports that the INIT process has exited or core dumped without reporting a specific reason. This is usually an error condition; however it can also occur following normal process terminations.

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24. Reports that initialization of the process has been requested because of a failure scenario. Initiated by the process itself.
25. The shutdown script did not finish within the allotted time.
26. Standby VHOST is reporting that Active VHOST failed heartbeat, resetting Active VHOST.

6.266.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	NA	917204	No	MJ, CR
2	NA	917235	No	CR
3	NA	917205	No	CR
4	NA	917206	No	CR
5	NA	917213	No	MJ
6	NA	NA	No	MJ
7	NA	NA	No	CR
8	NA	917240	No	MJ, CR
9	NA	917202	Yes	MJ
10	NA	917209	No	MJ
11	NA	917210	No	MN
12	NA	NA	No	MJ
13	NA	NA	No	MJ
14	NA	NA	No	MJ
15	NA	NA	No	MJ
16	NA	NA	No	MJ
17	NA	NA	No	MJ
18	NA	NA	No	MJ
19	NA	NA	No	MJ
20	NA	917211	No	CR
21	NA	917211	No	CR
22	NA	917212	No	CR
23	NA	917201	No	MJ, CR
24	NA	917201	No	MJ, CR

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Format	OM key	Alarm ID	Repeat	Alarm level
25	NA	917207	No	MN
26	NA	NA	Yes	MJ

6.266.3 Format

The following formats are listed for this output message:

1. `REPT INIT c REQUESTED c INIT DUE TO INCOMPATIBLE OR CORRUPTED INIT SHARED MEMORY`
2. `REPT INIT MAXIMUM BOOT THRESHOLD q EXCEEDED`
3. `REPT INIT REQUESTING INITIALIZATION OF ALL NODES ERROR b`
4. `REPT INIT REQUESTING RESTART ERROR CODE b`
5. `REPT INIT TIMED OUT EXECUTING THIRD PARTY CHECK c`
6. `REPT INIT - CORE FILE c DETECTED FOR PROCESS c CORE FILE CREATED AT g`
7. `REPT INIT /sn/init/init UID NOT ROOT, INIT EXITING`
8. `REPT INIT EXECUTING A SYSTEM SHUT DOWN`
9. `REPT INIT SYSTEM SOFTWARE CHECKS INHIBITED`
10. `REPT INIT SIGTERM RECEIVED FROM PID k - IGNORED`
11. `REPT INIT SIGTERM RECEIVED NO SENDER INFO - IGNORED`
12. `REPT INIT INSTALL SCRIPT TERMINATED ABNORMALLY`
13. `REPT INIT INSTALL SCRIPT TIMED OUT`
14. `REPT INIT INSTALL SCRIPT FAILED ret b`
15. `REPT INIT INSTALL SCRIPT EXECUTED TOO MANY TIMES`
16. `REPT INIT SCRIPT r TERMINATED ABNORMALLY`
17. `REPT INIT SCRIPT r TIMED OUT`
18. `REPT INIT ACTIVE VHOST CONFLICT, REBOOTING`
19. `REPT INIT ACTIVE VHOST CONFLICT, RESETTING j`
20. `REPT INIT ESCALATING TO REBOOT, NO STANDBY PRESENT`
21. `REPT INIT ESCALATING TO LEVEL 5 NO ACTIVE PRESENT`
22. `REPT INIT STARTING TRANSITIONING GLOBAL QUEUES`
23. `REPT INIT DETECTED b DIED`
24. `REPT INIT REQUESTED a INIT OF c DUE TO d`
25. `REPT INIT SHUTDOWN SCRIPT TIMED OUT`
26. `REPT INIT ACTIVE VHOST j FAILED HEARTBEAT, RESETTING`

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6.266.4 Parameters

a the level of initialization [SN_LVL0 - SN_LVL4]

b the error code

c the process name or image

d the reason

e the number of minutes

f a progress mark

g the directory path

h the monitoring mode of a cluster

i the message name

j the node that was specified

k the process ID

l the name of the cluster that was specified

m the node state
The state will be one of the following:
- Standby (S)
- Unavailable (U)
- Offline (O)
- Init (I)

n the number of times the node has been reset

o the signal number

p the process initialization step

q the value of max_boots in initlist

r File name

6.266.5 Action to be taken

Corrective actions are listed below.

1. Get the correct process image.
2. Contact next level of technical support
3. Contact next level of technical support
4. Contact next level of technical support
5. Contact next level of technical support
6. Contact next level of technical support
7. Determine why process died and created a core file. Seek the next level of technical assistance if needed.

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8. For information only. No action necessary.
9. For information only. No action necessary.
10. For information only. No action necessary.
11. For information only. No action necessary.
12. Contact next level of technical support.
13. Contact next level of technical support.
14. Contact next level of technical support.
15. Contact next level of technical support.
16. Contact next level of technical support.
17. Contact next level of technical support.
18. For information only. No action necessary.
19. For information only. No action necessary.
20. For information only. No action necessary.
21. For information only. No action necessary.
22. For information only. No action necessary.
23. Contact next level of technical support.
24. Contact next level of technical support.
25. For information only. No action necessary.
26. Contact next level of technical support.

6.266.6 Additional information and references

The following are additional information sources regarding this output message.

Input messages

None.

Output messages

None.

Documents

6.266.7 X733 Information:

AlarmType: qualityOfServiceAlarm

Probable cause: softwareProgramAbnormallyTerminated

Object name: Name of process

Specific problems: none

Additional text: none

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6.266.8 Clear OM key

None

6.266.9 Examples

Alarmed

```
   +++ EAS1NC1 2005-07-16 07:14:49 MAINT
#000048 as001 LEAD >** REPT INIT REQUESTED SN_LV0 INIT OF SLAPD DUE TO
SANITY TIMER EXPIRED
::qualityOfServiceAlarm::softwareProgramAbonormallyTerminated::
SLAPD::::::
   END OF REPORT #000048++-
```

Cleared

```
   +++ EAS1NC1 2005-07-16 07:15:02 MAINT
#000051 as001 LEAD >CL REPT INIT SLAPD PROGRESS 0 INITIALIZATION
COMPLETE
::qualityOfServiceAlarm::softwareProgramAbonormallyTerminated::
SLAPD::::::
   END OF REPORT #000051++-
```

6.266.10 X733 Information:

AlarmType: unspecifiedReason

Probable cause: qualityOfServiceAlarm

Object name: SYSTEM SOFTCHK

Specific problems: none

Additional text: none

6.266.11 Clear OM key

same

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6.266.12 Examples

Alarmed

```
   +++ N440SA07 2006-01-28 00:06:55 MAINT
#000188 as00 LEAD >** REPT INIT SYSTEM SOFTWARE CHECKS INHIBITED
::qualityOfServiceAlarm::unspecifiedReason::SYSTEM SOFTCHK::::::
   END OF REPORT #000188++-
```

Cleared

```
   +++ N440SA07 2006-01-28 00:06:55 MAINT
#000188 as00 LEAD >CL REPT INIT SYSTEM SOFTWARE CHECKS INHIBITED
::qualityOfServiceAlarm::unspecifiedReason::SYSTEM SOFTCHK::::::
   END OF REPORT #000188++-
```

6.266.13 X733 Information:

AlarmType: qualityOfServiceAlarm

Probable cause: softwareProgramAbnormallyTerminated

Object name: Name of Process

Specific problems: none

Additional text: none

6.266.14 Clear OM key

None.

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6.266.15 Examples

Alarmed

```
   +++ N440SA07 2006-01-29 11:18:01 MAINT
#000002 as00 LEAD >** REPT INIT DETECTED CSOP DIED
::qualityOfServiceAlarm::softwareProgramAbnormallyTerminated::
CSOP::::::
   END OF REPORT #000002++-
```

Cleared

```
   +++ N440SA07 2006-01-29 11:18:22 MAINT
#000007 as00 LEAD >CL REPT INIT CSOP PROGRESS 0 INIT COMPLETE
::qualityOfServiceAlarm::softwareProgramAbnormallyTerminated::
CSOP::::::
   END OF REPORT #000007++-
```

6.266.16 Other Non X733 Examples

Example report One

```
   +++ N440SA07 2006-01-26 13:03:44 MAINT      #999999 as00 LEAD >
*C REPT INIT REQUESTING RESTART ERROR CODE -22053
   END OF REPORT #999999++-
```

Example report Two

```
   +++ N440SA07 2006-01-26 14:26:11 MAINT #999999 as00 LEAD >
** REPT INIT SIGTERM RECEIVED FROM PID 10993 - IGNORED
   END OF REPORT #999999++-
```

Example report Three

```
   +++ N440SA07 2006-01-26 22:42:23 MAINT        #999999 as00 LEAD >
** REPT INIT - CORE FILE /sn/core/alsom/core DETECTED FOR PROCESS
   CORE FILE CREATED AT Thu Jan 26 22:42:23 2006
   END OF REPORT #999999++-
```


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6.266.17 X733 Information:

AlarmType: Processing error

Probable cause: Application subsystem failure

Object name: INIT escalation

Specific problems: The threshold for maximum number of boots has been exceeded

Additional text: none

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6.267 REPT INIT ERROR

Application
INIT

Message class
MAINT

6.267.1 Reason for output

The following describes the reasons for output when executing this command.

1. Could not find the size of the swap device.
2. Failed to find the specified executable file at the specified location.
3. The specified executable file has an invalid size or permissions.
4. Failed to open the specified executable file for execution.
5. Failed to open a new version of the specified executable file for execution.
6. Failed to read the specified executable file.
7. Failed to write a new version of the specified executable file.
8. Failed to copy a new version of the specified executable file.
9. The specified process change of owner ID failed. no
10. The specified process change of executable permissions failed.
11. During a state transition from the offline state, the offline file in /sn/init could not be deleted.
12. During a state transition to the offline state, the offline file in /sn/init could not be created.
13. INIT failed to set sanity interval for the alarm board.
14. The /sn/core directory is full. This can prevent new process creation.
15. The number of processes exceeds the maximum, which results in some processes not being created.

6.267.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	NA	917218	No	TJ
2	NA	917223	No	TJ
3	NA	917229	No	TJ
4	NA	917225	No	TJ
5	NA	917226	No	TJ
6	NA	917227	No	MJ

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Format	OM key	Alarm ID	Repeat	Alarm level
7	NA	917228	No	MJ
8	NA	917224	No	MJ
9	NA	917221	No	MJ
10	NA	917222	No	MJ
11	NA	917214	No	MN
12	NA	917215	No	MN
13	NA	917230	No	MJ
14	NA	917217	No	MJ
15	NA	917232	No	MJ

6.267.3 Format

The following formats are listed for this command.

1. `REPT INIT ERROR FAILED TO GET SWAP SIZE ERRNO d`
2. `REPT INIT ERROR FAILED TO FIND l`
3. `REPT INIT ERROR INVALID SIZE OR PERMISSIONS OF l`
4. `REPT INIT ERROR FAILED TO OPEN OFFICIAL FILE l ERRNO d`
5. `REPT INIT ERROR FAILED TO OPEN PROCESS FILE l ERRNO d`
6. `REPT INIT ERROR FAILED TO READ OFFICIAL FILE l ERRNO d`
7. `EPT INIT ERROR FAILED TO WRITE FILE l  ERRNO d`
8. `REPT INIT ERROR FAILED TO GET OFFICIAL COPY OF %s`
9. `REPT INIT ERROR FAILED TO CHANGE EXECUTABLE OWNER ID FOR l, ERRNO d`
10. `REPT INIT ERROR FAILED TO CHANGE EXECUTABLE PERMISSIONS FOR l, ERRNO d`
11. `REPT INIT ERROR FAILED TO DELETE OFFLINE FILE ERRNO d`
12. `REPT INIT ERROR FAILED TO CREATE OFFLINE FILE ERRNO d`
13. `REPT INIT ERROR FAILED TO SET SANITY INTERVAL, RET s`
14. `REPT INIT ERROR 0 BLOCKS IN CORE DIRECTORY b`
15. `REPT INIT ERROR NO MORE PROCESS SLOTS AVAILABLE, SOME PROCESS NOT CREATED`

6.267.4 Parameters

`a` the process name

`b` the directory name

`c` the process Message Handler (MSGH) name

`d` the UNIX error number

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e the initlist length

f the initlist name

g a description of the software error reported by INIT

h a description of a problem found while parsing initlist

i a decimal number

j a hexadecimal value

k the software update process list file name

l the file name

m the error number

n the name of the cluster

o the message type

p the node

q the number of nodes

r the name of the port

s the return value

t the number of seconds

u the sequence

v number of ticks

x the environment string

y the sanity reset count value

z the number of SPAs

6.267.5 Action to be taken

The following corrective actions are listed below.

1. Contact next level of technical support.
2. Contact next level of technical support.
3. Contact next level of technical support.
4. Contact next level of technical support.
5. Contact next level of technical support.
6. Contact next level of technical support.
7. Contact next level of technical support.
8. Contact next level of technical support.
9. Contact next level of technical support.
10. Contact next level of technical support.

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11. Contact next level of technical support.
12. Contact next level of technical support.
13. Contact next level of technical support.
14. Contact next level of technical support.
15. Contact next level of technical support.

6.267.6 Additional information and references

The following are additional information sources regarding this output message:

Input messages

None.

Output messages

None.

Documents

6.267.7 X733 Information:

AlarmType: qualityOfServiceAlarm

Probable cause: resourceAtOrNearingCapacity

Object name: file system name

Specific problems: none

Additional text: none

6.267.8 Clear OM key

None

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6.267.9 Examples

Alarmed

```
   +++ NCCHAL01 2005-11-23 00:49:23 MAINT
#000024 as00 LEAD > *  REPT INIT ERROR /sn/core is 51% full
::qualityOfServiceAlarm::resourceAtOrNearingCapacity::/sn/core::::::
   END OF REPORT #000024++-
```

Cleared

```
   +++ EAS1NC3 2005-08-29 20:47:44 MAINT
#002800 as032 LEAD > CL REPT INIT ERROR /sn/core is 48% full
::qualityOfServiceAlarm::resourceAtOrNearingCapacity::/sn/core::::::
   END OF REPORT #002800++-
```


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6.268 REPT LK-FAILED

Application
S7SCH

Message class
NMS7

6.268.1 Platform
Applicable to all platforms except where explicitly stated.

6.268.2 Reason for output
This message is sent periodically for the stated link on which the platform is trying to recover. It indicates that the platform could not recover the link at this moment.

6.268.3 Alarm identifiers
The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7041	929041	Yes	MJ

6.268.4 Format
`REPT LK-FAILED LINK= a - b , TRYING TO RECOVER`

6.268.5 Parameters
`a` The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

6.268.6 Action to be taken
Discover the cause for the link failure. Look for a `REPT-LKF` message for the specified link before this message appears. The `LFC` field in that message suggests the cause of the link failure. The link might be restored automatically to in-service.

6.268.7 Additional information and references
The following are additional information sources regarding this command.

Input Messages:

None.

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Output Messages:

```
REPT LKF
```

6.268.8 X733 Information:

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SS7 Link

Specific problems: SS7 Link LKF

Additional text: LK-FAILED LINK=, TRYING TO RECOVER

6.268.9 Clear OM key

The following are the Clear OM key(s) for this command:

/S7011

6.268.10 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
** REPT LK-FAILED LINK=A0000001-00, TRYING TO RECOVER.
::communicationAlarm:: communicationProtocolError::SS7 Link#1 ::
SS7 Link#1 LKF:: LK-FAILED LINK= A0000001-00, TRYING TO RECOVER::
```

Cleared

```
CL RCVRY-LKF::::::LINK=A0000001-00,LFC=OTH,DTIME=11-58-54-CST
::communicationAlarm:: communicationProtocolError::SS7 Link#1::
SS7 Link#1 LKF:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=1, RCVRY-LKF::
```


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6.269 REPT LKF

Application
S7

Message class
NMS7

6.269.1 Reason for output

The following describes the reasons for output when executing this command.

1. Indicates that the stated SS7 link has failed. This message prints a maximum of once-per-minute per-link, regardless of how many failures occur within that minute.

6.269.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS004	941004	No	MJ

6.269.3 Format

The following formats are listed for this command.

1. `REPT LKF::::::LINK=` *a* `,LFC=` *b* `,DTIME=` *c*

6.269.4 Parameters

a The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

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b The link failure code:

ABN

abnormal FIBR/BSNR.

APF

alignment/proving failure.

HWP

hardware problems.

SWP

software problems.

XDA

excessive delay of acknowledgment.

XER

excessive error rate.

XDC

excessive duration of congestion.

ZHW

a hardware problem in SS7IC.

ZL1

a physical link problem.

ZLT

the link is out-of-service because of a signaling link test failure.

ZMN

the link is out-of-service because of a craft command.

ZSW

a software problem in SS7IC.

OTH

OTHER or UNRESOLVED.

c The detection time: *hh - mm - ss - ttt*

hh = the hours.

mm = the minutes.

ss = the seconds.

ttt = the time zone code.

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6.269.5 Action to be taken

The following are the corrective actions:

1. Discover the cause for the link failure and remedy, if possible. The link might be restored automatically to in-service.

6.269.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.269.7 X733 Information:

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SS7 Link

Specific problems: SS7 Link LKF

Additional text: SS7LinkId SS7LinkSet SS7NodeId, REPT-LKF

6.269.8 Clear OM key

The following are the Clear OM key(s) for this command:

```
/S7011
```

6.269.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
   +++ N440SA07 2006-01-19 00:01:25 MAINT //SS004 #000252as00 LEAD >
** REPT-LKF::::::LINK=A0000001-10,LFC=OTH,DTIME=11-54-54-CST
::communicationAlarm:: communicationProtocolError::SS7
Link#1 :: SS7 Link#1 LKF:: SS7LinkId=1 SS7LinkSet=1
SS7NodeId=1, REPT-LKF::
   END OF REPORT #000252++-
```

Cleared

```
   +++ N440SA07 2006-01-19 00:01:25 MAINT /S7011 #000252 as00 LEAD >
CL RCVRY-LKF::::::LINK=A0000001-10,LFC=OTH,DTIME=11-58-54-
CST ::communicationAlarm:: communicationProtocolError::SS7
Link#1:: SS7 Link#1 LKF:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=1,
RCVRY-LKF::
   END OF REPORT #000252++-
```


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6.270 REPT LK-INACTIVE

Application
S7SCH

Message class
NMS7

6.270.1 Reason for output

The following describes the reason for output when executing this command.

1. Indicates that the automatic recovery actions to bring the link to the `ACTIVE` state have failed.

Important! Craft intervention is necessary to bring the link back in-service.

6.270.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7042	929042	No	MJ

6.270.3 Format

The following formats are listed for this command.

1. `REPT LK-INACTIVE LINK= a , FAILED TO RECOVER`

6.270.4 Parameters

`a` The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

6.270.5 Action to be taken

The following corrective actions are listed below.

1. Discover the cause for link failure. Look for a `REPT LKF` message before this message appears. The `LFC` field in that message suggests the cause of the link failure.

6.270.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None.

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Output Messages

```
REPT LKF
```

6.270.7 X733 Information:

AlarmType: communicationAlarm

Probable cause: communicationsProtocolError

Object name: SS7 Link#a

Specific problems: SS7 Link#a LKF::LK-FAILED LINK=b, FAILED TO RECOVER::

Additional text: None

6.270.8 Clear OM key

The following are the Clear OM key(s) for this command:

/S7011

6.270.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
   +++ N440DA17 2007-04-22 03:46:45 MAINT /S7042 #013223 as00 LEAD >
**  REPT LK-INACTIVE LINK=A0000002-14, FAILED TO RECOVER.
::communicationAlarm::communicationsProtocolError::SS7 Link#30::SS7
Link#30
LKF::LK-FAILED LINK=A0000002-14, FAILED TO RECOVER::
     END OF REPORT #013223++-
```

Cleared

```
   +++ N440DA17 2007-04-22 04:06:26 NMS7 /SS011 #000039 as00 LEAD >
CL RCVRY-LKF::::::LINK=A0000001-00,DTIME=04-06-26-CDT
::communicationAlarm::communicationsProtocolError::SS7 Link#1::SS7
Link#1 LKF::SS7LinkId=1 SS7LinkSet=1 SS7NodeId=0, RCVRY-LKF::
    END OF REPORT #000039++-
```


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6.271 REPT LKOTG

Application
S7SCH

Message class
NMS7

6.271.1 Reason for output

Indicates that the SAAL SS7 link has transition, for any reason, from the available state to the unavailable state as preceived by MTP level 3.

6.271.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS025	941025	No	MN

6.271.3 Format

1. `REPT-LKOTG::::::LINK=` *a* `,LOC=` *b* `,DTIME=` *c*

6.271.4 Parameters

`a ( link ID )` The signaling link (SLK): `A0xxxxxx-yz`

`A0xxxxxx`= The SLK set (`A0000000-A0999999`).

`yz` = The signaling link code (SLC) for this SLK, with a range from 0-15.

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`b ( link outage cause )` `LMI`

Local management inhibit

`OTH`

Other reason

`RCO`

Receive far end COO message

`RMI`

Remote management inhibit

`RRO`

Remote release (Out-of-Service)

`RRP`

Remote release (Protocol Error)

`XCG`

Excessive duration of far-end receiving congestion

`XDC`

Excessive delay of acknowledgement

`XER`

Excessive in-service error rate

`ZHW`

Hardware problem

`ZMN`

Craft command cause

`ZLT`

Signalling link test failure

`ZSW`

Software problem

`c ( Date and Time )` the detection time: hh-mm-ss-ttt

hh= the hours

mm= the minutes

ss= the seconds

ttt= the time zone code

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6.271.5 Action to be taken

1. Discover the cause for the link outage and remedy if possible. The link might be restored to in-service automatically.

6.271.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None.

Output Messages

None.

6.271.7 X733 Information:

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SS7 Link

Specific problems: SS7 Link LKOTG

Additional text: SS7LinkId SS7LinkSet SS7NodeId LFC, REPT-LKOTG

6.271.8 Clear OM key

The following are the Clear OM key(s) for this command:

```
/S7026
```

6.271.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
   ** REPT-LKOTG:::::: LINK= A0000001-10,LOC=XER,DTIME= 12-16-30-CST
::communicationAlarm:: communicationProtocolError::SS7 Link#1 ::
SS7Link#1 LKOTG:: SS7LinkId=1
SS7LinkSet=1 SS7NodeId=1,
LFC=XER, REPT-LKOTG::
```

Cleared

```
   CL RCVRY-LKOTG::::::LINK= A0000001-10,AC=INS,DTIME=12-17-05-CST
::communicationAlarm:: communicationProtocolError::SS7 Link#1 ::
SS7 Link#1 LKOTG:: SS   7LinkId=1 SS7LinkSet=1 SS7NodeId=1,
RCVRY-LKOTG::
```


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6.272 REPT LK STATUS

Application
S7SCH

Message class
MAINT

6.272.1 Reason for output

The following describes the reason for output when executing this command.

1. Reports that this node received link status data from the master node for an unequipped link.

6.272.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7222	929222	No	TN

6.272.3 Format

1. `REPT LK STATUS DATA RECEIVED FROM MASTER FOR AN UNEQUIPPED LINK= a-b-c`

6.272.4 Parameters

`a` node ID

`b` board ID

`c` link ID

6.272.5 Action to be taken

1. Check each node to make sure that this link data is provisioned on all nodes including this node.

6.272.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None.

Output Messages

None.

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6.272.7 X733 Information:

AlarmType: equipmentAlarm

Probable cause: informationMissing

Object name: SS7 LINK PROVISION

Specific problems: PROVISION ERROR

Additional text: none

6.272.8 Examples

The following is the example of the alarmed formats for this command:

```
   +++ N440SA07 2006-01-18 23:46:56 MAINT /S7222 #000230 as00
TN REPT LK STATUS DATA RECEIVED FROM MASTER FOR AN UNEQUIPPED
LINK=1-2-4.
::equipmentAlarm::informationMissing::SS7 LINK PROVISION::PROVISION
ERROR::::
   END OF REPORT #000230++-
```


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6.273 REPT MASTERHB

6.273.1 Reason for output

The following describes the reason for output when executing this command:

1. Describes the purpose provided in the output command.

6.273.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7241	929241	No	Minor

6.273.3 Format

The following formats are listed for this command:

1. `REPT MASTERHB-FAILED MASTER=a TRYING TO RECOVER`

6.273.4 Parameters

a S7SCH or STSCH.

6.273.5 Action to be taken

The following are the corrective actions for this command:

1. Check the IP network connection between the local node and the SS7 Master node.
   The SS7 Master node can be obtained by command **OP:SS7MASTER**.
   The STSCH Master node can be obtained by command **OP:SGMASTER**.

6.273.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

RCVRY MASTERHB

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6.273.7 X733 Information

OM key: /S7241

Alarm Type: communicationAlarm

Probable Cause: communicationsSubsystemFailure

Object Name: S7SCH

Specific problem: MASTERHB

Additional text: OOS

6.273.8 Clear OM Key

The following are the Clear OM key(s) for this command:

/S7242

6.273.9 Example

The following are examples of the alarmed formats for this command:

Alarmed

```
* REPT MASTERHB-FAILED  MASTER=as1  TRYING TO RECOVER
::communicationAlarm::communicationsSubsystemFailure::
S7SCH::MASTERHB::OOS::
```

Cleared

```
RCVRY MASTERHB  MASTER=as1  Node ID=1  HostName=as1  Host Machine
Name=as1
::communicationAlarm::communicationsSubsystemFailure::
S7SCH::MASTERHB::IS::
```


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6.274 REPT MATE

Application
S7

Message class
NMMAINT

6.274.1 Reason for output

The following describes the reason for output when executing this command:

1. This message indicates that mate platform is out of service state in the alarm case of /S7017.
2. This message indicates that mate platform is out of service state has been cleared in the clear case of /S7048.

or

6.274.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7017	929017	No	MJ
2	/S7048	929048	No	None

6.274.3 Format

The following formats are listed for this command:

1. `REPT MATE SCP OOS`
2. `REPT MATE SCP OOS`

6.274.4 Parameters

None.

6.274.5 Action to be taken

The following are the corrective actions:

1. Check status of mate. If the status is indeterminate, seek the next level of technical assistance.
2. For information only.

6.274.6 Additional information and references

The following are additional information sources regarding this command.

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Input Messages

None.

Output Messages

None.

6.274.7 X733 Information:

AlarmType: communicationAlarm

Probable Cause: remoteNodeTransmissionError

Object name: S7MATE

Specific problems: REPT MATE SCP OOS

Additional text: none

6.274.8 Clear OM key

The following are the Clear OM key(s) for this command:

/S7048

6.274.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
**   REPT MATE SCP OOS
::communicationAlarm::remoteNodeTransmissionError::S7MATE::
REPT MATE SCP OOS::::
```

Cleared

```
CL  RCVRY MATE SCP IN SERVICE
::communicationAlarm::remoteNodeTransmissionError::S7MATE::
RCVRY MATE SCP IN SERVICE::::
```


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6.275 REPT MEAS THRESHOLD

Application
MEAS

Message class
MAINT

6.275.1 Reason for output

The following describes the reason for output when executing this command.

1. The table measurement is out of range
2. The file */sysdata1/alarm_conf/ MEASthresholds* is corrupted in some way

6.275.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/MS039	922039	Yes	TN,TJ,TC,INFO
2	/MS040	922040	Yes	TN

6.275.3 Format

The following formats are listed for this command.

1. ```
   REPT MEAS THRESHOLD
   MEASUREMENT "a" OUTSIDE OF CONFIGURED VALUES
   RECEIVED FROM PROCESS d
   CONFIGURED VALUES: b
   ACTUAL VALUES: c
   ```
2. ```
   REPT MEAS THRESHOLD
   INVALID THRESHOLDS FILE DETECTED
   NO MEASUREMENET THRESHOLDING WILL BE PERFORMED
   ```

6.275.4 Parameters

`a` the name of the measurement table with measurements outside of the range

`b` the values configure in the MEAS threshold file

`c` the actually measurement values for table `a`

`d` the name of the process which provided this measurement

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6.275.5 Action to be taken

The following corrective actions are listed below.

1. Contact the Network Engineers. One or more of the threshold measurement values has been exceeded, and corrective action may be required.
2. Run **`/cs/sn/bin/MScheckThreshold`** to view syntax errors in the MEASthreshold file.

6.275.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.275.7 X733 Information:

AlarmType: qualityOfServiceAlarm

Probable cause: thresholdCrossed

Object name: <Measurement Table Name>

Specific problems: Measurement outside of configured range

Additional text: None

6.275.8 Clear OM key

Not applicable, as all generated alarms are transient and self clearing.

6.275.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
   +++ N440DA18 2008-04-17 10:15:02 MAINT /MS039 #007460 as002 LEAD >
TC REPT MEAS THRESHOLD
MEASUREMENT "MH_MSGH_MEAS" OUTSIDE OF CONFIGURED VALUES
RECEIVED FROM PROCESS EPAY247
CONFIGURED VALUES:-;-;(1000:-);-;-;(-:100000000000);-;-;-;-;-;-;-;-;-
ACTUAL VALUES:'as002','n440da18',0,0,0,0,0,0,0,0,0,0,0,0,0
::qualityOfServiceAlarm::thresholdCrossed::MH_MSGH_MEAS::Measurement
outside of configured range::;922039::
   END OF REPORT #007460++-
```

Cleared

Not applicable, as all generated alarms are transient and self clearing.

6.275.10 X733 Information:

AlarmType: processingErrorAlarm

Probable cause: corruptData

Object name: <*Absolute* path the thresholds file>

Specific problems: Bad Thresholds file

Additional text: None

6.275.11 Clear OM key

Not applicable, as all generated alarms are transient and self clearing.

6.275.12 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
   +++ N440DA18 2008-04-17 10:55:01 MAINT /MS040 #007820 as002 LEAD >
TN REPT MEAS THRESHOLD
INVALID THRESHOLDS FILE DETECTED
NO MEASUREMENT THRESHOLDING WILL BE PERFORMED
::processingErrorAlarm::corruptData::/sysdata1/alarm_
conf/MEASthresholds::Bad Thresholds file::;922040::
   END OF REPORT #007820++-
```

Cleared

Not applicable, as all generated alarms are transient and self clearing.

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6.276 REPT MEAS WARNING

Application
MEAS

Message class
ALRM

6.276.1 Reason for output

The following describes the reason for output when executing this command:

1. The ratio of free to used space in the TimesTen database is less than 10 percent. This ratio is reported with a minor alarm.
2. The ratio of free to used space in the platform database (PostgreSQL) is less than 10 percent. This ratio is reported with a minor alarm.
3. The ratio of free to used space in the platform database has increased to over 10 percent.
4. The ratio of free to used space in the TimesTen database has increased to over 10 percent.

6.276.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/MS027	922027	Yes	MN
2	/MS031	922031	Yes	MN
3	/MS035	922035	No	CL
4	/MS037	922037	No	CL

6.276.3 Format

The following formats are listed for this command:

1. `REPT MEAS WARNING: TIMESTEN DATABASE SPACE LOW`
   `Free space available in TimesTen (free*100/total) is a`
2. `REPT MEAS WARNING: PLATFORM DATABASE SPACE LOW`
   `Free space available in platform database (free*100/total) is b`
3. `REPT CLEAR PLATFORM DATABASE SPACE LOW ALARM`
4. `REPT CLEAR TIMESTEN DATABASE SPACE LOW ALARM`

6.276.4 Parameters

`a` the percentage of available versus used space in TimesTen database.

`b` the percentage of available versus used space in the platform database.

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6.276.5 Action to be taken

The following are the corrective actions:

1. Seek the next level of technical assistance.
2. Seek the next level of technical assistance.
3. For information only
4. For information only

6.276.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.276.7 X733 Information:

Alarm OM Key: /MS027

AlarmType: processingErrorAlarm

Probable cause: storageCapacityProblem

Object name: MEAS

Specific problems: TIMESTEN DATABASE SPACE NEARLY FULL

Additional text: TIMESTEN DATABASE SPACE NEARLY FULL

6.276.8 Clear OM key

/MS037

6.276.9 X733 Information:

Alarm OM Key: /MS031

AlarmType: processingErrorAlarm

Probable cause: storageCapacityProblem

Object name: MEAS

Specific problems: PLATDB DATABASE SPACE NEARLY FULL

Additional text: PLATDB DATABASE SPACE NEARLY FULL

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6.276.10 Clear OM key

/MS035

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6.277 REPT OM

Application
USLI

Message class
MAINT

6.277.1 Reason for output

The following describes the reason for output when executing this command.

1. Reports a count of the number of times an automatic output message (OM) with the same message identity is blocked during a threshold period and discarded by the system. An OM identity can include a file and line number pair, an assert number, or an OMDB Message ID.
2. The threshold period has upper and lower threshold parameters that are configured per process at initialization.

Note: OMs are blocked when the same message identity is currently registered and the system attempts to output the OM. OMs are registered and blocked when the same message identity exceeds its threshold limit for a given period. For example, when the number OMs for a specific message identity exceeds the upper threshold, OMs are blocked from being processed by the system. Once blocked by the system, the OM remains blocked until the number of OMs for that message identity fall below the lower threshold.

The following table lists the default value and range of values for a threshold period.

Attribute	Default Value	Range
Threshold Period	5 seconds	0, 1-60 seconds
Lower Threshold	10 seconds	1-254 seconds
Upper Threshold	20 seconds	2-255 seconds

Important! Brevity control restricts the output message for a failed event from repetitive processing and is not enabled for output messages that are a response to a manual request (input message).

6.277.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/CR065	906065	No	MN,CL
2	/CR065	906065	No	MN

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6.277.3 Format

The following formats are listed for this command.

1. `REPT OM e FOR PROCESS a b MESSAGES DISCARD OM IDENTITY: c`
2. `REPT OM BLOCKED FOR PROCESS a b MESSAGES DISCARDED SEVERITY LEVEL f`

6.277.4 Parameters

`a` a process running when brevity control was activated.

`b` the total number of blocked messages for this message identity listed by the system.

`c` identifies the output message blocked by the system.

`e` BLOCKED or CLEARED

The following list contains some types of output messages blocked by the system:

1. CRMSG OM BEING BLOCKED; MSG KEY: d This blocked OM had a message key assigned to it. For a SPA the key could be either the assert number or another key that was assigned by the vendor.
2. CRMSG OM BEING BLOCKED; OMDB KEY: d This blocked OM is defined in RC/V Form 2.3.
3. USL OUTPUT MESSAGE DEFINITION FORM. d represents the key to Form 2.3.
4. CRERROR BEING BLOCKED; FILE : d This blocked OM is a craft interface (CR) error message. d represents the file where the output message was defined.
5. CRASSERT OM BEING BLOCKED; ASSERT IS: d CRCFTASSERT OM BEING BLOCKED; CRAFT ASSERT IS: d These blocked OMs are meant to provide information about the unexpected or invalid state of the software program that has been detected. (d represents the numeric identifier that precedes the header text in the assert message.)

`f` identifies the severity of the "b" messages that were blocked. In the following example, output messages are blocked for the process SCC:

```
REPT OM BLOCKED FOR PROCESS SCC 6 MESSAGES DISCARD OM INDENTITY:
SEVERITY LEVEL: ASSERT(0), CRAFT ASSERT(2), MINOR(4)
```

The severity levels of the blocked output messages include:

MINOR: all minor alarms

ASSERT: all non-craft asserts

CRAFT ASSERT: craft asserts

ASSERT(h) : all non-craft asserts

CRAFT ASSERT(h) : craft asserts

MINOR(h): all minor alarms

Where h is the number of messages blocked. If both minor alarms and asserts are brevity controlled, a separate summary REPT OM will be provided for each type.

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6.277.5 Action to be taken

None. This message indicates OMs are blocked. The system will periodically print out the OM associated with the message identity that is blocked, and report the number of OMs that have been discarded by the system.

6.277.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None

Output Messages

None

6.277.7 X733 Information:

AlarmType: qualityOfServiceAlarm

Probable cause: queueSizeExceeded

Object name: c

Specific problems: OM BLOCKED c

Additional text: none

6.277.8 Clear OM key

The following are the Clear OM key(s) for this command:

/CR065

6.277.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
   +++ N440SA07 2006-01-25 15:26:33 MAINT /CR065 #000342 as00 LEAD >
*  REPT OM BLOCKED FOR PROCESS SYSTAT
773 MESSAGES DISCARD
OM INDENTITY :
CRERROR BEING BLOCKED; FILE : CRsystat.C
LINE NUMBER : 71
::qualityOfServiceAlarm::queueSizeExceeded::
2CRsystat.C!71::::::
   END OF REPORT #000342++-
```

Cleared

```
   +++ N440SA07 2006-01-25 15:26:4 3 MAINT /CR065 #000343 as00 LEAD >
CL REPT OM CLEARED FOR PROCESS SYSTAT
773 MESSAGES DISCARD
OM INDENTITY :
CRERROR BEING BLOCKED; FILE : CRsystat.C
LINE NUMBER  : 71
::qualityOfServiceAlarm::queueSizeExceeded::
2CRsystat.C!71::::::
   END OF REPORT #000343++-
```


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6.278 REPT PROCESS

Application
USLI

Message class
NMS7

6.278.1 Reason for output

1. Reports that well over a thousand bad input commands were processed in succession due to incorrect input from SCL or Subshl.

6.278.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/CR060	906060	No	TN

6.278.3 Format

1. `REPT PROCESS a KILLED EXCESSIVE BAD INPUT COMMANDS NUMBER OF BAD INPUT COMMANDS WAS b`

6.278.4 Parameters

a the name of the process that is running.

b the number of bad input commands.

6.278.5 Action to be taken

None.

6.278.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None

Output Messages

None

6.278.7 X733 Information:

AlarmType: proceduralError

Probable cause: proceduralError

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Object name: EXCESSIVE BAD IMS

Specific problems:

Additional text: none

6.278.8 Clear OM key

None

6.278.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
   +++ N440SA07 2006-01-25 14:44:18 MAINT /CR060 #000143 as00 LEAD >
TN REPT PROCESS subshl KILLED
   EXCESSIVE BAD INPUT COMMANDS
   NUMBER OF BAD INPUT COMMANDS WAS 1001
::processingErrorAlarm::proceduralError::EXCESSIVE BAD IMS::::::
   END OF REPORT #000143++-
```


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6.279 REPT RTEUAV

Application
STSCH

Message class
NMS7

6.279.1 Reason for output

1. Indicates that all routes to an adjacent signaling node (an STP) are unavailable for the SS7 traffic.

6.279.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS003	941003	No	CR
2	/SS022	941022	No	CR

6.279.3 Format

1. `REPT RTEUAV::::::DPC=` *a* `,FARCLLI=` *b* `,DTIME=` *c*

6.279.4 Parameters

`a` the destination pointcode.

ANSI format = nnncccmmm (n=Network ID, c=Cluster ID, m=Member ID)

ITU format = xxxxx (0-16383)

CHN format = mmmssppp (m=Main Area ID, s=Sub-Area ID, p=Point ID)

`b` the common language location identifier: *xxxxyyzzwww*

xxxx = city, town, or locality code

yy = state or province code

zz = building code

www = traffic unit identifier code

`c` the detection time: *hh - mm - ss - ttt*

hh = hours

mm = minutes

ss = seconds

ttt = time zone code

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6.279.5 Action to be taken

1. Discover the reasons for route unavailability. Reasons may include link outages, node failures, network blockage, manual actions of an network administrator, or automatic SS7 network management actions.

6.279.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.279.7 X733 Information:

Alarmed

Alarm OM key: /SS003, /SS022

AlarmType: communicationAlarm

Probable Cause: communicationsProtocolError

Object Name: SS7FarEndPointCode#

Specific problem: SS7FarEndPointCode# RTEUAV

Additional text: REPT-RTEUAV, SS7FarEnd=INACCESSIBLE

6.279.8 Clear OM key

The following are the Clear OM key(s) for this command:

1. /SS010
2. /SS024

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6.279.9 Examples:

Alarmed

```
   *C REPT-RTEUAV::::::DPC=961,FARCLLI=LSLEILWETT3,DTIME=12-17-05-CST
::communicationAlarm::communicationsProtocolError::SS7FarEndPointCode
#961::SS7FarEndPointCode#961 RTEUAV::REPT-RTEUAV, SS7FarEnd=
INACCESSIBLE;
941022::
```

Cleared

```
   CL RCVRY-RTEUAV::::::DPC=961,FARCLLI=LSLEILWETT3,DTIME=12-34-33-CST
::communicationAlarm::communicationsProtocolError::SS7FarEndPointCode
#961::SS7FarEndPointCode#961 RTEUAV:: RCVRY-RTEUAV, SS7FarEnd=
ACCESSIBLE;
941024::
```

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6.280 REPT SGRTEUAV

Application
STSCH

Message class
MAINT

6.280.1 Reason for output

The following describe reasons for output when executing this command:

1. Indicates the route status for the specified signaling gateway route.
2. Indicates alarm condition is now clear.

6.280.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SG001	935001	No	MJ
2	/SG002	935002	No	CL

6.280.3 Format

The following formats are listed for this command:

1. `REPT SGRTEUAV:::::: FARCLLI=` *a* `,DTIME=` *b*
2. `RCVRY SGRTEUAV:::::: FARCLLI=` *a* `,DTIME=` *b*

6.280.4 Parameters

`a` the common language location identifier of the SG (*xxxxyyzzwww*), where

xxxx = city, town, or locality code.

yy = state or province code

zz = building code.

www = traffic unit identifier code.

`b` the detection time (*hh - mm - ss - ttt*), where

hh = hours

mm = minutes

ss = seconds

ttt = time zone

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6.280.5 Action to be taken

1. Recovery route path or seek next level of technical assistance.
2. For information only. No action necessary.

6.280.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.280.7 X733 Information:

Alarmed

Alarm OM key: /SG001

AlarmType: communicationAlarm

Probable Cause: outOfService

Object Name: STSCH

Specific problem: ROUTE UNAVAILABLE

Additional text: none

6.280.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SG002

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6.280.9 Examples:

Alarmed

```
   +++ N440SA17 2006-01-13 00:06:52 MAINT /SG001 #000002 as17 LEAD >
** REPT-SGRTEUAV:::::: FARCLLI=NPVLILASTT1,DTIME=00-06-52-CST
::communicationAlarm::outOfService::STSCH::ROUTE UNAVAILABLE::::
   END OF REPORT #000002++-
```

Cleared

```
   +++ N440SA17 2006-01-13 00:38:01 MAINT /SG002 #000011 as17 LEAD >
CL RCVRY-SGRTEUAV FARCLLI=NPVLILASTT1,DTIME=00-38-01-CST
::communicationAlarm::outOfService::STSCH::ROUTE UNAVAILABLE::::
   END OF REPORT #000011++-
```


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6.281 REPT SPMAN

Application
SPMAN

Message class
NMS7

6.281.1 Reason for output

The following describes the reason for output when executing this command.

1. Reports an increase in Subsystem Number (SSN) resource management level.
2. Reports a decrease in SSN resource management level.
3. Reports an SSN state change that occurred at the mate platform.
4. Reports a Service Package Application (SPA) state change for running SPAs that occurred at the local Service Circuit Node (eCS).
5. Reports an SSN state change for running SPAs that occurred at the local platform.

6.281.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SA005	930005	No	MJ
2	/SA006	930006	No	CL
3	/SA002	930002	No	None
4	/SA013	930013	No	None
5	/SA012	930012	No	None

6.281.3 Format

The following formats are listed for this command.

1. `REPT SPMAN - SSN a OVERLOAD LEVEL INCREASED TO b`
2. `REPT SPMAN - SSN a OVERLOAD LEVEL DECREASED TO b`
3. `REPT SPMAN - MATE STATE CHANGE FOR SSN a - c TO c`
4. `REPT SPMAN - LOCAL STATE CHANGE FOR SPA c - TRANSITION TO d`
5. `REPT SPMAN - LOCAL STATE CHANGE FOR SSN a - TRANSITION TO e`

6.281.4 Parameters

`a` the subsystem number (5-254).

`b` the subsystem number overload level (that is, the SSN resource management level).

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`c` one of the following SSN states:

`0=DISABLED` (disabled).

`1=IS` (in-service).

`2=OOS` (out-of-service).

`d` a valid SPA name.

`e` one of the following SPA states:

`DISABLED` (disabled).

`IS` (in-service).

`MOOS` (manual-out-of-service).

`f` one of the following SSN states:

`DISABLED` (disabled).

`IS` (in-service).

`OOS` (out-of-service).

6.281.5 Action to be taken

The following corrective actions are listed below.

1. Check the SSN resource management Recent Change and Verify (RC/V) system parameters. Reconfigure the thresholds (if necessary). If the desired overload threshold is set, then this message is for information only.
2. Check the SSN resource management Recent Change and Verify (RC/V) system parameters. Reconfigure the thresholds (if necessary). If the desired overload threshold is set, then this message is for information only.
3. For information only.
4. For information only.
5. For information only.

6.281.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

DELETE:SPA,PROC

INSTALL:SPA,PROC

OP:STATUS,SPA

RMV:SPA

RMV:SSN

RST:SPA

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RST:SSN

Output Messages:

None.

6.281.7 X733 Information:

Alarm OM Type: /SA005

AlarmType: qualityOfServiceAlarm

Probable cause: thresholdCrossed

Object name: SSN (ssn number)

Specific problems: ALARM EVENT

Additional text: none

6.281.8 Clear OM key

The following are the Clear OM key(s) for this command:

/SA006.

6.281.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
+++ N440SA07 2006-01-26 21:07:45 ALRM /SA005 #000026 as00 LEAD >
** REPT SPMAN - SSN 5 OVERLOAD LEVEL INCREASED TO 5
::qualityOfServiceAlarm::thresholdCrossed::SSN::ALARM EVENT::::
   END OF REPORT #000026++-
```

Cleared

```
+++ N440SA07 2006-01-26 21:07:55 MAINT /SA006 #000283 as00 LEAD >
CL REPT SPMAN - SSN 5 OVERLOAD LEVEL DECREASED TO 4
::qualityOfServiceAlarm::thresholdCrossed::SSN 5::ALARM EVENT::::
   END OF REPORT #000283++-
```

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6.282 REPT STP-PRO

Application
S7SCH

Message class
MAINT

6.282.1 Reason for output

The following describes the reason for output when executing this command.

1. Indicates that the platform is receiving processor outage messages on all the links from the Signal Transfer Point (STP).

6.282.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7099	929099	No	CR
2	/S7046	929046	No	CR

6.282.3 Format

The following formats are listed for this command.

1. `REPT STP-PRO STP=` *`a`* `FARCLLI=` *`b`*

6.282.4 Parameters

`a` the destination pointcode.

ANSI format = nnncccmmm (n=Network ID, c=Cluster ID, m=Member ID)

`b` the common language location identifier of the STP: xxxxyyzzwww

xxxx = city, town, or locality code.

yy = state or province code

zz = building code.

www = traffic unit identifier code.

6.282.5 Action to be taken

The following corrective actions are listed below.

1. Call the STP administration and tell them that you are experiencing processor outage from their node. The Signaling Engineering and Administration System (SEAS) might have taken some actions.

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6.282.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.282.7 X733 Information

Alarm OM key: /S7046, /S7099

AlarmType: communicationAlarm

Probable Cause: communicationsProtocolError

Object Name: STP#, FARCLLI=

Specific problem: STP562 Processor Outage

Additional text: STP=PROCESSOR OUTAGE

6.282.8 Clear OM key

The following are the Clear OM key(s) for this command:

/S7047

/S7100

6.282.9 Example

The following are examples of the alarmed formats for this command:

Alarmed

```
*C REPT STP-PRO STP=581 FARCLLI=NPVLILASTT1
::communicationAlarm::communicationsProtocolError:: STP#581,
FARCLLI=NPVLILASTT1::STP# Processor Outage::STP=PROCESSOR OUTAGE::
```

Cleared

None

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6.283 REPT SUBSYSTEM

Application
S7

Message class
NMS7

6.283.1 Reason for output

The following describes the reasons for this output.

1. This message indicates that the subsystem prohibited table is full. The table is automatically reset as the report prints.
2. This message indicates that the subsystem verification table is full. The table is automatically reset as the report prints.
3. This message indicates that no subsystem prohibited message has been received within the last four hours. The table is automatically reset as the report prints.

6.283.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7115	929115	No	TN
2	/S7116	929116	No	TN
3	/S7117	929117	No	TN

6.283.3 Format

The following formats are listed for this command.

1. `REPT SUBSYSTEM PROHIBITED TABLE IS RESET DUE TO ZERO SSP BEING RECEIVED WITHIN LAST FOUR HOURS.`
2. `REPT SUBSYSTEM PROHIBITED TABLE IS RESET DUE TO TABLE BEING FULL.`
3. `REPT SUBSYSTEM STATUS VERIFICATION TABLE IS RESET DUE TO TABLE BEING FULL.`

6.283.4 Parameters

None.

6.283.5 Action to be taken

No action required.For information only.

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6.283.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages

None.

Output Messages

None.

6.283.7 X733 Information:

OM key : /S7115

AlarmType: communicationAlarm

Probable cause: thresholdCrossed

Object name: SS7 SSPTBL

Specific problems: PROHIBITED TABLE RESET

Additional text: NO ACTIVITY

6.283.8 Clear OM key

None

6.283.9 Examples

The following is the example of the alarmed formats for this command:

```
   Transient
TN REPT SUBSYSTEM PROHIBITED TABLE IS RESET
DUE TO ZERO SSP BEING RECEIVED WITHIN LAST FOUR HOURS.
::communicationAlarm::thresholdCrossed::SS7 SSPTBL::PROHIBITED TABLE
   RESET::NO ACTIVIT   Y::
```

6.283.10 X733 Information:

OM key : /S7116

AlarmType: communicationAlarm

Probable cause: thresholdCrossed

Object name: SS7 SSPTBL

Specific problems: PROHIBITED TABLE RESET

Additional text: TABLE FULL

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6.283.11 Clear OM key

None

6.283.12 Examples

The following is the example of the alarmed formats for this command:

```
   Transient
TN REPT SUBSYSTEM PROHIBITED TABLE IS RESET
DUE TO TABLE BEING FULL.
::communicationAlarm::thresholdCrossed::SS7 SSPTBL::PROHIBITED TABLE
   RESET::TABLE FULL::
```

6.283.13 X733 Information:

OM key : /S7117

AlarmType: communicationAlarm

Probable cause: thresholdCrossed

Object name: SS7 SSVTBL

Specific problems: VERIFICATION TABLE RESET

Additional text: TABLE FULL

6.283.14 Clear OM key

None

6.283.15 Examples

The following is the example of the alarmed formats for this command:

```
   Transient
TN REPT SUBSYSTEM STATUS VERIFICATION TABLE IS RESET
DUE TO TABLE BEING FULL.
communicationAlarm::thresholdCrossed::SS7 SSVTBL::VERIFICATION TABLE
   RESET::TABLE FULL
```


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6.284 REPT SUSTNLKF (TS)

Application
S7SCH

Message class
NMS7

6.284.1 Reason for output

1. Indicates that the failed SAAL SS7 link attempting activation has failed to prove-in for a period exceeding the T19 Failed link craft referral timer.

6.284.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/SS027	941027	No	MJ

6.284.3 Format

1. `REPT-SUSTNLKF::::::LINK=` *a* `,FT=` *b* `,T19=` *c* `,DTIME=` *d*

6.284.4 Parameters

`a ( link ID )` the Signalling link (SLK) : *A0xxxxxx-yz*

A0xxxxxx = the signalling linkset(A0000001-A0000016).

yz = a logical link number(01-32).

`b ( Failure Type )` `OTH`= Other reason

`RCO`= Receive far end COO message

`RRO`= Remote release (Out-of-Service)

`RRP`= Remote release (Protocol Error)

`XCG`= Excessive duration of far-end receiving congestion

`XDC`= Excessive delay of acknowledgement

`XER`= Excessive in-service error rate

`ZHW`= Hardware problem

`ZLT`= Signalling link test failure

`ZSW`= Software problem

`c ( T19 timer value )` the range from 360 to 600 seconds.

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`d ( Date and Time )` The detection time: *hh-mm-ss-ttt*

hh= the hours

mm= the minutes

ss= the seconds

ttt= the time zone code

6.284.5 Action to be taken

1. Discover the cause for the link outage and remedy if possible. The link might be restored to in-service automatically.

6.284.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.284.7 X733 Information:

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SS7 Link

Specific problems: SS7 Link LKOTG

Additional text: /S7026

6.284.8 Clear OM key

The following are the Clear OM key(s) for this command:

/S7026

6.284.9 Examples

The following are examples of the alarmed formats for this command:

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Alarmed

```
+++ N440SA05 2005-06-22 07:50:09 NMS7 /SS027 #001603 as001 LEAD >
*  REPT-SUSTNLKF::::::LINK=A0000002-00,FT=ZLT,T19=480,DTIME=07-50-09-CDT

::communicationAlarm::communicationsProtocolError::S7SCH::
SAAL LINK ACTIVATION FAILURE:: SS7 Link#2 FAILED TO PROVE-IN
WITHIN T19=480, FAILURE TYPE=ZLT::
   END OF REPORT #001603++-
```

Cleared

```
CL RCVRY-LKOTG::::::LINK= A0000001-00,AC=INS,DTIME=12-17-05-CST
::communicationAlarm:: communicationProtocolError::SS7 Link#1 ::
SS7 Link#1 LKOTG:: SS7LinkId=1 SS7LinkSet=1 SS7NodeId=1,
RCVRY-LKOTG::
```

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6.285 REPT SYSTEM

Application
S7

Message class
NMS7

6.285.1 Reason for output

The following describes the reason for output when executing this command.

1. All the SS7 links in the platform are in the out-of-service (OOS) state, and the platform can no longer communicate with any Signal Transfer Points (STPs).
2. The platform is no longer isolated from the SS7 network.
3. All the SS7 links in the platform are in the out-of-service (OOS) state, and the platform can no longer communicate with any Signal Transfer Points (STPs).

6.285.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7144	929144	No	CR
2	/S7145	929145	No	None
3	/S7148	929148	No	TC

6.285.3 Format

The following formats are listed for this command.

1. `REPT SYSTEM ISOLATED FROM THE SS7 NETWORK`
2. `REPT SYSTEM CONNECTED TO THE SS7 NETWORK`
3. `REPT SYSTEM ISOLATED FROM THE SS7 NETWORK`

6.285.4 Parameters

None.

6.285.5 Action to be taken

The following corrective actions are listed below.

1. Seek next level of technical assistance.
2. Seek next level of technical assistance.
3. Seek next level of technical assistance.

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6.285.6 Additional information and references

The following are additional information sources regarding this command.

Input Messages:

None.

Output Messages:

None.

6.285.7 X733 Information:

OM key /S7144

AlarmType: communicationAlarm

Probable cause: communicationsSubsystemFailure

Object name: SYSTEM ISOLATION FROM SS7

Specific problems: SYSTEM ISOLATION

Additional text: REPT SYSTEM ISOLATED FROM THE SS7 NETWORK

6.285.8 Clear OM key

The following are the Clear OM key(s) for this command:

/S7145

6.285.9 Examples

The following are examples of the alarmed formats for this command:

Alarmed

```
*C REPT SYSTEM ISOLATED FROM THE SS7 NETWORK
::communicationAlarm::communicationsSubsystemFailure::
SYSTEM ISOLATION FROM SS7::SYSTEM ISOLATION::S7SCH - REPT
SYSTEM ISOLATED FROM THE SS7 NETWORK::
```

Cleared

```
REPT SYSTEM CONNECTED TO THE SS7 NETWORK
::communicationAlarm::communicationsSubsystemFailure::
SYSTEM ISOLATION FROM SS7::SYSTEM ISOLATION::S7SCH - REPT
SYSTEM CONNECTED TO THE SS7 NETWORK::
```

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6.285.10 X733 Information:

OM key /S7148

AlarmType: communicationAlarm

Probable cause: communicationsSubsystemFailure

Object name: SYSTEM ISOLATION FROM SS7

Specific problems: SYSTEM ISOLATION

Additional text: REPT SYSTEM ISOLATED FROM THE SS7 NETWORK

6.285.11 Clear OM key

None

6.285.12 Examples

The following is the example of the alarmed formats for this command:

```
TC REPT SYSTEM ISOLATED FROM THE SS7 NETWORK
::communicationAlarm::communicationsSubsystemFailure::
SYSTEM ISOLATION FROM SS7::SYSTEM ISOLATION::S7SCH - REPT
SYSTEM ISOLATED FROM THE SS7 NETWORK::
```


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6.286 REPT SYSTEM OVERLOAD

Application
S7SCH

Message class
NMS7

6.286.1 Reason for output

The following describes the reasons for this output:

1. Indicate system overload level increased one level.
2. Indicate system overload level decreased one level.

6.286.2 Alarm identifiers

The following table shows the alarm identifiers for each message format:

Format	OM key	Alarm ID	Repeat	Alarm level
1	/S7253	929253	No	MJ
2	/S7254	929254	No	CL

6.286.3 Format

The following formats are listed for this command:

1.
```
REPT SYSTEM OVERLOAD LEVEL INCREASED TO a FOR NODE  b –
          MACHINE          TRANSACTION TIMEOUTS
-------------------------------------------------------------------
c                    d
```
2.
```
REPT SYSTEM OVERLOAD LEVEL DECREASED TO a FOR NODE  b –
          MACHINE          TRANSACTION TIMEOUTS
-------------------------------------------------------------------
c                    d
```

6.286.4 Parameters

a the system overload level (0-15).

b the SS7 node ID.

c R-C-S for the application node

d the number of timeouts per application node.

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6.286.5 Action to be taken

The corrective actions are listed as follows.

1. This report is generated by the system, when the system detects that the overload level has been changed.
2. This report is generated by the system, when the system detects that the overload level has been changed.

6.286.6 Additional information and references

The following are additional information sources regarding this command:

Input Messages

None.

Output Messages

None.

6.286.7 X733 Information

AlarmType: communicationAlarm

Probable cause: communicationProtocolError

Object name: SYSTEM OVERLOAD

Specific problems: SYSTEM OVERLOADED

Additional text: S7SCH - SYSTEM OVERLOAD STARTED

6.286.8 Clear OM key

/S7254

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6.286.9 Examples

Alarmed

```
+++ ATCA100 2012-06-22 08:41:58 MAINT /S7253 #000689 0-0-4 >
** REPT SYSTEM OVERLOAD LEVEL INCREASED TO 1 FOR NODE 0-0-4
::communicationAlarm::communicationsProtocolError::S7SCH::
SYSTEM OVERLOAD:: SYSTEM OVERLOAD STARTED::
   END OF REPORT #000689++-
```

Cleared

```
CL REPT SYSTEM OVERLOAD LEVEL DECREASED TO 0 FOR NODE 0-0-4
::communicationAlarm:: communicationProtocolError::
SYSTEM OVERLOAD:: SYSTEM OVERLOADED:: S7SCH - SYSTEM OVERLOAD
STOPPED::
```

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7 Recent change and verify

7.1 Overview

7.1.1 Purpose

This chapter provides an introduction to recent change and verify (RC/V) system and describes RC/V forms.

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Introduction to recent change and verify

7.2 Overview

7.2.1 Purpose

This section provides a high level overview of the recent change and verify (RC/V) system, and defines the basic skills that you need to access and use the RC/V system. This section also defines the menu mode of accessing the menus and forms and introduces the various navigational, input and informational ODI form commands.

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7.3 Getting familiar with submenus

7.3.1 Purpose

To complete recent change tasks in a reasonable timeframe, you need to be able to get to the appropriate form quickly. To do this, you should become familiar with the submenus and the various forms they contain.

7.3.2 The right submenu for the task

The following list provides you with all the submenus in the RC/V system. Use this list to determine what form you should access to perform your task. If you are unsure what tasks are available for a particular submenu, refer to either the submenu description overview or to the list of tasks that are associated with that submenu. You can find these at the beginning of each submenu section (typically the beginning of each chapter).

Note: Only submenus available on the platform are listed here:

- 7.32 “Submenu 2: OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU” (p. 886)
- 7.47 “Submenu 3: SS7 SERVICE CIRCUIT HANDLER SUBMENU” (p. 935)
  - 7.48 “Submenu 3.1: SS7 LINK MANAGEMENT SUBMENU” (p. 937)
  - 7.49 “Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version)” (p. 939)
  - 7.50 “Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ANSI version)” (p. 940)
  - 7.52 “Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ITU version)” (p. 942)
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- 7.154 “Submenu 8: OSP SERVICE CIRCUIT HANDLER SUBMENU” (p. 1140)
- 7.159 “Submenu 12: SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU” (p. 1147)
- 7.178 “Submenu 16: MUX SERVICE CIRCUIT HANDLER SUBMENU” (p. 1193)

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7.4 Getting familiar with forms

7.4.1 Form version definitions

The RC/V system maintains three form versions: ITU, ANSI, and CHN.

ITU (International Telecommunications Union)
This form version is based on standards developed by the ITU. The ITU is a United Nations-sponsored assembly of technical representatives from various nations that develops worldwide standards for communications systems. The ITU's telecommunications standards, including international protocols for platform signaling systems, are established by its Telecommunication Standardization Sector (ITU-TSS). Formerly called the Consultative Committee on International Telegraphy and Telephony (CCITT).

ANSI (American National Standards Institute)
This form version is based on standards developed by ANSI, which is an organization that defines North American standards for specific fields of technical activity, including platform signaling protocols.

CHN
This form version is for China.

7.4.2 Finding the correct form version in this documentation

In this documentation, all forms and their corresponding descriptions and procedures are labeled for each form version where appropriate. If a description, table, or procedure in this documentation does not specify a particular form version, you may use that form for ITU, ANSI, and CHN.

7.4.3 What form version are you using?

If you do not know what form version you are using, go to 7.39 “Form 2.6: SS7 Office Parameters Form” (p. 905), and look at the POINT CODE FORMAT field.

7.4.4 Gateway platform users

The gateway platform provides a mixed point code format platform to support communication with two networks with different point code formats. The platform can be installed as a gateway platform to support ITU and ANSI point code formats concurrently. You may configure specific SS7 link sets to be in the ITU network and others to be in the ANSI network.

Submenus 3.1 through 3.4 provide further submenu interaction that prompts you for ITU or ANSI form versions. You may enter 1 for ITU or 2 for ANSI. The default is ITU. No further submenu is provided if the default is used. After you select the form version, the appropriate form displays.

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7.5 Getting familiar with terminology

7.5.1 Basic terms

Operations

Operations are processes that occur when you enter commands to initiate or control database activities. These processes may consist of database operations, or recent change and verify operations.

These various types of operations can be the result of main menu commands, form commands, text commands, input commands, and so forth, depending on where the commands are entered. For more information on database operations, see 7.11 “Database Operations” (p. 843).

Options

An option is a parameter associated with an operation. For example, `VFYSCIMG` verifies the session parameter settings for a screen image.

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7.6 RC/V platform data

7.6.1 Description

This section briefly explains how to use the recent change and verify system (RC/V) to update platform data and describes the display of menus and forms.

7.6.2 Accessing platform data

Both platform data and SPA-related data utilize the ODIN® database management system (DBMS). This system provides the menu mode for accessing platform data while updating SPA data can be done using text mode as well as menu mode. The ODIN DBMS used for menu mode displays screens that share the characteristics described in this chapter.

To access RC/V platform data, enter the following command:

RCV:MENU,PLAT;

or

RCV:MENU;

The Main Menu displays.

```
Screen 1 of 2
                NETWORK PLATFORM  MAIN MENU
Selection    Category
[  1]   SERVICE PACKAGE MANAGEMENT SUBMENU
[  2]   OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU
[  3]   SS7 SERVICE CIRCUIT HANDLER SUBMENU
[  4]   DATABASE CONFIGURATION SUBMENU
[  5]   SERVICE CIRCUIT HANDLER SUBMENU
[  6]   OPERATIONS SYSTEMS INTERFACES SUBMENU
[  7]   SPA RELATED PLATFORM FORMS SUBMENU
[  8]   OSPSCH SERVICE CIRCUIT HANDLER SUBMENU
[  9]   TCP/IP SERVICE CIRCUIT HANDLER SUBMENU
[ 10]   TCP/IP CONNECTION MANAGEMENT SUBMENU
[ 11]   ISUP SERVICE CIRCUIT HANDLER SUBMENU
[ 12]   SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU
[ 13]   DIAMETER SERVICE CIRCUIT HANDLER SUBMENU
[ 14]   VORTEX RULES ENGINE PARAMETERS SUBMENU
[ 15]   JAINSLEE PARAMETERS SUBMENU
[ 16]   MUX SERVICE CIRCUIT HANDLER SUBMENU
```

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```
Screen 2 of 2
                    NETWORK PLATFORM  MAIN MENU

Selection    Category
[ 17]   CDR SERVICE CIRCUIT HANDLER SUBMENU
[ 18]   BILL CONFIGURATION SUBMENU
```

7.6.3 Exiting the system

To return to the main menu from any submenu or form execute the command **<** for each screen until the platform main menu displays. Execute the **!** command to return to the local maintenance terminal command prompt.

If you are in INSERT/UPDATE/DELETE mode on a form (entered the form using the **i**, **u**, **d**, **qu**, or **qd** command), and you want to exit the form without committing any change, you must first abort the operation using the **!** command. You will see, for example, **UPDATE ABORTED!!** on the top right corner of the form after you execute command **!** while you are in the UPDATE mode. You can then exit the form using the **<** command.

The next two sections are a detailed description of using menu mode and form commands.

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7.7 Using menu mode

7.7.1 Description

Menu mode is menu-driven. You make one or more menu selections to invoke forms (also called screens or views) where you add, update, delete, or verify records. Menu selections are also available for querying the database.

7.7.2 Navigating the RC/V screens

The following table defines the areas of the RC/V screen.

RC/V screen area	Description
screen counter	If all the data for a menu cannot fit on one screen, a screen counter located in the upper left corner of the screen displays the current screen location within a set of multiple screens. (Example: Screen 1 of 2)
selection fields	Selection fields define the views accessible from the menu, including the view number.
acknowledgement area	Error, warning and informational messages display in the lower left side of the screen when problems occur.
command line menu	The command line menu displays a dynamic set of commands that vary from menu to menu, depending on the type of commands available to each menu.
screen title	The screen title identifies the menu or form by name. (Example: ENHANCED CONTROL SERVER MAIN MENU.

7.7.3 Main menu and submenu command line options

The following table defines the command line options available on the main menu and submenus.

Command	Purpose
view #	At the command line, enter the number of the form you want to view or edit. For example, if you're at the ENHANCED CONTROL SERVER MAIN MENU, enter 1 to view the SERVICE PACKAGE MANAGEMENT SUBMENU.
view name	At the command line, enter the name of the menu or form you want to view or edit. This command is case sensitive, which means that if the menu or form name is displayed in all capital letters, you must enter the name at the command line in all capital letters.
!	At the command line, enter this to exit the RC/V system. This is also used to abort a data change (INSERT/UPDATE/DELETE) operation.
?	At the command line, enter this to display the help page.

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Command	Purpose
<	At the command line, enter this to return to the previous screen.
n	At the command line, enter this to go to the next page of the current menu. If the current menu has only one page, it will redisplay.

7.7.4 Applying database operations to the form

When you select an item from a menu, a new screen appears. This screen can be either another menu or a form. When you select a form, you are prompted to enter a database operation to the form. The prompt looks similar to the following:

```
Enter Database Operation:
I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD
```

The following table defines the types of database operations you can apply to the form.

Table 7-1 Form database operations

Operation	Description
I	Insert a new tuple into the database using the key value(s) you entered in the form.
R	Review the data in the tuple having the key value(s) you entered in the form.
U	Update the data in the tuple having the key value(s) you entered in the form.
D	Delete the tuple from the database which has the key value(s) you entered in the form.
QR	Review all records matching particular search criteria one by one on the screen.
QU	Review all records matching particular search criteria and update one of the records.
QD	Review all records matching particular search criteria and delete one of the records.

The I, R, U, and D operations require that you enter values for the key of the form so that a single entry in the database can be retrieved. If the information is insufficient to identify a single entry in the database, the operation will fail.

Use the QR, QU, and QD operations to search for records matching a particular search criterion which yields one or more entries from the database. You may scroll through the matching entries to view, update, or delete selected records. These query operations are limited to a maximum of 2000 matching records for a query on a PostGreSQL. If a query yields more than the maximal matches, the following message will display:

```
Too many records found, enter a single table key.
```


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This indicates that more information is needed to narrow the search to a smaller number of matching records.

Note that the QR, QU, and QD operations work similarly to the R, U, and D operations except for the following:

- QR, QU, and QD allow any one or more fields to be entered for query search, including non-key fields. When matching records are found, the first matching record will be displayed. You may request the next matching record or previous matching record by entering **n** (for Next record) or **f** (for Former record) at the following prompt:

  ```
  Enter Review, Next, Former, Change-insert, Validate, Screen#, or Print:
  ```

- In the QR, QD, or QU operations, start the query operation by entering an asterisk (*), which will retrieve all records in the database. A dollar sign ($) will skip to the end of the form.
- If you execute QR, QD, or QU operations on a blank form, the query will search all records. **n** or **f** will scan all records. But the constraint of a maximum of 2000 matching records for PostGreSQL still applies.
- There is no QI (Query Insert) operation, as the INSERT operation requires that the record does not exist. However, by using QR, you can retrieve an existing record and then use Change-Insert to modify it and create a new record.
- When one or more records display during a QR, QD, or QU operation, a one-line message indicating the position of the record currently displayed among all the records retrieved will display at the top of the screen. This message displays in one of two formats:

  ```
  Record xxx/yyy
  ```

  or

  ```
  Detail Record xxx/yyy for Master Record mmm/nnn
  ```

  In the Record format, xxx is a record counter (1, 2, ...) and yyy is the number of records retrieved. The Detail Record format applies only to the SLL SPA forms. In the Detail Record format, xxx and mmm are record counters (1, 2, ...) while yyy and nnn are numbers of records retrieved. The Detail Record format applies to SPA data only. Use the Detail Record format when SPA data is stored in the database as a table of master records (tuples), where each master record has an associated sub-table of detail records (which may be empty). In this case each record that displays is a combination of a master record and one of its associated detail records. Also, the maximum of 2000 matching records applies separately to master records and to the detail records associated with each master record; up to 2000 detail records can be matched for each master record.

Important! If a master record has no associated detail records, nothing displays that correspond to that master record (it is skipped).

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7.7.5 Form command line operations

When you have entered values for all fields in a form, the system will display a prompt at the bottom of the page requesting that you perform an operation. The following table defines these operations. Forms display operations dynamically, depending on whether you are entering a new record or updating or deleting an existing one. For example, if the data operation is update or delete, Update or Delete will be displayed instead of Insert.

Table 7-2 Form command line operations

Operation	Description
Insert	The INSERT operation sends the entered data to the form's corresponding subsystem process and inserts the new record into the database.
Change	Use the CHANGE operation to modify existing data records. Only one field at a time can be modified by this operation. For more editing flexibility, use the Edit mode.
Edit	The Edit mode operation gives you the basic line-editing functions of the vi editor. Type **e** and press **Return** and you will get the `Edit field:` prompt. Enter the field number at the prompt and press the **Return** key to go to the field to be modified using the line-editing functions of the vi editor. The most important functions are summarized here. Other line-editing functions are explained in the documentation for the vi editor. • **0**: move to start of line • **$**: move to end of line • **b**: move left one word • **w**: move right one word • **h**: move left one space • **l**: move right one space • **a** <text to insert> then **Esc**: append text • **i** <text to insert> then **Esc**: insert text • **Esc**, then **!** exit Edit mode. Go to the next field to change by specifying its field number and pressing **Return**. When all the changes to the fields are complete and you are ready to commit the changes, press **Return** at the `Edit field:` prompt to go back to the initial form command line.
Validate	The Validate operation checks the entered fields to see if the values are valid. Values can be checked against any of the following criteria: • correctness of the data type • range values for the specified value • comparison of the specified value against an enumerated list of acceptable values

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Table 7-2 Form command line operations (continued)

Operation	Description
Print	The Print operation sends the data entered on the form to a log file or a printer. The record is printed when you exit the RC/V system.

7.7.6 Error messages

If you enter an incorrect value, an error message displays at the lower left side of the screen, and the cursor remains on the input line for that field.

7.7.7 Getting help

At any location, enter a **?** to display a help page that summarizes the entry options for that screen. Press **Return** to exit the help page, or press **>** to view the next page (if there is one).

7.7.8 Using a command string

If you already know the menu selections you will make at more than one level, you may combine them into a command string. Command options may be combined all the way from the main menu through a submenu path to a form, or through any portion of the path.

For example, at the main menu you can enter **`2.4i`**

This command string yields the same result as the following three separate operations:

- select submenu 2 from the main menu
- select view number 4 from submenu 2
- select insert from view number 4.

Important! View names may not be combined with form database operations. Only view numbers may be used in a command string if a database operation (for example, insert) is part of the command string.

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7.8 Understanding the types of menu mode form commands

7.8.1 Description

Once you have selected a database mode and the form displays on the screen, a set of commands are available for entering or changing database data. These form commands can be executed by typing in one of a set of non-alphanumeric characters.

7.8.2 Menu mode form command categories

Menu mode form commands fall into three following categories:

- input commands
- navigational commands
- informational commands

7.8.3 Input commands

The following table defines the menu mode input commands and the symbols you use to invoke them. You use these commands to add or change database data.

Table 7-3 Input commands

Command	Symbol	This command...
default	~	sets the atomic field to the default value.
null item	`	sets the atomic field to the null value.

7.8.4 Navigational commands

The following table defines the menu mode navigational commands. You use these commands to move through the ODIN menu interface. You can make movements within a form, or to the menu above that form's level, or back to the command level where you invoked the menu mode.

Table 7-4 Navigational commands

Command	Symbol	This command...
back tab	<	backs up to the previous tab stop or prompt. (If you enter this command in the first field of the form, you will exit the form.)
back up		backs up to the previous field or prompt.
forward tab	>	skips forward to the next tab stop.

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Table 7-4 Navigational commands (continued)

Command	Symbol	This command...
end of list	ctrl-l	skips to the end of the list. The cursor moves to the next field after the current list.
end of form	$	skips to the end of the form. The current field remains unchanged. The cursor moves to the FORM operation prompt on the command line at the bottom of the screen.
escape to shell	/	escapes to allow you to perform shell commands.
execute	*	skips to the end of the form and lets you perform the FORM operation.
abort	!	aborts this operation. The result of this command depends on where you are when you execute it.
next record	)	brings the next record to the screen after a successful query.
previous record	(	brings the previous record to the screen after a successful query.

7.8.5 Informational commands

The following table defines the menu mode informational commands. You may invoke these commands at any time. Your current location within the menu interface and the database are not affected by these commands.

Table 7-5 Informational commands

Command	Symbol	This command...
help messages	%	turns the message display on or off. The cursor returns to the current field.

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Table 7-5 Informational commands (continued)

Command	Symbol	This command...
current mode	.	displays the current database operation mode. The current database operation mode displays in the acknowledgment area, and the cursor returns to the current field.
help page	?	displays help for the current screen.

7.8.6 Input command characters as field value

Sometimes it is necessary to input a form command character or a string that starts with a command character as the value of a field. In this case, enter space character first. For example, to input "**`*`**" or "**`*.txt`**" as the value of a field, you need to input " **`*`**" or " **`*.tx`**t" to do it. After you hit return, the form will then put "**`*`**" or "**`*.txt`**" on the field as its value.

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7.9 Updating a multi-line field

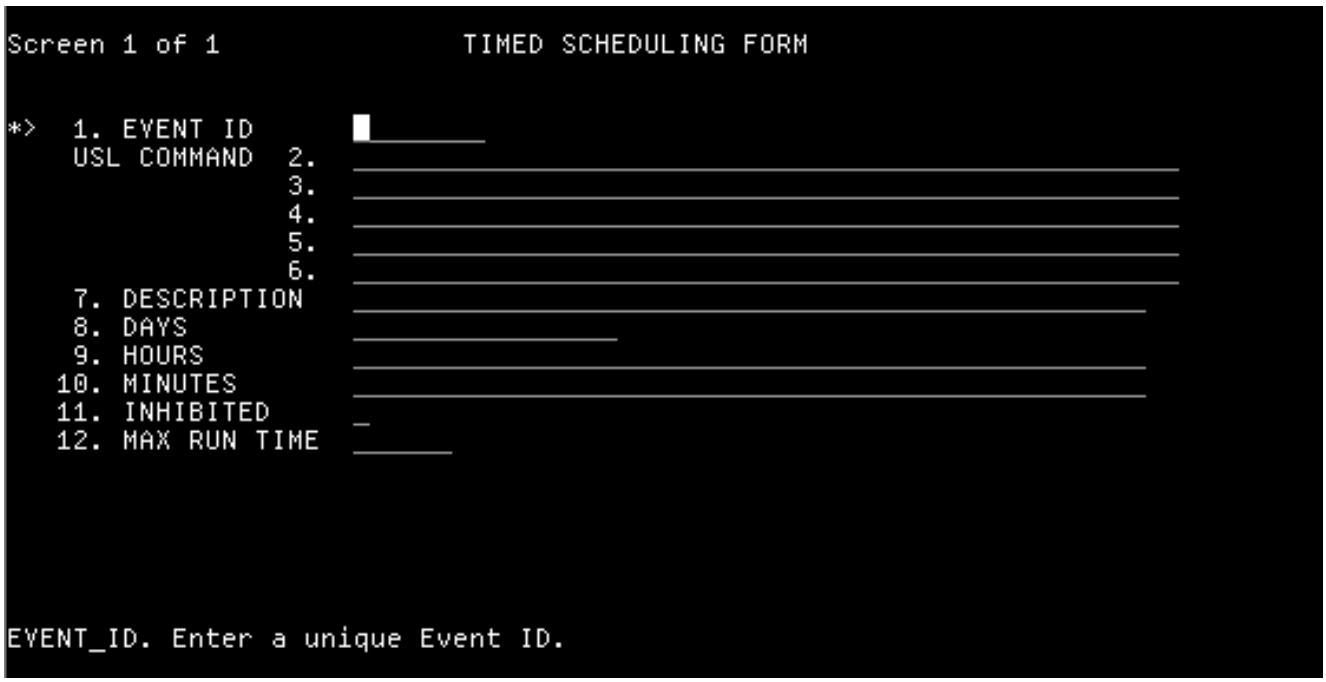
7.9.1 Description

Some fields of a form can contain a string of input that is longer than 80 characters in length. In this case, the form field has more than one line. Using the TIMED SCHEDULING FORM for an example, the USL COMMAND field, which can be as long as 250 characters in length, has 5 lines with each line being 50 charaters in length. Internally to the form each line is numbered for convenience and the number of each data line is given explicitly for all platform forms whose fields have mutiple data lines.

7.9.2 Illustration

The following illustrates The TIMED SCHEDULING FORM as an example of a form with a multiple line field.

Figure 7-1 Example Form with Multi-line Field



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7.10 Example procedure for updating a Multi-line field

7.10.1 Overview

The USL COMMAND field's five lines are numbered `2`, `3`, `4`, `5` and `6`, respectively. When populating those lines, they act like other one-line fields during the INSERT operation. That is, press **Return** to go to the next data line when the current line is fully entered. For the UPDATE operation, however, it procedurally requires line-by-line updates in the same way as different form fields are updated. For example, if the USL COMMAND field of the example form in the above illustration has two data lines populated with data and the update requires modifying both lines, the following steps must be executed:

7.10.2 Steps

1

Enter **u** or **qu** at the data operation prompt after the form is selected.

2

When the form displays, type in the key/query criteria to query the database and display the record.

3

Enter **e** (Edit) or **c** (Change) to modify the form.

4

Enter **2** at the `Edit field:` or `Change field:` prompt to go to the first line of the USL COMMAND field for modification.

5

Make the change to the line.

6

Exit the line (**`Esc`** and then **`!`** if using "Edit" or *Return* if using "Change")

7

Repeat steps 4 through 6 for lines `3` through `6` of the USL COMMAND field.

8

Press **Return** at the `Edit field:` or`Change field:` prompt.

9

Enter **u**, then **Return** to update the changes.

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10

You will see `FORM UPDATED` in the upper right side of the form if the update succeeds. Otherwise, an error message is displayed in the lower left side.

Important! With multi-line fields, you must make sure that there is no unwanted space between two continuous lines. If you start the second line without completely filling in the first line, ODIN assumes that you purposely want to have some space before the first character populated on the second line and therefore will fill in the rest of the first line with spaces before it appends the second line to the end of the first line.

End of steps

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7.11 Database Operations

7.11.1 Description

Most of the operations performed using the RC/V system involve entering new data or modifying existing data. It sometimes also involves deleting a record. These are the main database operations performed through RC/V.

7.11.2 Committing data change

ODIN forms insert, update or delete records one at a time to make sure that subsystem processes and Oracle keep data in sync and that no invalid record causes failure to commit of other good records as opposed to committing more than one record at a time.

7.11.3 Entering new data

If you need to enter an entirely new record of data, no database operations are required until the fields on the form are completed. However, there are some limits that apply to entering data, to help ensure that only valid data is stored in the database.

7.11.4 Key fields

Every RC/V form has one or more key fields. Key fields are unique identifiers for the record and are the main way the database keeps track of data. The key fields are always completed, and the RC/V system does not allow skipping past them without entering valid data. The first key field is marked with `*>` and second and following key fields, if any, are marked with an asterisk (*).

7.11.5 Population rules

Most data fields, whether they are key fields or not, have rules limiting the kinds of data they will accept.

These population rules include:

- Rules about the type of data (for example, character, numeric, or alphanumeric) that can be entered. These rules are defined for each field in the procedures in this document
- Restrictions governing the maximum number of characters that can be entered. The number of characters is defined for each field in the procedures in this document.
- Limits about possible values for a field (for example, Y for Yes, or N for No). If included, these are defined for each field in the procedures in this document.
- Restrictions governing a range of values for numeric data (for example, numbers ranging from 0 through 255). If applicable, ranges are defined for each field in the procedures in this document. The message line usually displays information about the population rules governing the current field.

7.11.6 Modifying existing data

Occasionally you must modify one or more fields of an existing record. To modify a field, select the `U` or `QU` database operation to retrieve the record and then modify it.

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Important! If a system user queries a record and tries to update it, and between the retrieval and update, another system user updates the same record, then the first system user's update will fail with "No tuples found" error message. This non-coordinated behavior should be prohibited in practice to guarantee the validity of platform data.

7.11.7 Special characters that cannot be used as field values

The ODIN RC/V system internally uses three characters 1/4, 1/2 and 3/4 (ASCII code '/274', '/275' and '/276') as the message field separators for AINETDB. Therefore, provisioning of a form field that has any of the three special characters in its value will cause the data operation to fail as AINETDB will stop working correctly in this case.

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7.12 Retrieving a Record

7.12.1 Purpose

Follow the steps in this procedure to retrieve a specific record.

7.12.2 Steps

1

Enter the form's Selection number (i.e., view#) or its full name from Category (i.e., view name) at the submenu's command prompt. Example:

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen):
->_____________________________________________
```

2

Press **Return** and you will be prompted for an operation command something like:

`Enter Database Operation I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD` :

Important! The exact look of the above prompt may vary depending on if some data operations are disabled from the form. If one or more data operations of INSERT, UPDATE, and DELETE are disabled, you will see an informational message saying that the permission(s) for the operation(s) has been denied and the above prompt shows you only those allowed.

3

Type **`r`** and press **Return**.

Result: The form displays with the cursor being positioned at the beginning of the first field. The first field is always the key field marked with `*>` if the form has one or more keys.

4

Enter appropriate values in all the key fields for this form. Key fields are marked with an asterisk (*).

5

Press **Return** and the data associated with the values specified in Step 4 displays along with the following command prompt in the bottom:

```
Enter Review, Change-insert, Validate, or Print:
```

6

You can now perform one of the operations prompted or go back to the submenu.

END OF STEPS

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7.13 Retrieving a set of records

7.13.1 Purpose

If you are not sure which record needs modification, or if all of the records associated with a particular form must be viewed, you can query for an entire set of records. Follow the steps in this procedure to retrieve a set of records.

7.13.2 Steps

1

Enter the form's Selection number (i.e., view#) or its full name from Category (i.e., view name) at the submenu's command prompt. Example:

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen):
->_____________________________________________
```

2

Press **Return** and you'll be prompted for an operation command something like:

`Enter Database Operation I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD` :

Important! The exact look of the above prompt may vary depending on if some data operations are disabled from the form. If one or more data operations of INSERT, UPDATE, and DELETE are disabled, you'll see an informational message saying that the permission(s) for the operation(s) has been denied and the above prompt shows you only those allowed.

3

Type **`qr`** and press **Return**.

Important! If a form has only one record, the form may not have the **`QR`** data operation available. In this case, just enter **`r`** (for Review) instead and press **Return**, and the form will display that record.

Result: The form displays with the cursor being positioned at the beginning of the first field. The first field is always the key field marked with

```
*>_____________________________________________
```

4

Press **Return** and you'll be prompted for an operation command something like:

`Enter Database Operation I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD` :

Important! The exact look of the above prompt may vary depending on if some data operations are disabled from the form. If one or more data operations of INSERT,

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UPDATE, and DELETE are disabled, you'll see an informational message saying that the permission(s) for the operation(s) has been denied and the above prompt shows you only those allowed.

5

Type `i` and press **Return**.

Result: The form displays with the cursor being positioned at the beginning of the first field. The first field is always the key field marked with `*>` if the form has one or more keys.

6

Enter the value for the field and press **Return** to go to the next field.

7

Repeat Step 4 as many times as necessary until you've populated the last field.

Important! You can skip a field that can be optionally left empty or that has a default value by pressing **Return**. However, if a field is required and has no default value, you must populate the field with a value before you are allowed to go to the next field. Also, before the last field, you can use the up or down arrow key to navigate through the fields and change any field value or populate a field that has been left empty.

8

Press **Return** after the last field is populated.

Important! You can abort the insert operation at any time from Step 3 to Step 6 by executing the `!` command and pressing **Return**. An `INSERT ABORTED` message will display in the upper right side of the form.

Result: The following prompt appears:

```
Enter Insert, Change, Edit, Validate, or Print:
```

9

Type `i` at the command prompt and press **Return** to send the new record to the subsystem process and insert it into the database.

Result: If the `FORM INSERTED` message displays in the upper right side of the form, you have successfully inserted the record. You can start another data operation or go back to the submenu using the **<** command.

If the insert does not succeed, the lower left side of the form will display a message to indicate one or more errors have occurred leading to the failure. Press **Return** to view the error(s). Use CHANGE or EDIT command described in Table 7-2, “Form command line operations” (p. 835) to make the necessary change(s) and then redo Step 7, or you can abort the insert operation.

END OF STEPS

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7.14 Updating a record

7.14.1 Purpose

When you need to update an existing record, follow the steps in this procedure.

7.14.2 Steps

1

Enter the form's Selection number (i.e., view#) or its full name from Category (i.e., view name) at the submenu's command prompt. Example:

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen):
->_____________________________________________
```

2

Press **Return** and you will be prompted for an operation command something like:

`Enter Database Operation I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD` :

Important! The exact look of the above prompt may vary depending on if some data operations are disabled from the form. If one or more data operations of INSERT, UPDATE, and DELETE are disabled, you will see an informational message saying that the permission(s) for the operation(s) has been denied and the above prompt shows you only those allowed.

3

Type **`u`** (for Update a record) and press **Return** if you know which record to update. Type **`qu`** (for QueryU) and press **Return** if you are not sure which record needs updating or if you do not remember the key value(s) of the record to be updated.

Result: The cursor is now positioned at the beginning of the first field of the form.

4

Enter appropriate values in the key fields for this form and press **Return** if the data operation you entered in the last step is `D`. Or follow Step 4 of 7.13 “Retrieving a set of records” (p. 846) to query all or a desired set of records if you entered `QD` for the data operation in the previous step.

Important! A `FORM NOT FOUND` message displays in the upper right side of the form if no record was retrieved.

Result: The record displays with the following prompt if your data operation is **`U`**. If your data operation is **`QU`**, the first of all or the desired set of records displays with a top line also indicating the number of records resulting from the query.

```
Enter Update, Change, Next, Former, Edit, Validate, or Print:
```

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5

If the data operation you specified in Step 3 is `QU` and if Step 4 resulted in multiple records being retrieved and if the first record is not the one to be modified, type **`N`** (for Next record) or **`F`** (for former record) at the command prompt and press **Return** to view the next record. Repeat this step as many times as necessary to find the desired record to update.

6

Type **`c`** (for Change field) or **`e`** (for Edit field) at the command prompt and press **Return**.

Result: The following prompt appears:

`Change field:` or `Edit field:`

7

The form fields are numbered sequentially starting with 1 for the first field. Enter the number of the field you want to make changes.

Result: The cursor is positioned at the beginning of the selected field.

8

Make the change to the field following the description of CHANGE or EDIT in Table 7-2, “Form command line operations” (p. 835). Repeat this step as many times as necessary until you have modified all fields that are to be changed. Then press **Return** at the `Change field:` or `Edit field:` to go back to the initial form command line.

Important! You can abort the update operation at any time from Step 3 to Step 8 by executing the **`!`** command and pressing **Return**. After you choose to do so, an `UPDATE ABORTED` message will display in the upper right side of the form.

9

Type **`u`** at the command prompt and press **Return** to update the record changes in the subsystem process and the database. If the `FORM UPDATED` message displays in the upper right side of the form, you have successfully updated the record. You can start another data operation or go back to the submenu using the **<** command.

If the update does not succeed, an error message displays in the lower left side of the form. Return to Step 6 and correct any changes that are necessary, or you can abort the update operation using the **`!`** command.

END OF STEPS

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7.15 Deleting a record

7.15.1 Purpose

When it is necessary to delete an existing record, follow the steps in this procedure.

7.15.2 Steps

1

Enter the form's Selection number (i.e., view#) or its full name from Category (i.e., view name) at the submenu's command prompt. Example:

```
Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next
screen):
->_____________________________________________
```

2

Press **Return** and you'll be prompted for an operation command something like:

`Enter Database Operation I=Insert R=Review U=Update D=Delete QR=QueryR QU=QueryU QD=QueryD` :

Important! The exact look of the above prompt may vary depending on if some data operations are disabled from the form. If one or more data operations of INSERT, UPDATE, and DELETE are disabled, you'll see an informational message saying that the permission(s) for the operation(s) has been denied and the above prompt shows you only those allowed.

3

Type **`d`** (for Delete a record) and press **Return** if you know which record to delete. Or type **`qd`** (for QueryD) and press **Return** if you are not sure which record to be delete or if don't remember the key value(s) of the record to delete.

Result: The cursor is positioned at the beginning of the first field of the form.

4

Enter appropriate values in the key fields for this form and press **Return** if the data operation you entered in the last step is `D`. Or follow Step 4 of 7.13 “Retrieving a set of records” (p. 846) to query all or a desired set of records if you entered `QD` for the data operation in the previous step.

Important! A `FORM NOT FOUND` message displays in the upper right side of the form if no record was retrieved.

Result: The record displays with the following prompt if your data operation is `D`. If your data operation is `QD`, the first of all or the selected set of records displays with a top line also indicating the number of records resulting from the query.

```
Enter Delete, Next, Former, Validate, or Print:
```

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5

If the data operation you specified in Step 3 is QD and if Step 4 resulted in multiple records being retrieved and if the first record is not the one to be modified, type **n** (for Next record) at the command prompt and press **Return** to view the next record. Repeat this step as many times as necessary to find the desired record to delete.

Important! You can abort the delete operation at any time in the previous step and this step by executing the **!** command and pressing **Return**. If you choose to do so, a DELETE ABORTED message will display in the upper right side of the form.

6

Type **d** at the command prompt and press **Return** to delete the record from the subsystem process and the database.

If the FORM DELETED message displays in the upper right side of the form, you have successfully deleted the record. You can start another data operation or go back to the submenu using the **<** command.

If the delete does not succeed, the error message displays in the lower left side of the form. Abort the delete operation using the **!** command and go back to the submenu using the **<** command. Take actions necessary to correct the error and repeat the above steps for the delete.

END OF STEPS

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Updating RC/V SPA data

7.16 Overview

7.16.1 Purpose

This section focuses on accessing SPA-related data. To access SPA-related data, you must use either the RCV:MENU,SPA; command or the RCV:TEXT,SPA; command. The RCV:MENU,SPA; command accesses SPA-related data in menu mode, while the RCV:TEXT,SPA; command accesses SPA-related data in text mode.

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7.17 What are text commands?

7.17.1 Description

A text command is composed of operations, control characters, and data names and values. You enter text commands at the text mode prompt (>). After you execute a text command, the system responds with one of the following:

- an acknowledgment
- an error
- a warning
- information (if information has been requested correctly and is available)

Operations and control characters are limited in number. Refer to the 7.18 “Summary of operations that are part of text commands” (p. 854) and the 7.19 “Summary of control characters that are part of text commands” (p. 857) sections for information. Data and values are variable, and the rules governing their use are dependent on several factors, some of which are site-specific. Refer to the 7.22 “Updating simple data fields” (p. 864) and the 7.23 “Operations used to update complex data fields” (p. 866) sections for information.

7.17.2 Text command syntax

The following rules apply when entering text commands:

- You may terminate text commands with either CR or LF, optionally preceded by the exclamation point (!), or with a comma followed by the next command. The exclamation point is not needed, but will be accepted to maintain compatibility with prior releases and with the 5ESS RC/V text format. The only exception to the use of the exclamation point to end a line is the END operation, which you terminate with a semicolon (;) followed by either CR or LF. If you supply multiple commands on a line, a comma must be used to separate them.
- Text commands may contain white space characters between words and delimiter, but not in the middle of a command name or a field name. If a value contains spaces, it must be enclosed in double quotes (").
- You may enter a comment wherever you can use white space.

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7.18 Summary of operations that are part of text commands

7.18.1 Description

You combine text mode operations with control characters and variables to construct syntactically correct text commands. This section defines the available text mode operations.

7.18.2 Summary of text mode operations

The following table summarizes the available text mode operations.

Table 7-6 Text mode operations used in text commands

Operation	Purpose
DEVICE	Specifies where output from an ATTR or VFY operation is directed. Refer to the 7.20.2 “The DEVICE operation” (p. 858) section for information.
FIELDNAMES	Names used in name/value pairs are SEDL field names. Refer to the 7.20.3 “The FIELDNAMES operation” (p. 858) section for information.
MASKNAMES	Names used in name/value pairs are maskfile names (default condition). Refer to the 7.20.4 “The MASKNAMES operation” (p. 858) section for information.
ECHO	As each input line is read, print it to the output response stream. Refer to the 7.20.5 “The ECHO operation” (p. 859) section for information.
NOECHO	Read each input line silently (default condition). Refer to the 7.20.6 “The NOECHO operation” (p. 859) section for information.
ERRECHO	Print the current input line when an error is encountered (default condition for permanent process). Refer to the 7.20.7 “The ERRECHO operation” (p. 859) section for information.
NOERRECHO	Do not print the current input line when an error is encountered (default condition for CEP). Refer to the 7.20.8 “The NOERRECHO operation” (p. 859) section for information.
FRC	Enables the forcing of inserts into updates, and updates into inserts. Refer to the 7.20.11 “The FRC operation” (p. 860) section for information.
NOFRC	Disables the forcing of inserts into updates, and updates into inserts. Refer to the 7.20.12 “The NOFRC operation” (p. 860) section for information.
FORM	Specifies a form on which to perform an operation. Refer to the 7.21.2 “The FORM operation” (p. 862) section for information.
SAMEFORM	Allows the user to specify that the name of a form for an operation is the same as
VFYNMVAL	Specifies the name value mode when displaying verified data. Refer to the 7.20.15 “The VFYNMVAL operation” (p. 860) section for information.

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Table 7-6 Text mode operations used in text commands (continued)

Operation	Purpose
VFYSCIMG	Specifies screen image mode when displaying verified data. Refer to the 7.20.16 "The VFYSCIMG operation" (p. 861) section for information.
VERBOSE	Send summary messages to the ROP about the database operations performed. Refer to the 7.20.13 "The VERBOSE operation" (p. 860) section for information.
NVERBOSE	Disable VERBOSE output to the ROP. Refer to the 7.20.14 "The NVERBOSE operation" (p. 860) section for information.
NEW	Inserts a new form. Refer to the 7.24.2 "The NEW operation" (p. 870) section for information.
CHG	Modifies data of an existing form. Refer to the 7.24.3 "The CHG operation" (p. 870) section for information.
OUT	Removes a form from the database. Refer to the 7.24.4 "The OUT operation" (p. 870) section for information.
SET	Assigns a value to a field. Refer to the 7.23.3 "Using the SET operation to assign values to structured data" (p. 866) and the 7.23.5 "Using the SET operation to assign values to list data" (p. 867) sections for information.
LNEW	Inserts list data into a new form. Refer to the 7.23.7 "The LNEW operation" (p. 867) section for information.
LCHG	Modifies list data of an existing form. Refer to the 7.23.8 "The LCHG operation" (p. 868) section for information.
LOUT	Removes list data from the database. Refer to the 7.23.9 "The LOUT operation" (p. 868) section for information.
REPEAT	Marks the end of a request. Refer to the 7.25.2 "The REPEAT operation" (p. 871) section for information.
BREAK	Indicates that the preceding request ended without committing that request. Refer to the 7.25.3 "The BREAK operation" (p. 871) section for information.
GETDATA	Requests the retrieval of a record. Refer to the 7.23.10 "The GETDATA operation" (p. 869) section for information.
MARK	Inserts specified text string into output stream. Refer to the 7.26.4 "The MARK operation" (p. 874) section for information.
VFY	Verifies (views) the contents of a previously specified form. Refer to the 7.26.2 "The VFY operation" (p. 873) section for information.
ATTR	Lists fields contained in a form. Refer to the 7.26.3 "The ATTR operation" (p. 873) section for information.
MSG	Displays the text of a message. Refer to the 7.27.5 "The MSG operation" (p. 875) section for information.

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Table 7-6 Text mode operations used in text commands (continued)

Operation	Purpose
IGN	Ignores warning messages. Refer to the 7.27.6 “The IGN operation” (p. 877) section for information.
HELP	Displays the contents of the RC/V text help file. The ? character is a synonym for this operation. This operation is not accepted during a non-interactive (permanent process) session. Refer to the 7.26.5 “The HELP operation” (p. 874) section for information.
END	Quits the current RC/V text session. Refer to the 7.28.3 “The END operation” (p. 878) section for information.
ABORTFORM	Quits the current form. Refer to the 7.28.2 “The ABORTFORM operation” (p. 878) section for information.

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7.19 Summary of control characters that are part of text commands

7.19.1 Description

You combine text mode operations with control characters and variables to construct syntactically correct text commands. This section defines the text mode control characters.

7.19.2 Summary of text mode control characters

The following table summarizes the text mode control characters.

Table 7-7 Text mode control characters used in text commands

Control character	Function
!	This symbol is carried over from 5ESS (US) RC/V Text language which IN RC/V Text language is based upon. In 5ESS, this character continues input messages across multiple lines. In the platform, it serves no real purpose other than to maintain the consistency in look and feel between the systems. The examples in this document will use this character to maintain this consistency, but it can be omitted if desired.
=	This equal sign separates the field name from its value.
,	The comma separates a particular name value pair from another field's name value pair.
" "	Double quotes allow RC/V text users to input special (that is, non alphanumeric) characters.
&	The ampersand separates the form name (when specified with the FORM operator) from the operation to be performed on the data.
-	The hyphen separates list range delimiters when lists are specified.
;	The semicolon, used in conjunction with the END operator, terminates input.
/*	The /* symbols are used to start a comment. The string */ must be used to end a comment.
?	Enter a question mark to bring up system help.

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7.20 Operations used to set session parameters

7.20.1 Description

You have control over the display of verified data, the destination of output, and several other session parameters. You must set session parameters before you invoke the FORM operation.

Use the following operations to set session parameters:

- the DEVICE operation
- the FIELDNAMES and MASKNAMES operations
- the ECHO and NOECHO operations
- the ERRECHO and NOERRECHO operations
- the LINENOS and NOLINENOS operations
- the FRC and NOFRC operations
- the VERBOSE and NVERBOSE operations
- the VFYNMVAL and VFYSCIMG operations

7.20.2 The DEVICE operation

The DEVICE operation specifies the output destination of a VFY or ATTR operation. The syntax for the DEVICE operation is as follows:

```
DEVICE=devicename!
```

The device name, indicated by **devicename**, is required and can be a file name, a message class, or can default to the value of the standard output destination, which may be any of the following:

- **PRINTER** sends output to the read-only printer (ROP).
- **STDOUT** sends output to the standard output destination, which is usually the terminal screen. You may specify other terminals.
- **"<filename>"** sends output to a specific file. Note that the name of the file must be enclosed in double quotes. Example: **DEVICE="/tmp/errors.out"!**

7.20.3 The FIELDNAMES operation

Each field in a database table has an internal name that is used by the SEDL compiler. These field names are referred to as the SEDL names. The FIELDNAMES operation instructs the RC/V text parser to expect the SEDL names to be used for the names of the fields in the input text stream. The syntax for the FIELDNAMES operation is as follows:

```
FIELDNAMES!
```

7.20.4 The MASKNAMES operation

When a form is designed for display, each displayed field in that form is referred to by the name located in the mask file for that form. The MASKNAMES operation instructs the RC/V text parser to expect names from the mask file for the names of the fields in the input text stream. This is the default mode of operation. The syntax for the MASKNAMES operation is as follows:

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MASKNAMES!

Because the SLL compiler generates the form files, these mask names are the same names used in the SLL compiler.

7.20.5 The ECHO operation

The ECHO operation requests the printing of each line as it is read from the input stream. The printing occurs before any processing is done on the line. The syntax for the ECHO operation is as follows:

ECHO!

7.20.6 The NOECHO operation

The NOECHO operation requests each input line to be read silently, with no printing of the input lines. It can be used to turn off the effects of an ECHO operation. This is the default mode of operation. The syntax for the NOECHO operation is as follows:

NOECHO!

7.20.7 The ERRECHO operation

The ERRECHO operation requests that the current input line be printed when an error occurs. You do not need to use this operation for a CEP, as input is being entered interactively. However, this operation can be a valuable aid when tracking data coming from an Enhanced Services Manager (eSM) via the ASI subsystem, or any time the RC/V transaction is being executed by way of an I/O redirection. The syntax for the ERRECHO operation is as follows:

ERRECHO!

7.20.8 The NOERRECHO operation

The NOERRECHO operation requests that printing of the current line when an error occurs be suppressed. The syntax for the NOERRECHO operation is as follows:

NOERRECHO!

7.20.9 The LINENOS operation

The LINENOS operation requests the start or resumption of line number reports to the output stream. Line counting is done continuously, so a line number report will provide the number of the input line relative to the beginning of the input stream. Any messages generated by the processing of that input line will appear in the output stream after the line number report. The report displays the output line of the form as follows: `Line n`. The syntax for the LINENOS operation is as follows:

LINENOS!

7.20.10 The NOLINENOS operation

The NOLINENOS operation requests the suppression of line number reports in the output stream. This is the default mode of operation. The line numbers will continue to accumulate, but no report displays in the output stream. The syntax for the NOLINENOS operation is as follows:

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NOLINENOS!

7.20.11 The FRC operation

Under certain conditions, you may have to recover from errors of attempting to add a new record into an already existing key (inserting when you should have been updating), or of attempting to update a record that has not yet been created (updating when you should have been inserting). Typically, such errors cause the request to fail. However, you can use the FRC operation to allow inserts to be converted to updates, and updates to be converted to inserts. The syntax for the FRC operation is as follows:

FRC!

7.20.12 The NOFRC operation

The NOFRC operation suspends recovery from errors that cause insert or update requests to fail. This is the default mode of operation. The syntax for the NOFRC operation is as follows:

NOFRC!

7.20.13 The VERBOSE operation

The VERBOSE operation allows you to send summary messages to the ROP about the database operations you have performed. The output messages are directed to the RCSUMMARY message class. The syntax for the VERBOSE operation is as follows:

VERBOSE!

7.20.14 The NVERBOSE operation

The NVERBOSE operation disables VERBOSE output to the ROP. This is the default operation. The syntax for the NVERBOSE operation is as follows:

NVERBOSE!

7.20.15 The VFYNMVAL operation

The VFYNMVAL operation displays information in the name value format. In this format, only the names of the fields and their current values display. The names and values are listed in order, separated by an equal (=) sign, as in the following example:

```
SSN=125
ROUTESCH=S7SCH
ROUTETYP=RK
RMINTERVAL=100
RMMAXCALL=100
```

Example display declaration

The following example shows the display declaration followed by a verify request for a specific record in the SPA_EXAMPLE_2 form.

```
VFYNMVAL!
```

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```
FORM = SPA_EXAMPLE_2&VFY
SSN = 125
VFY!
```

7.20.16 The VFYSCIMG operation

The VFYSCIMG operation displays the output from the preceding example in a format similar to **RCV:MENU,SPA** screen output. This is the default format.

This format provides the following information that is not available when using the name value format:

- the name of the form being displayed
- the page number of that form
- the field number for all fields
- the key field
- the maximum size of the field

The following example shows how the output in the VFYNMVAL example would display in screen image format:

```
*1) SSN 125
2) ROUTESCH S7SCH_______
3) ROUTETYP RK__________
4) RMINTERVAL 100__
5) RMMAXCALL 100___
```

Note that an RC/V session starts in the VFYSCIMG mode.

Important! You can use the VFYNMVAL operation with both the ATTR and VFY operations. The VFYSCIMG option is ignored when you use the ATTR operation.

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7.21 Operations used to retrieve a form

7.21.1 Description

Once you have set the session parameters, you need to retrieve the form containing the fields you wish to update or verify. To do this, use either the FORM operation or the SAMEFORM operation.

7.21.2 The FORM operation

The FORM operation specifies the name of an ODIN form. This is usually a prerequisite for performing most other text mode operations. You can specify the form name by itself, or with an operation to be performed. The syntax for the FORM operation is as follows:

`FORM=formname & opname!`

The form name, indicated by **`formname`**, must refer to a form whose content can be displayed and updated in either **`RCV:TEXT,SPA`** or **`RCV:MENU,SPA`** mode. To find the names of the forms and the fields on each form, examine the SPA files for file names ending in the *.fi* suffix. The name of the file (excluding the *.fi* suffix) is the name of the form. The fields contained in the form are listed in the corresponding *.fi* file.

The required operation, indicated by **`opname`**, may be any of the following:

- **`NEW`** enters data if the form does not yet exist.
- **`CHG`** modifies data if the form does exist.
- **`OUT`** deletes existing data.
- **`ATTR`** displays the field names of a form, but not the data they contain.
- **`VFY`** displays the data without changing it.

Refer to 7.24 “Operations used to commit changes to the database” (p. 870) for descriptive information on these operations.

Important! The *.sym* file contains table names. The names of the tables in which data is stored in the database are similar to form names. However, table names may not be used as form names, because a form may refer to more than one table, and a table may be distributed over several forms.

You can find default form names by looking in the *$SPDIR/sp/<spa_name>/forms/default* directory (where *<spa_name>* is the name of the SPA). For example, if you perform an **`RCV:TEXT,SPA`** operation using a table name with no corresponding *.fi* file, the operation will fail because there is no existing form of the same name.

7.21.3 The SAMEFORM operation

The SAMEFORM operation specifies that the name of an ODIN form for an operation to be performed is the same as that for the preceding operation, even though the operation to be performed may be different. This operation provides information to the RC/V text program that may result in more efficient operation of the program. The syntax for the SAMEFORM operation is as follows:

`SAMEFORM & opname!`

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The required operation, indicated by **opname**, may be any of the same operations defined in the 7.21.2 “The FORM operation” (p. 862) section.

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7.22 Updating simple data fields

7.22.1 Description

Simple data fields (also referred to as unstructured data fields) can contain only one piece of data. To update a simple data field, you assign it a value or a key. The syntax for this operation is as follows:

`fieldname [=fieldvalue]!`

where **`fieldname`** represents the name of the field whose data you are updating or verifying, and **`fieldvalue`** represents the value of the field.

If the field is a key, the **`fieldvalue`** is the value of the key in the desired record. If the field is not a key, the **`fieldvalue`** is the value you are assigning to that field in the record. If you do not specify the **`fieldvalue`**, the field is blank-filled.

7.22.2 Field value formats

You may specify field values using the following formats:

- An identifier such as a form name or field name may be composed of alpha characters (A-Z), numeric characters (0-9), and the underscore (_). The identifier must begin with an alpha character.
- A symbolic value must start with one or more numeric characters, followed by A-Z, _, +, #, or %, followed by one or more numeric characters. A non-numeric character followed by a numeric character can be repeated any number of times.
- You may enter a decimal number as a string of digits followed (optionally) by a decimal point and another string of digits. You may precede it with the **`D'`** character.
- You may enter a hexadecimal number as **`H'`**, followed by one or more numeric or alpha characters.
- You may enter an octal number as **`O'`** (the letter O), followed by one or more numeric characters in the range of 0-7.
- You may enter a binary number as **`B'`**, followed by one or more numeric characters in the range of 0-1.
- You may enter a keyed number (which you might do using MF signaling) as **`K'`**, followed by one or more numeric characters in the range of 0-9, *, #, and one or more alpha characters.
- Any other value you enter is considered general text, and must be surrounded by double quotes.

The following table provides examples of field value formats.

Table 7-8 Examples of field value formats

Format type	Example
identifier	SPA_EXAMPLE_1
symbolic	103A9_12
decimal	12.7

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Table 7-8 Examples of field value formats (continued)

Format type	Example
hexadecimal	H'A34F
octal	0'766
binary	B'0110001
keyed	K'708*9792000A
text	After 6pm

Important! A form name is a particular type of identifier that contains the name of a valid form or its number. If you specify a form number, you must enclose it in double quotes.

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7.23 Operations used to update complex data fields

7.23.1 Description

Complex data fields are composed of either structures or lists of data items. The purpose of these two data types is to group associated pieces of data into larger entities so that they can be stored together or referenced as a unit.

You may use the following operations to update complex data fields:

- SET: Use this to assign values to list data when you already know the row number. You also use this to assign values to elements of a structure.
- LNEW: Use this to specify an empty row where data can be inserted.
- LCHG: Use this to add or update data in an existing row that you located previously with the LNEW operation. You must enter all subfields of a row at the same time.
- LOUT: Use this to remove the contents of a row from a list.
- GETDATA: Use this to explicitly request the retrieval of a primary key's record before specifying a new value for the secondary key.

7.23.2 Structured data

Structured data is hierarchical. It contains subfields that are logically below the level of other fields. For example, if a data structure is required to store a mailing label address, it might contain one subfield for the name, another for the street address, and another for the city, state, and zip code. At its highest level, you might call this structured data type "Label," while its subfields might be called "Label.Name," "Label.Street," and "Label.City."

Access or reference each subfield by its full hierarchical name, which consists of the structure name and the subfield name, separated by a period (.).

7.23.3 Using the SET operation to assign values to structured data

Use the SET operation to assign values to structured data. The syntax for the SET operation with structured data is as follows:

SET="fieldname.subfieldname"[& subfieldvalue]	
fieldname	This represents the name of the field that contains the subfield whose data you wish to enter.
subfieldname	This specifies the name of the subfield whose data you want to enter.
subfieldvalue	This is optional. If you do not specify a subfieldvalue, the field will be blank-filled.

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7.23.4 List data

Like structured data, list data also contain subfields. Unlike structured data, however, list data subfields are numbered, and you can use their numbers to refer to them. Each numbered entry in the list is called a row. You must enter all subfields of a row must at the same time.

Use the SET operation to assign values to list data. The syntax for the SET operation with list data is as follows:

7.23.5 Using the SET operation to assign values to list data

SET="subfieldname[row]" [& subfieldvalue]!	
subfieldname	This specifies the name of the subfield whose data you want to enter.
row	This specifies the number of the row and is surrounded by brackets ([ ]).
subfieldvalue	This is optional. If you do not specify a subfieldvalue, the field will be blank-filled.

Important! The **subfieldname[row]** construct must be enclosed in double quotes.

7.23.6 Updating an unknown row

Using the SET operation requires that you know the row number where data will be added or modified. If you do not know the row number, however, you can use the LNEW and LCHG operations. For example, if you want to insert a new row of list data, use the LNEW operation to find an empty row, then use the LCHG operation to insert values in all other subfields.

To locate and modify data by a unique value within an existing row, use the LCHG operation.

7.23.7 The LNEW operation

Use the LNEW operation to add a new row to a list. The syntax for the LNEW operation is as follows:

LNEW="subfieldname"&"subfieldvalue"!	
subfieldname	This specifies the name of the subfield of the list that has the unique value, and is a key subfield for this list entry.
subfieldvalue	This represents the unique value within the list.

Because the LNEW operation uses the **subfieldfieldvalue** to locate a new row in the list, the value in **subfieldfieldvalue** must be unique. After you execute the LNEW operation, and the subfield specified by **subfieldname** receives its value, you must use the LCHG operation to assign values to all the other subfields.

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7.23.8 The LCHG operation

Use the LCHG operation to modify data in an existing row whose number you do not know. The syntax for the LCHG operation is as follows:

LCHG="subfieldname1"&"subfieldvalue1" - "subfieldname2"[& subfieldvalue2"]!	
subfieldname1	This specifies the name of the subfield of the list that has the unique value, and is a key subfield for this list entry. It must be enclosed in double quotes, and is required.
subfieldvalue1	This represents the unique value within the list. It must be enclosed in double quotes, and is required.
subfieldname2	This specifies the name of the subfield that must have its value changed. It must be enclosed in double quotes, and is required.
subfieldvalue2	This specifies the value to be assigned to **subfieldname2**. It must be enclosed in double quotes, and is optional.

The LCHG operation uses **subfieldname1** and **subfieldvalue1** to locate the correct row of the list. Once this row is located, **subfieldvalue2** is assigned to **subfieldname2**. If **subfieldvalue2** is not given, a NULL is entered instead.

You must insert a hyphen (-) between **"subfieldname1"&"subfieldvalue1"** and **"subfieldname2"[& subfieldvalue2"]**

7.23.9 The LOUT operation

Use the LOUT operation to remove a row from a list. There are two methods to specify the list row you want to delete.

The following table defines the first method (Method 1) for removing a row from a list.

Table 7-9 Method 1

LOUT="subfieldname"&"subfieldvalue"!	
subfieldname	This specifies the name of the subfield of the row that has the unique value, and is a key subfield for this list entry. It must be enclosed in double quotes, and is required. (This is the same way that LCHG identifies a row.)
subfieldvalue	This represents the unique value within the list. It must be enclosed in double quotes, and is required.

The following table defines the second method (Method 2) for removing a row from a list.

Table 7-10 Method 2

LOUT="fieldname[row]"!

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Table 7-10 Method 2 (continued)

fieldname	This identifies the list from which to delete a row by specifying the field or subfield in the list. It must be enclosed in double quotes, and is required.
row	This specifies the number of the row to be deleted.

7.23.10 The GETDATA operation

You will run into a problem if you attempt to update a record with alternate keys if the purpose of the update is to change the value of the secondary key. In the following example, the intent is to retrieve the record having key1 as its key, then to modify the value of key2.

```
FORM=SPA_EXAMPLE_1&CHG!
key1=5470131!
key2=9786723!
CHG!
```

This attempt will fail because the system will try to retrieve a record having both keys set to the same values. It will not find the value for key2. Use the GETDATA operation to explicitly request the retrieval of the record before the specification of the new value for key2. The following example shows how this is done.

```
FORM=SPA_EXAMPLE_1&CHG!
key1=5470131!
GETDATA!
key2=9786723!
CHG!
```


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7.24 Operations used to commit changes to the database

7.24.1 Description

After you have described the changes to be made to a record of data, you need to indicate that the information is complete and correct, and that the change(s) should be made effective in the database. You do this by repeating the specification of the operation that you specified as part of the syntax of the FORM operation.

7.24.2 The NEW operation

Use the NEW operation in conjunction with the FORM operation to enter new data into the database. The syntax for the NEW operation is as follows:

FORM=formname & NEW!	
formname	This specifies the name of a valid form that you will use to insert data. It is required. If you specify a form number, you must enclose the number in double quotes.
NEW	This allows entry of new data into the database, and is required.

7.24.3 The CHG operation

Use the CHG operation in conjunction with the FORM operation to modify data in the database. The syntax for the CHG operation is as follows:

FORM=formname & CHG!	
formname	This specifies the name of a valid form that you will use to insert data. It is required. If you specify a form number, you must enclose the number in double quotes.
CHG	This allows modification of data in the database, and is required.

7.24.4 The OUT operation

Use the OUT operation in conjunction with the FORM operation to delete data from the database. The syntax for the OUT operation is as follows:

FORM=formname & OUT!	
formname	This specifies the name of a valid form that you will use to insert data. It is required. If you specify a form number, you must enclose the number in double quotes.
OUT	This allows deletion of data from the database, and is required.

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7.25 Operations used to delay committing changes to the database

7.25.1 Description

To improve performance, or to activate several changes simultaneously, you may want to delay committing a database change until you have specified several other database changes to be made. Two operations are available to specify the end of a request without committing the change. These are the REPEAT and BREAK operations.

Until you commit a change, it does not exist in the database. Consequently, multiple uncommitted changes to the same record (such as creating a new record, then trying to update it before committing it) will not work. In other words, before a change to a record is available for use, you must commit it to the database.

Note that any uncommitted changes will be discarded if the session is terminated before you commit the changes.

7.25.2 The REPEAT operation

Use the REPEAT operation to mark the end of a request and to indicate that another request using the same form and the same operation should be executed before committing the current request. The line immediately following the REPEAT operation should specify the key for the next record to be used. For example, the following code would specify two records to be inserted into the database, with both changes being committed after the second change is processed.

```
FORM=SPA_EXAMPLE_1&NEW!
key=5572291!
field="After 6pm"!
REPEAT!
key=9271012!
field="Before 7am"!
NEW!
```

7.25.3 The BREAK operation

The BREAK operation is similar to the REPEAT operation in that it indicates that the preceding operation is to be ended without committing the request. BREAK indicates that the form and the operation may change for the next request. The following code would do an insert and a delete on the same form, followed by an update to another form. Only after the last operation in this example is executed would the whole set of changes be committed by the CHG! operation.

```
FORM=SPA_EXAMPLE_1&NEW!
key=5572291!
field="After 6pm"!
BREAK!
SAMEFORM&OUT!
key=5571004!
BREAK!
FORM=SPA_EXAMPLE_3&CHG!
key=9271012!
field1=3!
```


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```
field24=NO!
CHG!
```

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7.26 Operations used to display information

7.26.1 Description

Use the following two operations to retrieve and display information about RC/V forms:

- VFY: displays all the information contained on a form (both the names of the fields and the values of the data associated with those fields)
- ATTR: displays the names of the fields contained on a selected form

7.26.2 The VFY operation

Use the VFY operation in conjunction with the FORM operation to verify data in the database. The syntax for the VFY operation is as follows:

FORM=formname & VFY!	
formname	This specifies the name of a valid form that you will use to insert data. It is required. If you specify a form number, you must enclose the number in double quotes.
VFY	This allows deletion of data from the database, and is required.

7.26.3 The ATTR operation

Use the ATTR operation in conjunction with the FORM operation to display the names (attributes) of the fields in the selected form. Output displays in name value format, and consists of the name of each field in the specified form, followed by symbols that indicate field type. Refer to the 7.20.15 “The VFYNMVAL operation” (p. 860) section for information on the name value format. Refer to Table 7-11, “Field type formats” (p. 873) for information on field types. The syntax for the ATTR operation is as follows:

FORM=formname & ATTR!	
formname	This specifies the name of a valid form that you will use to insert data. It is required. If you specify a form number, you must enclose the number in double quotes.
ATTR	This allows the attributes of the form's fields to display, and is required.

The following table defines the symbols that indicate the field type.

Table 7-11 Field type formats

Format	Description
fieldname=*	fieldname is a key field for this form
fieldname=(*)	fieldname is an optional key field for this form
fieldname=#	fieldname is a required field for this form

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Table 7-11 Field type formats (continued)

Format	Description
fieldname=	fieldname is a normal field for this form

7.26.4 The MARK operation

Use the MARK operation to insert information into the output stream, such as an identifier used in the system supplying the database change information. The information to be inserted is provided with a text string and is not examined by the RC/V text software. The syntax of the MARK command is as follows:

MARK "text string"

This operation will cause the following line to display in the output stream:

```
!! text string
```

The distinctive !! string will be placed at the beginning of the line containing the text string. This allows easy identification of this line by software that parses the output stream.

7.26.5 The HELP operation

The HELP operation requests the display of the contents of a command summary help file. Invoke the command using either the **HELP** format or the **?** format.

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7.27 Operations used to display or ignore system messages

7.27.1 Description

The system responds to all text commands with a message. System messages fall into three main categories:

- successful acknowledgements
- error messages
- warning messages

7.27.2 Successful acknowledgement messages

If you enter a text command that the system understands, but does not end a session, the system responds with `OK`.

7.27.3 Warning messages

Some text commands may be syntactically correct, but will cause the system to generate warning messages. The system informs you that a warning message has been generated by displaying a message such as `?W warning text` or `?W <<< 0 Errors, 1 Warnings >>>` The former message comes directly from the command parser and deals with problems in the text of the command. The latter message comes indirectly from the database manager and deals with problems in the database. You can request a detailed explanation of the error using the MSG operation, or you may ignore it. Refer to 7.27.5 “The MSG operation” (p. 875)

7.27.4 Error messages

When you enter a text command that the system cannot process, it responds with an error message such as `?E error text` or `?E <<< 1 Error, 0 Warnings >>>` The former message comes directly from the command parser and deals with problems in the text of the command. The latter message comes indirectly from the database manager and deals with problems in the database.

Important! You cannot ignore error messages. You must correct the error(s) before the system will allow you to enter another text command.

7.27.5 The MSG operation

Use the MSG operation to view the text of system messages. The syntax for the MSG operation is as follows:

`MSG!`

If you do not use the MSG operation, the error messages remain in the internal message queue. If you encounter errors on later input lines, and then use the MSG operation, some confusion may result as to which input line caused which error messages.

Error messages returned from the MSG operation consist of two types:

- general ODIN-generated errors

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- specific SPA-generated errors

Make sure to check your SPA customer documentation to ensure that error messages generated from the SPA-designed ODIN forms are included in the SPA customer documentation. The platform has no knowledge of the structure and format of these error messages; it merely passes the messages through to the user.

The following list shows some of the general ODIN-generated error message that may be returned with the MSG operation:

- FORM NOT FOUND!!
- DUPLICATE FORM!!
- FORM ABORTED!!
- UPDATE ABORTED!!
- FORM *NOT* EXECUTED
- FORM *NOT* INSERTED
- FORM *NOT* UPDATED
- FORM *NOT* DELETED
- null value in REQUIRED field
- Form insertion failed

MSG operation example

Most of the error messages returned with the MSG operation will be those generated by the SPA form. These usually denote domain value errors or form check errors. Refer to your SPA customer documentation for a complete list of the SPA form error messages.

The following example illustrates an error message returned from a SPA form, and demonstrates how to use the MSG operation. On line 5, the user has entered a value that is not in the domain or ROUTETYP. On line 6, the system alerts the user of the error. On line 7, the user requests the text of the error message, which the system displays on line 8. The user responds by entering a valid value on line 9.

```
1 > FORM = SPA1&CHG!
2 OK
3 > SSN = 125!
4 OK
5 > ROUTETYP = RTKEY!
6 ?E <<< 1 Errors, 0 Warnings >>>
7 > MSG!
8 Enter RK or SSN
9 > ROUTETYP = RK
10 OK
11 > CHG!
```

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7.27.6 The IGN operation

You may display warning and error messages with the MSG operation. You may ignore warning messages with the IGN operation. The syntax for the IGN operation is as follows:

```
IGN!
```

Note that you cannot ignore error messages. You must correct the error before the system will allow you to enter another text command.

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7.28 Operations used to exit a form or session

7.28.1 Description

The END and ABORTFORM operations are provided so you may exit from your current position in the RC/V text interface.

7.28.2 The ABORTFORM operation

Use the ABORTFORM operation to cancel any form operation you have performed. Your work will not be saved. You might use this operation if you discover an error in your data and you want to exit without saving changes, or if you receive an unexpected error response from the system and you are forced to quit. In either case, you may begin another session with the same form or a new one. The syntax for the ABORTFORM operation is as follows:

```
ABORTFORM!
```

7.28.3 The END operation

Use the END operation to exit the RC/V text mode interface. The syntax for the END operation is as follows:

```
END;
```

The semicolon (;) is required. You can invoke this operation at any time while working in text mode. Note that any request that has not yet been committed when you invoke the END operation will be discarded.

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7.29 Including comments in the RC/V text input

7.29.1 Description

You may include comments in the input to RC/V text. Start the comment with the characters /* and end the comment with the characters */. Note that if you omit the closing */ characters, the entire input stream following the opening /* characters will be converted into one long comment.

7.29.2 Example comments

Following are two example comments. The first comment is coded as a multiple line comment. The second is embedded in the stream of data. (Note that you cannot embed a comment closing string inside a comment.)

```
/* This comment runs
for two lines */
FORM=SPA_EXAMPLE_1 /*Example SPA form number 1 */ &VFY!
```


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7.30 sendRC tool

7.30.1 Overview

The platform delivers the following RCTEXT templates under */cs/sn/utest/rc* directory:

- RCTEXT_m2pa_config_ANSI.template
- RCTEXT_m3ua_config_ANSI.template
- RCTEXT_m2pa_config_ITU.template
- RCTEXT_m3ua_config_ITU.template

With the sendRC tool (also delivered under */cs/sn/utest/rc* directory) and a template filled out with all the desired SS7 data, users can provision the platform configuration data required for M2PA or M3UA. Templates are provided in either ANSI or ITU point code formats. These formats would allow the data to be configured through a flat file approach through the RCPERM process in lieu of the RC/V menu manual steps.

7.30.2 The sendRC Tool Usage

The sendRC tool usage is as follows:

/cs/sn/rc/utest/rc/sendRC –c plat <input file>

When specifying the input file, its absolute path is required.

For example:

/cs/sn/rc/utest/rc/sendRC –c plat /cs/sn/utest/rc/ANSI_m2pa_config.in

Prior to executing the command, ensure that the input file has the read permission for user **ainet.**

Upon successful execution of all the operations contained in the input file by RCPERM, **sendRC** tool would print out a message to indicate the success with the output also indicating number of form operations were done. In the example output, a total of 23 form operations were successfully executed.

```
attaching to MSGH ...
registering /cs/sn/utest/rc/sendRC29715 with MSGH ...
initializing timers ...
building RCplatTextReq msg for /u/ainet/shanyin/TE02_ansi_m2pa_test.
in...
sending RCplatTextReq message ...
set a 300 second timer for waiting ...
wait for an event ...
received an RCplatTextReqAck msg ...
SUCCESS for /u/ainet/shanyin/TE02_ansi_m2pa_test.in, forms = 23.
No output file was sent.
all done. good bye !!!
```

If there is any failure in executing a form operation, execution of the rest of the operations would be stopped and an output would be printed to indicate the failure code, details and at which form the

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failure occurred. The example indicated that the execution of the second form operation (RC/V Form 3.2.5 update attempt) failed.

```
attaching to MSGH ...
registering /cs/sn/utest/rc/sendRC11599 with MSGH ...
initializing timers ...
building RCplatTextReq msg for /u/ainet/shanyin/RCTEXT_m2pa_test.in...
sending RCplatTextReq message ...
set a 300 second timer for waiting ...
wait for an event ...
received an RCplatTextReqAck msg ...
FAILURE (ret = 0x0302, forms = 2) for /u/ainet/shanyin/RCTEXT_m2pa_test.
in.
output file is /tmp/RC1120c.
?E <<< 2 Errors, 0 Warnings >>>
Current line: |NEW|
RCERR40-S7_REMOTE_STP-U131
UPDATE FAILED: Delete all link sets to the REMOTE STP first.
all done. good bye !!!
```

7.30.3 Provisioning M2PA Platform Data

The following forms need to be provisioned for M2PA platform configuration:

- SS7 Office Configuration Form (2.6)
- SS7 Adjacent Remote STP PC Form (3.2.5)
- SS7 Adjacent End Node PC Form (3.2.6)
- SS7 LinkSet Form (3.1.1)
- SS7 Board Form (3.1.2)
- SS7 Routing Pattern Index Form (3.2.1)
- SS7 Point Code Form (3.2.2)
- SS7 Alias PC Form (3.2.4)
- SS7 Cluster Parameter Form (3.6.1)
- SS7 NODE TO LAN ASSIGNMENT FORM (3.6.2)
- SCTP HOST CONFIGURATION FORM(12.1)
- SCTP ASSOCIATION FORM(12.2)
- SS7 SSN Form (3.3.1)
- SPMAN SSN Resource Management Form (1.3)
- SS7 SCCP Parameters Form (3.3.2)
- MUX Local IP Configuration Form (16.1)
- MUX SSN Configuration Form (16.2)
- SS7 Link Form (3.1.3)

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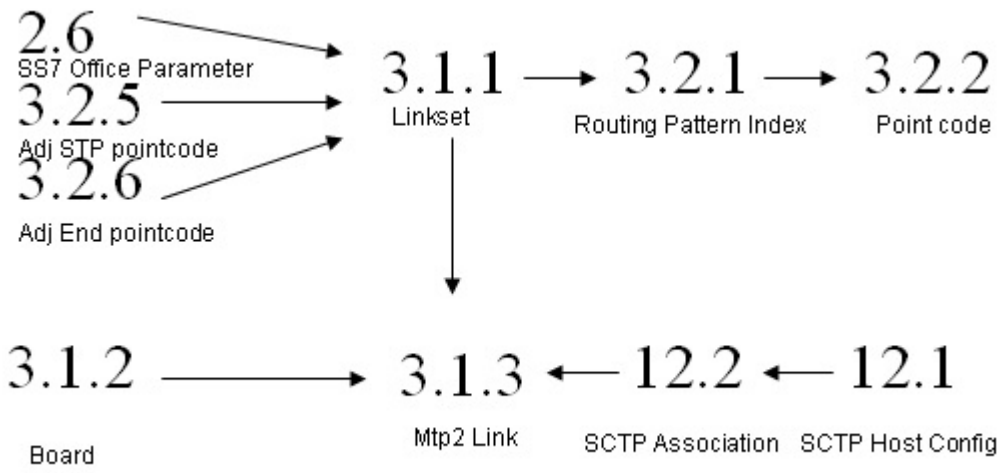
Some of the fields of the four forms in bold carry site/node specific data that have to be configured prior to starting the platform. So they are assumed to have been configured prior to using sendRC tool to populate other forms as already commented in each template file.

Form 3.2.5, 3.2.6, 3.2.4, 1.3 and 3.3.2 are optional in that they need to be provisioned only if the corresponding functionality is needed. For example, form 3.3.2 can be optionally used to increase the query response timer if the default 4000 ms is not long enough. The rest of the forms listed above must be provisioned.

Each M2PA template file already commented out the operation commands for the optional forms and the user can uncomment those if they are needed.

Also, provisioning of some of the forms require a strict order. This order must be correctly followed, otherwise the provisioning would fail. The following diagram depicts the provisioning order of those forms:



The M2PA template files are purposely created to follow the form provisioning order and the RCTEXT operational commands are tested to ensure that they function correctly.

7.30.4 Provisioning M3UA platform data

The following forms need to be provisioned for M3UA platform configuration:

- SS7 Office Configuration Form (2.6)
- SS7 Cluster Parameter Form (3.6.1)
- SS7 NODE TO LAN ASSIGNMENT FORM (3.6.2)
- SCTP HOST CONFIGURATION FORM(12.1)
- SCTP ASSOCIATION FORM(12.2)
- M3UA APPLICATION SERVER PROCESS (ASP) FORM(12.3)
- M3UA SIGNALING GATEWAY PROCESS (SGP) FORM(12.4)

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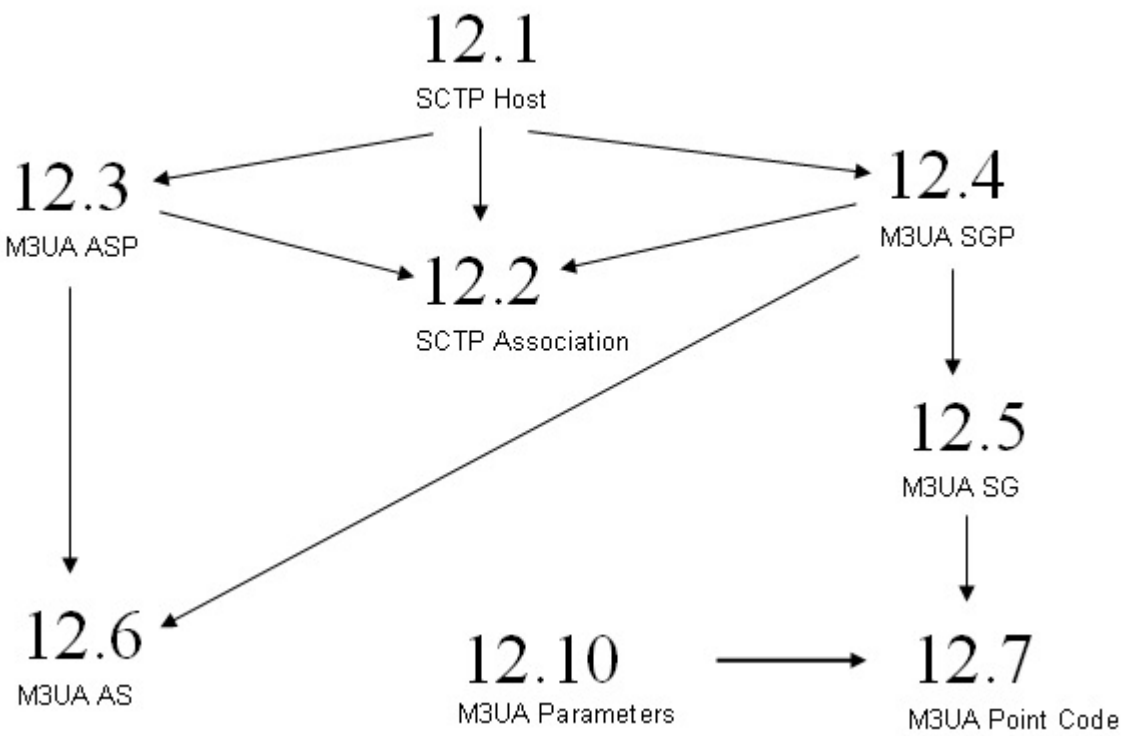
- M3UA SIGNALING GATEWAY (SG) FORM(12.5)
- M3UA APPLICATION SERVER (AS) FORM(12.6)
- M3UA POINT CODE FORM(12.7)
- M3UA Remote Application Server Form (12.8)
- M3UA RAS Process Form (12.9)
- SIGTRAN M3UA Parameters Form (12.10)
- SS7 SSN Form (3.3.1)
- SS7 SCCP Parameters Form (3.3.2)
- MUX Local IP Configuration Form (16.1)
- MUX SSN Configuration Form (16.2)

Similar to M2PA provisioning and as commented in M3UA template files as well, tables of the forms in bold are assumed to have been correctly configured prior to the platform start.

Some of the forms are also optional. For example, form 12.8 and 12.9 are not needed unless there is an IPSP to IPSP configuration.



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Just like the M2PA template files, the M3UA template files also commented out the operation commands for the optional forms and they are purposely created to follow the corresponding provisioning order.

7.30.5 RCTEXT commands

As described earlier, the M2PA and M3UA RCTEXT template files are created to follow the needed provisioning order of the forms. Each template file also provides detailed comments that should be able to assist users in using each template to populate needed data lines. For each form, the default, needed or recommended values are already populated in corresponding command lines. So users do not have to change those lines unless the corresponding values have to be adjusted.

For detailed information about the RCTEXT commands, see “Updating RC/V SPA data” (p. 852). To assist users at field sites, the usage of the commands is also compiled into a help file and delivered on the platform *(/cs/sn/rc/RCTextHelp.txt)*.

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Operations, administration, and maintenance submenu

7.31 Overview

7.31.1 Purpose

This section provides information on platform-related operations, administration, and maintenance (OA&M) using the RC/V system.

7.31.2 Contents

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7.32 Submenu 2: OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU

7.32.1 Overview

The OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU is the starting point for completing the following tasks:

- adding, modifying and delete output messages, including their destinations, alarm levels, and formats
- modifying log file sizes
- adding or modifying message classes and message class destinations
- setting up measurement intervals, including adding measurement tables and collection processes, and assigning report files and threshold tables
- scheduling timed and cyclic events
- viewing platform configuration data
- enabling, disabling, or modifying operations systems services, and establishing IP addresses for service clients
- updating SNMP interface parameters

7.32.2 Before you begin

Before beginning any procedure, make sure you are familiar with the concepts and methods for using Recent Change/Verify menus and forms.

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7.32.3 Illustration

Figure 7-2 Submenu 2: OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU (screen 1 of 2)

```
Screen 1 of 2 OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU
Selection    Category
[ 1]    USL MESSAGE DESTINATION FORM
[ 2]    USL MESSAGE CLASS DEFINITION FORM
[ 3]    USL OUTPUT MESSAGE DEFINITION FORM
[ 4]     MEASUREMENT INTERVAL FORM
[ 5]    PLATFORM PARAMETERS FORM
[ 6]    SS7 OFFICE PARAMETERS FORM
[ 7]    TIMED SCHEDULING FORM
[ 8]    CYCLIC SCHEDULING FORM
[ 9]    OAM PARAMETERS FORM
[10]    OPERATIONS SYSTEMS SERVER FORM
[11]    OPERATIONS SYSTEMS CLIENT FORM
[12]    JSLEE PROPERTIES FORM
[13]    CSLEE PROPERTIES FORM
[14]    PLATFORM LOCATION FORM
[15]    PERFORMANCE DISPLAY INTERVAL FORM
[16]    PERFORMANCE DISPLAY THRESHOLD FORM
```

Figure 7-3 Submenu 2: OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU (screen 2 of 2)

```
Screen 2 of 2 OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU
Selection    Category
[ 17]        IPSEC PARAMETERS FORM
[ 18]        USL X733 OUTPUT MESSAGE REPORT FORM
[ 19]        USL X733 OUTPUT MESSAGE DEFINITION FORM
[ 20]        AUTOMATIC FILE TRANSFER FORM
[ 21]        USL NODE INFORMATION TABLE FORM
[ 22]        USL NODE EQUIPMENT DEFINITION TABLE FORM
[ 23]        UNIQUE ALARM CODE FORM
```

Only forms 2.1 to 2.11 are applicable to the platform.

7.32.4 Available forms

The OPERATIONS, ADMINISTRATION AND MAINTENANCE SUBMENU contains the following forms:

- 7.34 “Form 2.1: USL MESSAGE DESTINATION FORM” (p. 890)
- 7.35 “Form 2.2: USL MESSAGE CLASS DEFINITION FORM” (p. 893)
- 7.36 “Form 2.3: USL OUTPUT MESSAGE DEFINITION FORM” (p. 897)

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- 7.37 “Form 2.4: MEASUREMENT INTERVAL FORM” (p. 900)
- 7.38 “Form 2.5: PLATFORM PARAMETERS FORM” (p. 903)
- 7.39 “Form 2.6: SS7 Office Parameters Form” (p. 905)
- 7.40 “Form 2.7: TIMED SCHEDULING FORM” (p. 916)
- 7.41 “Form 2.8: CYCLIC SCHEDULING FORM” (p. 922)
- 7.42 “Form 2.9: OAM PARAMETERS FORM” (p. 924)
- 7.43 “Form 2.10: OPERATIONS SYSTEMS SERVER FORM” (p. 926)
- 7.44 “Form 2.11: OPERATIONS SYSTEMS CLIENT FORM” (p. 928)
- 9.6 “Form 2.12. JSLEE PROPERTIES FORM” (p. 1225)
- 9.7 “Form 2.13. CSLEE PROPERTIES FORM” (p. 1226)
- 9.8 “Form 2.14. PLATFORM LOCATION FORM” (p. 1229)
- 9.9 “Form 2.15 PERFORMANCE DISPLAY INTERVAL FORM” (p. 1230)
- 9.10 “Form 2.16 PERFORMANCE DISPLAY THRESHOLD FORM” (p. 1232)
- 9.12 “Form 2.17: IPSEC PARAMETERS FORM” (p. 1237)
- 9.13 “Form2.18: USL X733 OUTPUT MESSAGE REPORT FORM” (p. 1238)
- 9.14 “Form2.19: USL X733 OUTPUT MESSAGE DEFINITION FORM” (p. 1239)
- 9.2 “Form 2.20: Automatic External File Transfer Form” (p. 1218)
- 9.3 “Form 2.21 USL NODE INFORMATION TABLE FORM” (p. 1220)
- 9.4 “Form 2.22 USL NODE EQUIPMENT TABLE FORM” (p. 1222)
- 9.5 “Form 2.23: UNIQUE ALARM CODE FORM” (p. 1224)

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7.33 Managing output messages

7.33.1 Overview

Site technicians depend on output messages to learn about the status of the platform and troubleshoot problems. Some messages are critically important and need to display on the ROP. Others are less important and may be directed to one or more log files. Messages originate from many different processes and can have a variety of destinations, classes, alarm levels, and formats. Because of this, you must manage messages carefully so that their information is available and timely.

7.33.2 Updating the output message database (OMDB)

No matter where they originate, output messages are routed to their destinations by internal system processes. These processes use information from the output message database (OMDB) to correctly route, classify, and format the messages.

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7.34 Form 2.1: USL MESSAGE DESTINATION FORM

7.34.1 Overview

Use this form to complete one or more of the following tasks:

- create a new log file (for example, to create a log file for output from an SPA)
- change the size of a log file (for example, to alleviate a shortage of disk space)
- create a new destination (for example, a new OS interface)

7.34.2 Illustration

Figure 7-4 Form 2.1: USL MESSAGE DESTINATION FORM

```
Screen 1 of 1           USL MESSAGE DESTINATION FORM
*>  1. DEST             MTCLOG
    2. LOGICALDEV       mtclog
    3. CHANNELTYPE      LOG
    4. LOGHSIZE         100000
    5. DAILY            N
    6. MAX # FILES      2
    7. AGE OF LOG       0
```

7.34.3 Assigning a destination to an output message

The first step in setting up an output message is deciding the destination of the message. You can route it to the ROP, to one or more log files, to a terminal screen, or to a combination of these destinations.

All output messages should be sent to at least one log file. They can also be sent to as many as nine additional destinations.

Important! An appropriate destination for your output message may already exist. Before adding a new destination entry, query the form for a destination that you can use.

7.34.4 Description of fields for USL MESSAGE DESTINATION FORM

The following table defines the fields in the USL MESSAGE DESTINATION FORM. Refer to Figure 7-4, “Form 2.1: USL MESSAGE DESTINATION FORM” (p. 890) for an illustration.

Table 7-12 USL MESSAGE DESTINATION FORM field descriptions

Field	Description
1	The DEST field identifies the routing destination of the output message. The most common destinations are ROP, SCC, and DAYLOG. Refer to 7.34.5 “Destination values” (p. 892) for a complete list of valid values.

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Table 7-12 USL MESSAGE DESTINATION FORM field descriptions (continued)

Field	Description
2	The LOGICALDEV field identifies the file name for a log file. File names other than NULL must be uniquely paired with an output message. All log files go under /sn/log. (Only logs can be stored under this directory.) Up to 50 characters, values: OMlog, mtclog, auditlog, craftlog, debuglog, measlog, snmplog, or NULL
3	The CHANNELTYPE field identifies the process that receives the output message. The LOG process receives the output message if a log file is named in the previous field. Otherwise, any existing process may be used. Up to 12 characters, values: LOG (for log file), LMT, SCC, ROP, or [MSGHNAME]
4	The LOGHSIZE field defines a size limit for a log file (in bytes). The size is specified as half the size of the log file. Up to seven digits, range: 0 to 9999999
5	The DAILY field specifies whether the destination log file should be switched daily (at midnight). By default (DAILY = N), destination log files are switched only when they reach a maximum size (as specified in field four). By setting DAILY = Y, the destination log file will be switched at midnight regardless of whether the log file has reached maximum size.
6	The MAX # FILES field specifies the number of log files that will be created. For example, if the MAX # FILES field equals three, then logfile0, logfile1, and logfile2 will be created. Messages will be sent to log files in a cyclic pattern: logfile0 first, logfile1 second, logfile2 third, logfile0 fourth, ... up to two digits, range: 2 to 20, default is 2.
7	The AGE OF LOG field supports the switching of log files based on age criteria. If AGE OF LOG and LOGHSIZE are specified, then log files will be switched when either AGE OF LOG or LOGHSIZE is reached, whichever is reached first. In addition, AGE OF LOG and DAILY options are mutually exclusive; that is, if DAILY is set to "Y", Age must be set to 0. By default, AGE OF LOG is set to 0. This indicates log file management by AGE OF LOG is disabled. AGE OF LOG is provisioned in units of hours. The range of AGE OF LOG is 1 - 168.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.34.5 Destination values

The following table defines the valid values for the DEST field on the USL MESSAGE DESTINATION FORM.

Table 7-13 USL MESSAGE DESTINATION FORM destination values

Value	Description
ROP	read-only printer
LMT	local maintenance terminal
RMT	remote maintenance terminal
STDYLOG	log file
BKUPLOG	backup log file
NMLOG	NetMinder log file
SCCLOG	SEFM log
SCC	Switching Control Center log file
TTLOG	trap and trace log
DEBUGLG	debug log file
MTCLOG	maintenance log file
AUDLOG	audit log file
DAYLOG	general log file
MEASLOG	measurements log file
SEASI	Signaling Engineering and Administration System subsystem log file
CFTLOG	craft log
TOOLLOG	LTF log
TSLOG	Telecom server log
ECAMLOG	ECAM log
SNMPI	Simple Network Management Protocol Interface subsystem log file
APMEALG	Application measurements log file

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7.35 Form 2.2: USL MESSAGE CLASS DEFINITION FORM

7.35.1 Overview

Use this form to complete one or more of the following tasks:

- change the routing destinations for output messages of a particular class
- enter a new message class and specify the output message destination for that class
- add, delete, or modify the destinations for an existing message class

For example, you could route output messages of a particular class to a different log file or to SCCS. Or, you could create output messages for a new SCH.

Note that all message classes, either predefined or user-defined, must include at least one log file among their destinations.

7.35.2 Illustration

Figure 7-5 Form 2.2: USL MESSAGE CLASS DEFINITION FORM

```
Screen 1 of 1   USL MESSAGE CLASS DEFINITION FORM

*>  1.MESSAGE CLASS     _______
   2.DESTINATION0     _______
   3.DESTINATION1     _______
   4.DESTINATION2     _______
   5.DESTINATION3     _______
   6.DESTINATION4     _______
   7.DESTINATION5     _______
   8.DESTINATION6     _______
   9.DESTINATION7     _______
     10.DESTINATION8       _______
     11.DESTINATION9      _______

MESSAGE CLASS:USL Interface Message Classification
```

7.35.3 Description of fields for USL MESSAGE CLASS DEFINITION FORM

The following table defines the fields in the USL MESSAGE CLASS DEFINITION FORM. Refer to Figure 7-5, “Form 2.2: USL MESSAGE CLASS DEFINITION FORM” (p. 893) for an illustration.

Table 7-14 USL MESSAGE CLASS DEFINITION FORM field descriptions

Field	Description
1	The MESSAGE CLASS field identifies the output message class. Refer to 7.35.4 “Output message classes and their destinations” (p. 894) for a list of message classes.

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Table 7-14 USL MESSAGE CLASS DEFINITION FORM field descriptions (continued)

Field	Description
2-11	The DESTINATION0 through DESTINATION9 fields identify the routing destinations (defined in the USL MESSAGE DESTINATION FORM) for the output message. Refer to 7.35.4 "Output message classes and their destinations" (p. 894) for a list of destinations that correspond to each message class. Note that the most common destinations are ROP, SCC, and DAYLOG.

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

7.35.4 Output message classes and their destinations

The following table presents some of the output message classes and some of their corresponding destinations. Refer to the document for more information on output message classes and their destinations.

Table 7-15 Output message classes and their destinations

Output message class	Destination(s)
ADMIN	DAYLOG, ROP, SCC
ALRM	DAYLOG, ROP, SCC
AMA	DAYLOG, ROP, SCC
ASRT	ASRTLOG
AUDL	DAYLOG, AUDLOG, MTCLOG, ROP, SCC
AUDT	DAYLOG, ROP, SCC
AUDTFST	DAYLOG, ROP, SCC
AUDTMON	DAYLOG, ROP, SCC
BIL	DAYLOG, ROP, SCC
BKUP	DAYLOG, ROP, SCC, LMT, RMT, BKUPLOG
CC	DAYLOG, ROP, SCC
CP	DAYLOG, ROP, SCC
CRALRM	DAYLOG, ROP, SCC, LMT, RMT
DB	DAYLOG, ROP, SCC
DEBUG	ASRTLOG
GENR	DAYLOG, ROP, SCC
HW	DAYLOG, ROP, SCC

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Table 7-15 Output message classes and their destinations (continued)

Output message class	Destination(s)
INECHO	DAYLOG, LMT, ROP, SCC
INT	DAYLOG, ROP, SCC
IOC	DAYLOG, ROP, SCC
MAINT	DAYLOG, MTCLOG, ROP, SCC
MTCE	DAYLOG, MTCLOG, ROP, SCC
ODD	DAYLOG, ROP, SCC, MTCLOG
OFR	DAYLOG, ROP, SCC
OVRLD	DAYLOG, ROP, SCC
PLNT	ROP
RC	DAYLOG, LMT, ROP, SCC
RCSPL	DAYLOG, ROP
RCVY	DAYLOG, ROP, SCC
REX	DAYLOG, ROP, SCC
SC	DAYLOG, ROP, SCC
SCCOM	SCC
SEASS7	SEASI, DAYLOG, MTCLOG, ROP, SCC
SED	DAYLOG, ROP, SCC
SF	DAYLOG, ROP, SCC
SFTW	DAYLOG, ROP, SCC
SPAMTCL	DAYLOG, LMT, ROP
SPAMTCR	DAYLOG, SCC, ROP, SCCLOG
SPAMTCB	DAYLOG, LMT, SCC, ROP
SPAMTCL	DAYLOG, ROP
SPERR	DAYLOG, ROP, SCC
TM	DAYLOG, ROP, SCC
TRCE	DAYLOG, ROP, SCC
TRFM	ROP
TTMAINT	DAYLOG, MTCLOG, LMT, ROP, SCC, TTLOG

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Table 7-15 Output message classes and their destinations (continued)

Output message class	Destination(s)
TTLOG	TTLOG
UT	DAYLOG, ROP, SCC
APMEAS	APMEALG

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7.36 Form 2.3: USL OUTPUT MESSAGE DEFINITION FORM

7.36.1 Overview

Use this form to create or change one or more of the following:

- the text of an output message
- the default alarm level on a message
- the message class on an output message (for example, to reroute an existing output message)

7.36.2 Illustration

Figure 7-6 Form 2.3: USL OUTPUT MESSAGE DEFINITION FORM

```
Screen 1 of 1   USL OUTPUT MESSAGE DEFINITION FORM

*> 1.  OUTPUT MESSAGE NAME  _______
  2.  CLASS          _______
  3.  ALARM LEVEL         _______
  4.  FORMAT       ________________
  5.   ________________________
  6.   ________________________
  7.   ________________________
  8.   ________________________




MESSAGE CLASSIFICATION. Enter USLI Message Classification
```

7.36.3 Requirements for using an output message

Before an output message can be used, two things must happen:

1. A macro referencing the message must be included in the command execution program (CEP), SPA, SCH, or other process needing to provide information. The programmer who is developing the application message is responsible for this.
2. The output messages must be stored in the output message database (OMDB).

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7.36.4 Description of fields for USL OUTPUT MESSAGE DEFINITION FORM

The following table defines the fields used in the USL OUTPUT MESSAGE DEFINITION FORM. Refer to Figure 7-6, “Form 2.3: USL OUTPUT MESSAGE DEFINITION FORM” (p. 897) for an illustration.

Table 7-16 USL OUTPUT MESSAGE DEFINITION FORM field descriptions

Field	Description
1	The OUTPUT MESSAGE NAME field identifies the name of the output message. Up to seven characters, system-supplied messages begin with the slash character [/]
2	The CLASS field identifies the output message class. CLASS is defined in Form 2.2: USL MESSAGE CLASS DEFINITION FORM.
3	The ALARM LEVEL field identifies the default alarm level of the output message. Up to two characters, values: 1. AT (automatic) 2. CR (critical) 3. MJ (major 4. MN (minor) 5. NO (no alarm) 6. CL (clear) 7. TC (transient critical) 8. TJ (transient major) 9. TN (transient minor)

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Table 7-16 USL OUTPUT MESSAGE DEFINITION FORM field descriptions (continued)

Field	Description
4-8	The FORMAT field identifies the text of the output message. Values are similar to C-language `printf` format strings using the following special symbols: • **`/n`** (carriage return) • **`%d`** (decimal) • **`%o`** (octal) • **`%x`** (hex) • **`%c`** (single character) • **`%s`** (character string) • **`%r`** (IN system error code) • **`%r`** (UNIX system error code) • **`%z`** (block of data in hexadecimal) • **`%(`** (mark the beginning of a repeated part of the message) • **`%)`** (mark the end of a repeated part of the message) **`This field is split into five lines. Caution must be taken when populating those lines`** See 7.9 “Updating a multi-line field” (p. 840) for more information about this type of form.

For database operations procedures, see 7.11 “Database Operations” (p. 843) section.

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7.37 Form 2.4: MEASUREMENT INTERVAL FORM

7.37.1 Overview

Use this form to complete one or more of the following tasks:

- add a new measurement table
- add a new collecting process
- change a collection interval
- assign a report file
- enable writing of measurement data to a flat file
- inhibit the collection of a measurement table

Traffic measurement reports are generated from data stored in measurement tables. Although the report file name is recent-changeable it is not typically changed through the RC/V system.

7.37.2 Illustration

Figure 7-7 Form 2.4: MEASUREMENT INTERVAL FORM

```
Screen 1 of 1
                      MEASUREMENT INTERVAL FORM

*>  1. MEASUREMENT TABLE NAME

      ____________________________________________________
*   2. COLLECTING PROCESS    ________________
    3. COLLECTION INTERVAL   __________
    4. REPORT FILE

      ____________________________________________________
    5. GENERATE FILE         _
    6. INHIBITED             _



MEASUREMENT TABLE NAME. Enter name of measurement table.
```

7.37.3 Related information

Refer to the *MAS System Administration Guide, 9YZ-04432-1671-DEZZA* for more information on measurements.

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7.37.4 Description of fields for MEASUREMENT INTERVAL FORM

The following table defines the fields in the MEASUREMENT INTERVAL FORM. Refer to Figure 7-7, “Form 2.4: MEASUREMENT INTERVAL FORM” (p. 900) for an illustration.

Table 7-17 MEASUREMENT INTERVAL FORM field descriptions

Field	Description
1	The MEASUREMENT TABLE NAME field identifies the name of the measurement table. A suggested value begins with a two- to four-character abbreviation for the process that generates the measurements (for example, RTDB, S7), or with SPA for application-class measurement tables. Up to 63 characters.
2	The COLLECTING PROCESS field identifies the platform process or SPA process that collects the associated measurement table. The string must contain a valid process name. Up to 20 characters.
3	The COLLECTION INTERVAL field identifies the time interval between data collections. Changing this parameter redefines how frequently a particular measurement table is collected. Up to 10 characters. • TRFC5 (5-minute traffic report • TRFC15 (15-minute traffic report • TRFC30 (30-minute traffic report • PLNTHR (hourly plant report • PLNT24 (daily plant report, collected at midnight) Note that the COLLECTION INTERVAL value must be the same for the S7_SCCP_MEAS measurement table and the S7_SSN_MEAS measurement table. The COLLECTION INTERVAL value for the S7_LK_MEAS measurement table and the S7_MTP_MEAS measurement table must be the same as the S7_FEP_MEA measurement table. The COLLECTION INTERVAL values allowed for the NS_LTF_UAL_MEAS measurement table are TRFC30, PLNTHR or PLNT24. The TRFC5 and TRFC15 values are not allowed.
4	The REPORT FILE field identifies the name of the formatting file. The UNIX file that is named in this field is run to report the measurements in this file. Up to 72 characters.

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Table 7-17 MEASUREMENT INTERVAL FORM field descriptions (continued)

Field	Description
5	The GENERATE FILE field defines whether data of the measurement table will be stored in the flat files under the directory */sysdata1/meas_files*. In an OA&M cluster environment, the files are created only on the active pilot blade. The names of the files will have the format TABLE_NAME.day_of_week For example: S7_FEP_MEAS.sunday. Measurements of the same table in the same day are appended to the same file. The first collection of the day overwrites the file for the same day of the week, if it exists. As a result, each measurement table has at most seven such files. One character N, Y. • N – Measurements collected at a blade will not be written to flat files. • Y – Measurements collected at a blade will be written to flat files.
6	The INHIBITED field defines whether a measurement interval can be specified and stored. Scheduling can be prohibited by setting this field to Y. One character, Y or N.

For database operations procedures, see 7.11 “Database Operations” (p. 843) section.

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7.38 Form 2.5: PLATFORM PARAMETERS FORM

7.38.1 Overview

Use this form to verify office parameters. You may not use this form to supply information to any processes that are running on the platform. The information displayed on this form is verify-only.

7.38.2 Illustration

Figure 7-8 Form 2.5: PLATFORM PARAMETERS FORM

```
Screen 1 of 1
                          PLATFORM PARAMETERS FORM

    2. SCHED CYCLIC INTERVAL          30
    3. USLI LOAD ID                   0
    4. USLI CLLI                      00000000000
    5. ALARM RELAY UNIT               0
    6. MAX SPA                        30
    7. MAX SPA UPDATES                1
```

7.38.3 Description of fields for PLATFORM PARAMETERS FORM

The following table defines the fields in the PLATFORM PARAMETERS FORM. Refer to Figure 7-8, “Form 2.5: PLATFORM PARAMETERS FORM” (p. 903) for an illustration.

Table 7-18 PLATFORM PARAMETERS FORM field descriptions

Field	Description
2	The SCHED CYCLIC INTERVAL field specifies the time interval, in seconds, between the start of successive cyclic events.
3	The USLI LOAD ID field specifies the number that corresponds to the software version currently running on the system.
4	The USLI CLLI field contains the Common Language Location Identifier (CLLI) which defines the location of the platform. The CLLI code identifies the city, state, building, and location within the building. See the network administrator for valid values.
5	The ALARM RELAY UNIT field is not significant for the platform.
6	The value of the MAX SPA field represents the maximum number of SPAs that are permitted to be on this system. The max SPA value can be modified by the craft via SQL commands. The maximum value allowed by the system is 30.
7	The value of the MAX SPA UPDATES field represents the maximum number of times an SPA can be updated.

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For database operations procedures, see the 7.11 “Database Operations” (p. 843) section.

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7.39 Form 2.6: SS7 Office Parameters Form

7.39.1 Overview

Use this form to view or define the control parameters for the platform. You can update the fields to reflect the latest data. This includes the ITU, ANSI, CHN, and gateway platform ODIN form versions.

7.39.2 SS7 Office Parameters Form (ITU version)

```
Screen 1 of 1          SS7 OFFICE PARAMETERS FORM

*>  1. NETWORK ID                        _____
    2. OFFICE ID                         ___
    3. SEAS CLLI                         ___________
    4. POINT CODE FORMAT                 _____
    5. NETWORK INDICATOR                 _____
    6. DISTRIBUTED SS7                   _
    7. INTERNAL CARGO TIMER              ___

                                  POINT CODE
                                  ----------
   8. LOCAL POINTCODE             ______
   9. HOME STP 1            ______
  10. HOME STP 2            ______



NETWORK ID.  Not changeable.
```

Description of fields for SS7 Office Parameters Form (ITU version)

The following table defines the fields in the SS7 Office Parameters Form (ITU version).

Table 7-19 SS7 Office Parameters Form (ITU version) field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant to the platform. Up to three digits, read only.
3	The SEAS CLLI field contains the common language location identifier (CLLI), which defines the location of the Bell Communications Research, Inc. SEAS office. The platform identifies the city, state, building, and location within the building using the CLLI code. Up to eleven characters. See your system administrator for valid values.

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Table 7-19 SS7 Office Parameters Form (ITU version) field descriptions (continued)

Field	Description
4	The POINT CODE FORMAT field identifies the format. Up to four characters. (ITU for this form), read only.
5	The NETWORK INDICATOR field indicates whether the location is international or national. Valid values: INTL, INTS, NATR, and NATL Default: NATL
6	The DISTRIBUTED SS7 field indicates the option of the clustered SS7 configuration. One character, values: C (for clustered configuration of running SS7 processes as single stacks within a single SS7 I/O node) or M (for allowing SS7 processes to run as multiple SS7 stacks within a single SS7 I/O node), read only.
7	The INTERNAL CARGO TIMER field contains the cargo delay time in ms among the SPA, S7SCH, STSCH, SCTPSCH, and the S7TSSCH subsystems. Read only from RCV, can update PARAM_SCP table "internal_cargo_timer" field with these possible values: 0, 20, 30, 40, 50, 60, 70, 80, 90, 100. Any change to this field requires the S7SCH and STSCH processes to be initialized. Ex. < init:proc=S7SCH,level=1,ucl; All official performance analysis has been done with the default value of 50ms. **Warning!** This should not be set to 0 unless a detailed performance analysis is completed.
8	The POINT CODE field identifies the point code of the platform where all of the links in the link set are physically terminated. Up to five digits, range: 1 to 16383. • The value cannot be already defined in form 3.2.2 with the point code type SEP • The value cannot already be defined as a remote STP in form 3.2.5 • The value cannot be modified if it is in use in form 11.1.
9	The HOME STP 1 field contains the point code of the first home STP adjacent to the platform through the link set. A home STP is one that receives outgoing global title messages not addressed to any specific STP point code. Up to five digits, range: 1 to 16383. • STP 1 must be different from STP 2 unless they are both 0 (zero) • The value cannot be the same as the platform POINT CODE • The value cannot already be defined as a remote STP in form 3.2.5 • The value cannot be modified if its link set exists in form 3.1.1 • The value must be 0 (zero) if HOME STP 1 is unequipped.

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Table 7-19 SS7 Office Parameters Form (ITU version) field descriptions (continued)

Field	Description
10	The HOME STP 2 field contains the point code of the second home STP adjacent to the platform through the link set. Up to five digits, range: 1 to 16383. See your network administrator for valid values. • STP 2 must be different from STP 1 unless they are both 0 (zero) • The value cannot be the same as the platform POINT CODE • The value cannot already be defined as a remote STP in form 3.2.5 • The value cannot be modified if its link set exists in form 3.1.1 • The value must be 0 (zero) if HOME STP 2 is unequipped.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

7.39.3 SS7 Office Parameters Form (ANSI version)

Illustration

Figure 7-9 Form 2.6 SS7 Office Parameters Form (ANSI version)

```
Screen 1 of 1          SS7 OFFICE PARAMETERS FORM

*>  1. NETWORK ID                        _____
    2. OFFICE ID                         ___
    3. SEAS CLLI                         ___________
    4. POINT CODE FORMAT                 ____
    5. NETWORK INDICATOR                 ____
    6. DISTRIBUTED SS7                   _
    7. INTERNAL CARGO TIMER              ___

                     NETWORK ID   CLUSTER ID   MEMBER ID
                     ----------   ----------   ----------
    LOCAL POINTCODE  8. LN  ___   9. LC  ___  10. LM  ___
    STP 1           11. S1N ___  12. S1C ___  13. S1M ___
    STP 2           14. S2N ___  15. S2C ___  16. S2M ___



NETWORK ID.  Not changeable.
```

Description of fields for SS7 Office Parameters Form (ANSI version)

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The following table defines the fields in the SS7 Office Parameters Form (ANSI version).

Table 7-20 SS7 Office Parameters Form (ANSI version) field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. Up to three digits, read only.
3	The SEAS CLLI field contains the common language location identifier (CLLI), which defines the location of the Bell Communications Research, Inc. SEAS office. The platform identifies the city, state, building, and location within the building using the CLLI code. Up to eleven characters, see your system administrator for valid values, read only.
4	The POINT CODE FORMAT field identifies the format. Up to four characters (ANSI for this form), read only.
5	The NETWORK INDICATOR field indicates whether the location is international or national Values: INTL or NATL, read only.
6	The DISTRIBUTED SS7 field indicates the option of the clustered SS7 configuration. One character, values: C (for clustered configuration of running SS7 processes as single stacks within a single SS7 I/O node) or M (for allowing SS7 processes to run as multiple SS7 stacks within a single SS7 I/O node), read only.
7	The INTERNAL CARGO TIMER field contains the cargo delay time among the SPA, S7SCH, and the S7TSSCH subsystem. Up to three digits, range: 20 to 100, read only.
8-10	The POINT CODE field identifies the point code of the platform where all of the links in the link set are physically terminated. The point code consists of a NETWORK ID (field 8) with a range from 0-255, a CLUSTER ID (field 9) with a range from 0-255 (0-317 for ATT point code format), and a MEMBER ID (filed 10) with a range from 0-255. Up to three digits, see your system administrator for valid values. • The value must not be 0-0-0. • The value cannot be already defined in form 3.2.2 with the point code type SMEMBER • The value cannot be modified if it is in use in form 11.1.

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Table 7-20 SS7 Office Parameters Form (ANSI version) field descriptions (continued)

Field	Description
11-13	The STP 1 field contains the point code of the first home STP adjacent to the platform through the link set. A home STP is one that receives outgoing global title messages not addressed to any specific STP point code. Up to three digits, range: 0 to 255, see your system administrator for valid values. • The point code value must be 0-0-0 for STP 1 if it is unequipped. • The value cannot be the same as the platform POINT CODE • The value cannot be the same as STP 2 unless both are 0 • The value cannot be modified if its link set exists in form 3.1.1.
14-16	The STP 2 field contains the point code of the second home STP adjacent to the platform through the link set. A home STP is one that receives outgoing global title messages not addressed to any specific STP point code. Up to three digits, range: 0 to 255, see your system administrator for valid values. • The point code value must be 0-0-0 for STP 2 if it is unequipped. • The value cannot be the same as the platform POINT CODE • The value cannot be the same as STP 1 unless both are 0 • The value cannot be modified if its link set exists in form 3.1.1.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.39.4 SS7 Office Parameters Form (CHN version)

Figure 7-10 Form 2.6 SS7 Office Parameters Form (CHN version)

```
Screen 1 of 1           SS7 OFFICE PARAMETERS FORM

*>  1. NETWORK ID                        _____
    2. OFFICE ID                         ___
    3. SEAS CLLI                         ___________
    4. POINT CODE FORMAT                 ____
    5. NETWORK INDICATOR                 ____
    6. DISTRIBUTED SS7                   _
    7. INTERNAL CARGO TIMER              ___

                    MAIN AREA ID   SUB AREA ID   POINT ID
                    ----------     ----------    ----------
    LOCAL POINTCODE   8. LN ___     9. LS ___   10. LP ___
    HOME STP 1       11. S1M ___   12. S1S ___  13. S1P ___
    HOME STP 2       14. S2M ___   15. S2S ___  16. S2P ___



NETWORK ID.  Not changeable.
```

Description of fields for SS7 Office Parameters Form (CHN version)

The following table defines the fields used in the SS7 Office Parameters Form (CHN version).

Table 7-21 SS7 Office Parameters Form (CHN version) field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant to the platform. Up to three digits, read only.
3	The SEAS CLLI field contains the common language location identifier (CLLI), which defines the location of the Bell Communications Research, Inc. SEAS office. The platform identifies the city, state, building, and location within the building using the CLLI code. Up to eleven characters, see your system administrator for valid values.
4	The POINT CODE FORMAT field identifies the format. Up to four characters (CHN for this form), read only.
5	The NETWORK INDICATOR field indicates whether the location is international or national. Values: INTL or NATL, default: NATL.

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Table 7-21 SS7 Office Parameters Form (CHN version) field descriptions (continued)

Field	Description
6	The DISTRIBUTED SS7 field indicates the option of the clustered SS7 configuration. One character, values: C (for clustered configuration of running SS7 processes as single stacks within a single SS7 I/O node) or M (for allowing SS7 processes to run as multiple SS7 stacks within a single SS7 I/O node), read only.
7	The INTERNAL CARGO TIMER field contains the cargo delay time among the SPA, S7SCH, and the S7TSSCH subsystem. Up to three digits, range: 20 to 100, read only.
8-10	The POINT CODE field identifies the point code of the platform where all of the links in the link set are physically terminated. Up to three digits, the point code consists of a MAIN AREA ID (filed 8) with a range from 0-255, a SUB-AREA ID (field 9) with a range from 0-255, and a POINT ID (filed 10) with a range from 0-255. • The value cannot be 0-0-0 • The value cannot be already defined in form 3.2.2 with the point code type SEP • The value cannot already be defined as a remote STP in form 3.2.5
11-13	The HOME STP 1 field contains the point code of the first home STP adjacent to the platform through the link set. A home STP is one that receives outgoing global title messages not addressed to any specific STP point code. Up to three digits, range: 0 to 255, see your network administrator for valid values. • The point code value must be 0-0-0 for HOME STP 1 if it is unequipped. • The value cannot be the same as the platform POINT CODE • The value cannot be the same as HOME STP 2 unless they are both 0-0-0 • The value cannot already be defined as a remote STP in form 3.2.5 • The value cannot be modified if its link set exists in form 3.1.1.

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Table 7-21 SS7 Office Parameters Form (CHN version) field descriptions (continued)

Field	Description
14-16	The HOME STP 2 field contains the point code of the second home STP adjacent to the platform through the link set. Up to three digits, range: 0 to 255, see your network administrator for valid values. • The point code value must be 0-0-0 for HOME STP 2 if it is unequipped. • The value cannot be the same as the platform POINT CODE • The value cannot be the same as HOME STP 1 unless they are both 0-0-0 • The value cannot already be defined as a remote STP in form 3.2.5 • The value cannot be modified if its link set exists in form 3.1.1.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

7.39.5 SS7 Office Parameters Form (gateway platform)

The gateway platform provides a mixed point code format platform to support communication with two networks with different point code formats. The platform can be installed as a gateway platform to support ITU and ANSI point code formats concurrently. You may configure specific SS7 link sets to be in the ITU network and others to be in the ANSI network.

The GATEWAY SS7 Office Parameters Form combines the fields from ITU and ANSI parameters forms, and provides a required value of GWIA in the POINT CODE FORMAT field to indicate that the platform is a gateway platform for ITU and ANSI point code systems.

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Figure 7-11 Form 2.6 SS7 Office Parameters Form (gateway platform)

```
Screen 1 of 1           GATEWAY OFFICE PARAMETERS FORM



*>  1. NETWORK ID                      _____
    2. OFFICE ID                       ___
    3. SEAS CLLI                       ___________
    4. POINT CODE FORMAT               ____
    5. NETWORK INDICATOR               ____
    6. DISTRIBUTED SS7                 _
    7. INTERNAL CARGO TIMER            ___

          ITU    ANSI POINT CODE
             POINT CODE   NETWORK ID     CLUSTER ID  MEMBER ID
             ----------   ----------     ----------  ----------
    LOCAL     8. ILP ____    10. LN  ___    11. LC ___    12. LM ___
    HOME STP 1         13. SN  ___    14. SC ___    15. SM ___
    HOME STP 2  ISP ____




NETWORK ID.  Not changeable.
```

Description of fields for SS7 Office Parameters Form (gateway platform)

The following table defines the fields used in the GATEWAY SS7 Office Parameters Form.

Table 7-22 SS7 Office Parameters Form (gateway platform) field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant to the platform. Up to three digits, read only.
3	The SEAS CLLI field contains the common language location identifier (CLLI), which defines the location of the Bell Communications Research, Inc. SEAS office. The platform identifies the city, state, building, and location within the building using the CLLI code. Up to eleven characters, see your system administrator for valid values.
4	The POINT CODE FORMAT field identifies the format. Up to four characters (GWIA for this form), read only.

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Table 7-22 SS7 Office Parameters Form (gateway platform) field descriptions (continued)

Field	Description
5	The NETWORK INDICATOR field indicates whether the location is international or national. Values: INTL or NATL, read only, default:NATL.
6	The DISTRIBUTED SS7 field indicates the option of the clustered SS7 configuration. One character, values: C (for clustered configuration of running SS7 processes as single stacks within a single SS7 I/O node) or M (for allowing SS7 processes to run as multiple SS7 stacks within a single SS7 I/O node), read only.
7	The INTERNAL CARGO TIMER field contains the cargo delay time among the SPA, S7SCH, and the S7TSSCH subsystem. Up to three digits, range: 20 to 100, default: 50, read only.
8	The POINT CODE field identifies the point code of the platform where all of the links in the link set are physically terminated. For ITU, fill in the ITU POINT CODE fields 8. For ANSI, fill in the ANSI POINT CODE fields 11–13, (NETWORK ID, CLUSTER ID, and MEMBER ID). • The ANSI POINT CODE must not be 0-0-0 • The ITU POINT CODE must not be in Form 3.2.2 when the point code type is SEP, and ANSI POINT CODE must not be in Form 3.2.2 when the point code type is SMEMBER. • The ITU POINT CODE must not be platform defined as a remote STP in Form 3.2.5 • This form cannot be updated if its POINT CODE is in use by form 11.1. See your network administrator for valid values.
9	The HOME STP 3 field contains the point code of the first ITU home STP adjacent to the platform through the link set in the ITU network. • The value must be different from ITU POINT CODE • The value must be different from HOME STP 4 • The value cannot be changed if its link set exists in Form 3.1.1 • HOME STP 3 cannot be defined as a remote STP in Form 3.2.5. Up to five digits, range: 0 to 16383, see your network administrator for valid values.

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Table 7-22 SS7 Office Parameters Form (gateway platform) field descriptions (continued)

Field	Description
10	The HOME STP 4 field contains the point code of the second ITU home STP adjacent to the platform through the link set in the ITU network. • The value must be different from ITU POINT CODE • The value must be different from HOME STP 3 • The value cannot be changed if its link set exists in Form 3.1.1 • HOME STP 4cannot be defined as a remote STP in Form 3.2.5. Up to five digits, range: 0 to 16383, see your network administrator for valid values.
14-16	The HOME STP 1 field contains the point code of the first ANSI home STP adjacent to the platform through the link set in the ANSI network. A home STP is one that receives outgoing global title messages not addressed to any specific STP point code. • The value must be different from ANSI POINT CODE • The value must be different from HOME STP 2 • The value cannot be changed if its link set exists in Form 3.1.1. Up to three digits, range: 0 to 255, see your network administrator for valid values.
17-19	The HOME STP 2 field contains the point code of the second ANSI home STP adjacent to the platform through the link set in the ANSI network. • The value must be different from ANSI POINT CODE • The value must be different from HOME STP 1 • The value cannot be changed if its link set exists in Form 3.1.1. Up to three digits, range: 0 to 255, see your network administrator for valid values.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.40 Form 2.7: TIMED SCHEDULING FORM

7.40.1 Overview

User System Language (USL) commands can be entered and executed at the command prompt, but some of them can be scheduled to run automatically. A command that is run automatically is called an event. Typical events are USL commands that create measurement reports, run audits, or clean up report files.

Events can be scheduled to run at timed intervals or at specified cycles. Both timed and cyclic events can only be scheduled by entering information in the database to indicate when the events should occur and how long they should be allowed to run.

Use this form to specify and update timed scheduled events. Each EVENT ID in this form specifies exact times when a specific USL COMMAND is scheduled to run. The event must be specified to include every desired command run-time instance throughout a week.

The three time attributes on this form specify when the events are scheduled. You must enter the **DAYS** of a week, the **HOURS** in those days, and the **MINUTES** in those hours when the command should be run.

You cannot schedule the same EVENT ID on different hours on different days, or on different minutes on different hours. You may use different EVENT IDs, however, to schedule the same command whenever it is needed.

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7.40.2 Illustration

Figure 7-12 Form 2.7: TIMED SCHEDULING FORM

```
Screen 1 of 1     TIMED SCHEDULING FORM


*>  1. EVENT            ________
    USL COMMAND  2.     ____________________________
        3.     ____________________________
                    4.  ____________________________
                    5.  ____________________________
                    6.  ____________________________
    7. DESCRIPTION      ________
    8. DAYS             ________
    9. HOURS            ________
   10. MINUTES          ________
   11. INHIBITED        ________
   12. MAX RUN TIME     ________


EVENT_ID: Enter a Unique Event ID.
```

7.40.3 System-supplied USL commands

Several predefined USL commands are included as part of the database. They are used to initiate measurement record collection and to delete old measurement records. Also, some USL commands that cannot be run from the craft terminal can be run by the scheduler. They are supplied as part of the system. These commands are summarized in Table 7-24, “TIMED SCHEDULING FORM predefined USL commands” (p. 920).

7.40.4 Description of fields for TIMED SCHEDULING FORM

The following table defines the fields for the TIMED SCHEDULING FORM. Refer to Figure 7-12, “Form 2.7: TIMED SCHEDULING FORM” (p. 917) for an illustration.

Table 7-23 TIMED SCHEDULING FORM field descriptions

Field	Description
1	The EVENT ID field contains a unique user-supplied identifier for the event described in the form. Up to eight characters. Default events and their associated USL commands are listed in Table 7-24, “TIMED SCHEDULING FORM predefined USL commands” (p. 920).

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Table 7-23 TIMED SCHEDULING FORM field descriptions (continued)

Field	Description
2-6	The USL COMMAND field defines the single USL command that will be run at the times specified in Fields 8 through 10. Up to 255 characters. Refer 7.40.3 "System-supplied USL commands" (p. 917) for information about the default commands that are supplied with the system. **`This field is split into five lines. Caution must be taken when populating those lines`** Refer to 7.9 "Updating a multi-line field" (p. 840) for more information about this type of form.
7	The DESCRIPTION field defines a user-supplied comment that is typically used to describe what the USL command does. Up to 48 characters.
	The DAYS, HOURS, and MINUTES fields specify when the event will run throughout the week (what days of the week, what hours of those days, and what minutes in those hours).
8	DAYS, up to 16 characters, enter at least one number corresponding to a day of the week from the following list. To specify more than one day, separate the numbers with commas. You may also specify a range of days, separating the beginning and ending days with a hyphen. Multiple ranges may be used as long as they are separated by commas. Values: • 0 = Sunday • 1 = Monday • 2 = Tuesday • 3 = Wednesday • 4 = Thursday • 5 = Friday • 6 = Saturday • * = All days For example, `1-3,5` schedules an event for Monday, Tuesday, Wednesday, and Friday.
9	HOURS, up to 48 characters, enter at least one number which corresponds to an hour of the day from the list shown below. To specify more than one hour value, separate the numbers with commas. You may also specify a range of hours, separating the beginning and ending hours with a hyphen. Multiple ranges may be specified as long as they are separated by commas.

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Table 7-23 TIMED SCHEDULING FORM field descriptions (continued)

Field	Description
9 Continued	values: • 0 = 12:00 AM (24:00) • 1 = 1:00 AM (01:00) • 2 = 2:00 AM (02:00) • 3 = 3:00 AM (03:00) • 4 = 4:00 AM (04:00) • 5 = 5:00 AM (05:00) • 6 = 6:00 AM (06:00) • 7 = 7:00 AM (07:00) • 8 = 8:00 AM (08:00) • 9 =9:00 AM (09:00) • 10 = 10:00 AM (10:00) • 11 = 11:00 AM (11:00) • 12 = 12:00 PM (12:00) • 13 = 1:00 PM (13:00) • 14 = 2:00 PM (14:00) • 15 = 3:00 PM (15:00) • 16 = 4:00 PM (16:00) • 17 = 5:00 PM (17:00) • 18 = 6:00 PM (18:00) • 19 = 7:00 PM (19:00) • 20 = 8:00 PM (20:00) • 21 = 9:00 PM (21:00) • 22 = 10:00 PM (22:00) • 23 = 11:00 PM (23:00) • * = all hours For example, `0-4,8,12,14-18` schedules events at midnight to 4 AM, 8 AM, noon, and 2 PM to 6 PM.
10	MINUTES, up to 48 characters, enter at least one number which corresponds to a minute of the hour. To specify more than one minute value, separate the numbers with commas. You may also specify a range of minutes, separating the beginning and ending minutes with a hyphen. Multiple ranges maybe specified as long as they are separated by commas. Values: 0 to 59, * (*=all minutes)

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Table 7-23 TIMED SCHEDULING FORM field descriptions (continued)

Field	Description
11	The INHIBITED field dictates whether an event can be specified and stored. One character, Y or N. Scheduling can be prohibited by setting this field to Y. On this form, INHIBITED is used to prevent the collection or deletion of measurements from occurring. There are times, such as when there is heavy platform database activity, that you do not want the measurement collection to run, so INHIBITED is set to Y.
12	The MAX RUN TIME defines a time limit that can be specified for the run time of the USL command to guard against a runaway process. Up to six digits, range: 1 to 999999.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

7.40.5 Description of system-supplied USL commands

Important! The scheduled times specified in these commands must not be changed.

The following table defines system-supplied USL commands.

Table 7-24 TIMED SCHEDULING FORM predefined USL commands

Event ID	USL command	Description
MEAS5MN	OP:MEAS=TRFC5,CLCT, NORPT	initiates 5-minute measurement collection (CLCT) with no measurement report generated (NORPT)
MEAS15MN	OP:MEAS=TRFC15,CLCT, NORPT	initiates 15-minute measurement collection (CLCT) with no measurement report generated (NORPT)
MEAS30MN	OP:MEAS=TRFC30,CLCT, NORPT	initiates 30-minute measurement collection (CLCT) with no measurement report generated (NORPT)
MEAS1HR	OP:MEAS=PLNTHR, CLCT,NORPT	initiates hourly measurement collection (CLCT) with no measurement report generated (NORPT)
MEAS24HR	OP:MEAS=PLNT24,CLCT, NORPT	initiates daily measurement collection (CLCT) with no measurement report generated (NORPT)

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Table 7-24 TIMED SCHEDULING FORM predefined USL commands (continued)

Event ID	USL command	Description
MEASDL5	OP:MEAS=TRFC5,DEL=3	deletes old 5-minute measurement records
MEASDL15	OP:MEAS=TRFC15, DEL=3	deletes old 15-minute measurement records
MEASDL30	OP:MEAS=TRFC30, DEL=3	deletes old 30-minute measurement records
MEASDLHR	OP:MEAS=PLNTHR, DEL=3	deletes old hourly measurement records
MEASDL24	OP:MEAS=PLNT24, DEL=3	deletes old daily measurement records
CLRTRN0	CLR:TRAN0, MSGCOUNT=8	clears transaction manager's private MSGH queues.
CLRDBTRC	CLR:DBTRACE,AGE=7	clears old PostgreSQL and ORACLE trace files
BKUPPG	BACKUP:SITEDB= PLATDB	back up the platform database
BKUPORA	BACKUP:SITEDB= ORACLE	backs up ORACLE database
SS7MPR	DUMP:MPR,TYPE=PREV, SLK=ALL	produces marginal performance reports

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7.41 Form 2.8: CYCLIC SCHEDULING FORM

7.41.1 Overview

Use this form to specify and update cyclic scheduled events. Each EVENT ID in this form specifies a single USL command that will be run according to a cyclic CLASS schedule (A, B, or C). All cyclic events that are defined by this form are included in one of these three pools of CLASS events.

The cyclic scheduler runs one cyclic event every minute according to an algorithm that selects that event from one of the three class pools. The algorithm for selection repeatedly selects the next event from a class according to the following class event pool sequence: A, B, A, C, A, B, A.

Class A events run more often than class B events, which run more often than class C events. The number of EVENT IDs assigned to each class pool directly affects how often a specific event of that class is run.

7.41.2 Illustration

Figure 7-13 Form 2.8: CYCLIC SCHEDULING FORM

```
Screen 1 of 1     CYCLIC SCHEDULING FORM


*>  1. EVENT            ________
    USL COMMAND  2.     ____________________________
        3.     ____________________________
                  4.    ____________________________
                  5.    ____________________________
                  6.    ____________________________
    7. DESCRIPTION      ________
    8. CLASS
    9. INHIBITED        ________
   10. MAX RUN TIME     ________


EVENT_ID: Enter a Unique Event ID.
```

7.41.3 Description of fields for CYCLIC SCHEDULING FORM

The following table defines the fields used in the CYCLIC SCHEDULING FORM. Refer to Figure 7-13, “Form 2.8: CYCLIC SCHEDULING FORM” (p. 922) for an illustration.

Table 7-25 CYCLIC SCHEDULING FORM field descriptions

Field	Description
1	The EVENT ID field contains a unique user-supplied identifier for the event described in the form. Up to eight characters.

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Table 7-25 CYCLIC SCHEDULING FORM field descriptions (continued)

Field	Description
2-6	The USL COMMAND field contains the single USL command that will be run according to the cyclic class schedule specified in the CLASS field. Up to 255 characters, refer to the documentation for information on valid messages and their syntax. **`This field is split into five lines. Caution must be taken when populating those lines`** Refer to 7.9 “Updating a multi-line field” (p. 840) for more information about this type of form.
7	The DESCRIPTION field contains the user-supplied comment typically used to describe what the USL command does. Up to 48 characters.
8	The CLASS field specifies the cyclic schedule that is used to run the command. Events are scheduled in relation to other cyclic events. The number of events in each class determines how often an event is run. One character, values: A, B, or C.
9	The INHIBITED field defines whether an event can be specified and stored. one character, Y or N. Scheduling can be prohibited by setting this field to Y.
10	The MAX RUN TIME field specifies a time limit for the run time of the USL command to guard against a runaway process. Up to six digits, range: 1-999999.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.42 Form 2.9: OAM PARAMETERS FORM

7.42.1 Overview

Use this form to read OA&M parameters that were provisioned when the system is installed. This form provides view-only information.

To query the data, press the **Return** key after entering the form.

7.42.2 Illustration

Figure 7-14 Form 2.9: OAM PARAMETERS FORM

```
Screen 1 of 1   OAM PARAMETERS FORM

*>  1. NETWORK ID          ________
*   2. OFFICE ID           ________
    3. OFFICE TYPE         ________
    4. RECORDING OFF TYPE  _____________
    5. RECORDING OFF ID    ________________
    6. DIAL BACK DN        ________
    7. MINOR ALARM         ________
    8. MAJOR ALARM         ________
    9. CRITICAL ALARM      ________
   10. AMA FLAG            ________
   11. OPTION              ________
   12. TAPE ID             ________________
   13. TAPE DAYS LEFT      ________
   14. START TIME          ________
   15. STOP TIME           ________


NOTE: This form is verify only. Values cannot be changed from this form.
```

7.42.3 Description of fields for OAM PARAMETERS FORM

The following table defines the fields in the OAM PARAMETERS FORM.

Table 7-26 OAM PARAMETERS FORM field descriptions

Field	Description
1	The NETWORK ID is pre-assigned. Up to five characters.
2	The OFFICE ID field is pre-assigned. Up to three digits.
3	The OFFICE TYPE is SCP.
4	The RECORDING OFF TYPE is used to complete automatic message accounting (AMA) records when writing to tape.

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Table 7-26 OAM PARAMETERS FORM field descriptions (continued)

Field	Description
5	The RECORDING OFF ID is used to complete AMA records when writing to tape.
6	The DIAL BACK DN is the directory number used during AMATPS to dial back to the host collector.
7	The MINOR ALARM is the AMA disk partition threshold for the minor alarm level.
8	The MAJOR ALARM is the AMA disk partition threshold for the major alarm level.
9	The CRITICAL ALARM is the AMA disk partition threshold for the critical alarm level.
10	The AMA FLAG is the indicator for pre-cutover or live office.
11	The OPTION indicates which form of writing billing records is valid: tape writing or teleprocessing.
12	The TAPE ID is used to fill the data set ID on tape labels.
13	The TAPE DAYS LEFT is the number of days until a tape written by the tape expires.
14	The START TIME is the start time of teleprocessing sessions.
15	The STOP TIME is the stop time of teleprocessing sessions.

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7.43 Form 2.10: OPERATIONS SYSTEMS SERVER FORM

7.43.1 Overview

Use this form to enable, disable, or modify an existing OS service, or add a new OS service. When modifying an existing service, you can update only the EQUIPPED and MAX CONNECTIONS fields. If you are adding a new service, you cannot use any of the reserved values in the SERVICE NAME or SERVICE CLASS fields.

7.43.2 Illustration

Figure 7-15 Form 2.10: OPERATIONS SYSTEMS SERVER FORM

```
Screen 1 of 1   OPERATIONS SYSTEMS SERVER FORM

*>  1. SERVICE NAME      ____________
      2. SERVICE CLIENT    ____
      3. SERVICE CLASS     ________
      4. EQUIPPED          _____________
      5. PORT NUMBER       ________
      6. MAX CONNECTIONS   ________
      EXEC   7.     ________________________________________
             8.     ________________________________________
             9.     ________________________________________
            10.     ________________________________________


SERVICE NAME: Enter a unique name.
```

7.43.3 Description of fields for OPERATIONS SYSTEMS SERVER FORM

The following table defines the fields used in the OPERATIONS SYSTEMS SERVER FORM. Refer to Figure 7-15, “Form 2.10: OPERATIONS SYSTEMS SERVER FORM” (p. 926) for an illustration.

Table 7-27 OPERATIONS SYSTEMS SERVER FORM field descriptions

Field	Description
1	The SERVICE NAME field contains the user-supplied name of the service, such as SCC. Up to 14 characters, this can be any unique name you want to assign for a new service, except for the following, which are reserved: /NTM_USLI, /NTM_LOG, /SEFM_CI, /SEFM_RMT, /SEFM_LOG, /SEFM_USLI, /NCE_USLI.

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Table 7-27 OPERATIONS SYSTEMS SERVER FORM field descriptions (continued)

Field	Description
2	The SERVICE CLIENT field contains the key to what type of client the server will have, such as LAB, NTM, or SEFM. This value must be the same as the value you enter in the SERVICE CLIENT field on Form 2.11: OPERATIONS SYSTEMS CLIENT FORM. Up to five characters.
3	The SERVICE CLASS field defines what service is going to be run on this port. Up to seven characters, values: USLI (User System Language Interface), TAILER (to tail a file), RMT (remote maintenance terminal), LOG (log file), CI (critical indicators), OTHER (user-assigned name)
4	The EQUIPPED field indicates whether you want this class enabled or disabled. One character, Y or N.
5	The PORT NUMBER field contains the number of the TCP/IP port that will be used for this service. A port number may not be assigned to more than one service. Up to five characters, values: 5000 to 65535.
6	The MAX CONNECTIONS field specifies the number of connections per service name, type and class. Up to two characters, values: 1 to 10.
7-10	The EXEC field lets you specify the command that will execute the service. Up to 240 characters. **This field is split into four lines. Caution must be taken when populating those lines** Refer to 7.9 “Updating a multi-line field” (p. 840) for more information about this type of form.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.44 Form 2.11: OPERATIONS SYSTEMS CLIENT FORM

7.44.1 Overview

Use this form to set up an IP address for a client that will perform remote maintenance operations for the server. Clients include the following:

- Network Traffic Manager (NTM): a function of the NetMinder system that provides traffic management capabilities.
- Switch Element Fault Management (SEFM): a product that provides the remote maintenance interface to various network elements, including the platform
- Lab: a client that provides users with the means to customize their remote maintenance capabilities.

You may enter data for more than one service client, but each service client must have its own unique IP address.

7.44.2 Illustration

Figure 7-16 Form 2.11: OPERATIONS SYSTEMS CLIENT FORM

```
Screen 1 of 1      OPERATIONS SYSTEMS CLIENT FORM

*>    1. SERVICE CLIENT     __________
      2. IP ADDRESS
         ___________________________________________________
```

7.44.3 Description of fields for OPERATIONS SYSTEMS CLIENT FORM

The following table defines the fields used in the OPERATIONS SYSTEMS CLIENT FORM. Refer to Figure 7-16, “Form 2.11: OPERATIONS SYSTEMS CLIENT FORM” (p. 928) for an illustration.

Table 7-28 OPERATIONS SYSTEMS CLIENT FORM field descriptions

Field	Description
1	The SERVICE CLIENT field contains the key to what type of client the server will have, such as LAB, NTM, or SEFM. This value must be the same as the value you enter in the SERVICE CLIENT field on Form 2.10: OPERATIONS SYSTEMS SERVER FORM. Up to five characters, SSE the values NTM and SEFM only for the functions of the NetMinder® system and SEFM services, respectively.

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Table 7-28 OPERATIONS SYSTEMS CLIENT FORM field descriptions (continued)

Field	Description
2	The IP ADDRESS field which is upto 32 characters, contains the IP address that can access the service type that you entered in the SERVICE CLIENT field. Being of IPv4 or IPv6 format, this should be the IP address that can access the service type that you entered in the SERVICE CLIENT field. See your system administrator for the correct value. Enter ALL if you want to indicate that any IP address should be recognized. . Enter * after partial IP address to match any trailing values. For example, in Ipv6 "**3004:0:1:***" with colon-separated representation, and in Ipv4 "**10.2.1.***" with dot-separated representation can be used. The meta-character (*) can be substituted for any trailing values that follow the partial IP address entered. This way any client with Ipv6 address starting with **3004:0:1** and with Ipv4 from **10.2.1.0** to **10.1.1.255** can access the service.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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Configuring the SS7 platform

7.45 Overview

7.45.1 Purpose

This section defines information for setting up, modifying, and maintaining SS7 services for the platform. Using the SS7 SERVICE CIRCUIT HADLER SUBMEU, you will set platform parameters, configure the platform network links, set performance thresholds and priorities, optimize timing, and configure other parameters to optimize the capabilities of the platform.

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7.46 Getting started

7.46.1 Overview

Before you begin any procedures for the SS7 SERVICE CIRCUIT HANDLER SUBMENU, make sure you have defined the control parameters for the platform. For information, refer to 7.39 “Form 2.6: SS7 Office Parameters Form” (p. 905).

7.46.2 Form versions

If you do not know what form version you're using (either ITU, ANSI, or CHN), go to Form 2.6: SS7 Office Parameters Form, and look at the POINT CODE FORMAT field.

The forms in this chapter, including corresponding descriptions, are marked for each version where appropriate. If the documentation does not specify a form version, use that form for ITU, ANSI, and CHN.

7.46.3 Gateway platform overview

The gateway platform provides a mixed point code format platform to support communication with two networks with different point code formats. The platform can be installed as a gateway platform to support ITU and ANSI point code formats concurrently. You may configure specific SS7 link sets to be in the ITU network and others to be in the ANSI network.

If your platform is a gateway platform, Submenus 3.1 through 3.4 will prompt you to select either ITU or ANSI form versions. You may enter 1 for ITU or 2 for ANSI. The default is ITU. After you select the form version, the appropriate form displays.

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7.47 Submenu 3: SS7 SERVICE CIRCUIT HANDLER SUBMENU

7.47.1 Overview

The SS7 SERVICE CIRCUIT HANDLER SUBMENU is the starting point for managing SS7 links and routing information for the platform, for managing SS7 signaling connections, for configuring SS7 over TCP/IP, and for performing various miscellaneous tasks, including the following:

- displaying and modifying message priorities for the MTP Layer 3 and SCCP messages
- studying measurements for originating point codes
- modifying or displaying marginal performance report threshold values
- assigning capabilities to network SSPs

7.47.2 Illustration

Figure 7-17 Submenu 3: SS7 SERVICE CIRCUIT HANDLER SUBMENU

The following illustrates Submenu 3: SS7 SERVICE CIRCUIT HANDLER SUBMENU.

```
Screen 1 of 1    SS7 SERVICE CIRCUIT HANDLER SUBMENU

Selection    Category
[ 1]      SS7 LINK MANAGEMENT SUBMENU
[ 2]       SS7 ROUTE MANAGEMENT SUBMENU
[ 3]      SIGNALING CONNECTION CONTROL SUBMENU
[ 4]      SS7 MISCELLANEOUS SUBMENU
[ 5]      SS7 OVER IP SUBMENU
[ 6]      SS7 CLUSTER SUBMENU
[ 7]      SS7 GLOBAL TITLE TRANSLATION SUBMENU
```

7.47.3

Before entering information related to SS7 services, you need to have already set up parameters for the platform. To do this, use 7.39 “Form 2.6: SS7 Office Parameters Form” (p. 905) (ITU, ANSI, or CHN versions).

7.47.4 Selecting a submenu

Depending on what system version you're running (ANSI, ITU, CHN, or gateway platform), Submenu 3: SS7 SERVICE CIRCUIT HANDLER SUBMENU will display the following submenus:

- 7.48 “Submenu 3.1: SS7 LINK MANAGEMENT SUBMENU” (p. 937)
- 7.49 “Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version)” (p. 939)
- 7.50 “Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ANSI version)” (p. 940)
- 7.51 “Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (gateway platform)” (p. 941)
- 7.52 “Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ITU version)” (p. 942)

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- 7.56 “Submenu 3.4: SS7 MISCELLANEOUS SUBMENU” (p. 949)
- 7.57 “Submenu 3.5: SS7 OVER IP SUBMENU” (p. 952)
- 7.58 “Submenu 3.6. SS7 CLUSTER SUBMENU” (p. 954)
- 7.59 “Submenu 3.7 SS7 GLOBAL TITLE TRANSLATION SUBMENU” (p. 955)

For ANSI, ITU and CHN, select a submenu to display all the forms associated with that submenu. Select the appropriate form and then perform the data operations following the procedures described in the 7.11 “Database Operations” (p. 843) section.

For gateway (i.e., GWIA) platform, select a submenu to display all the forms/submenus associated that submenu. Select the appropriate form or a GWIA submenu. If it's a submenu, two forms (1 for ITU and 2 for ANSI) associated with the GWIA submenu will be displayed, and you can then select appropriate form.

Perform the appropriate data operations following the procedures described in the 7.11 “Database Operations” (p. 843) section.

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7.48 Submenu 3.1: SS7 LINK MANAGEMENT SUBMENU

7.48.1 Overview

The SS7 LINK MANAGEMENT SUBMENU is the starting point for configuring the following:

- MTP Layer 2 links, timers, and thresholds
- controller boards
- link sets
- SAAL links
- MTP Layer 3 timer values

7.48.2 Illustration

Figure 7-18 Submenu 3.1: SS7 LINK MANAGEMENT SUBMENU (ITU, ANSI, and CHN versions)

```
                                SS7 LINK MANAGEMENT SUBMENU

Selection     Category
[  1]         LINK SET FORM
[  2]         INTERFACE CONTROLLER BOARD FORM
[  3]         MTP2 LINK FORM
[  4]         SAAL LINK FORM
[  5]         MTP3 LINK TIMERS FORM
```

7.48.3 Illustration

Figure 7-19 Submenu 3.1: SS7 LINK MANAGEMENT SUBMENU (platform GATEWAY version)

```
                                SS7 LINK MANAGEMENT SUBMENU

Selection     Category
[  1]        GWIA LINK SET FORM SUBMENU
[  2]         INTERFACE CONTROLLER BOARD FORM
[  3]         GWIA MTP2 LINK FORM SUBMENU
[  4]         SAAL LINK FORM
[  5]         GWIA MTP3 LINK TIMERS FORM SUBMENU
```

7.48.4 Available forms

The SS7 LINK MANAGEMENT SUBMENU contains the following forms:

- 7.60 “Form 3.1.1: LINK SET FORM” (p. 957)
- 7.64 “Form 3.1.2: INTERFACE CONTROLLER BOARD FORM” (p. 964)
- 7.65 “Form 3.1.3: MTP2 LINK FORM” (p. 966)

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- 7.68 “Form 3.1.4: SAAL LINK FORM” (p. 975)
- 7.69 “Form 3.1.5: MTP3 LINK TIMERS FORM” (p. 981)

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7.49 Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version)

7.49.1 Overview

The SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version) is the starting point for performing the following tasks:

- adding a new routing pattern index (RPI) or modifying, displaying, or deleting existing RPI data
- adding new SS7 point code or modifying, displaying, or deleting existing SS7 point code
- modifying or displaying the current SS7 MTP Layer 3 route management control timer values
- providing the SS7 alias point codes for the local platform point code
- entering point codes of adjacent remote STPs

7.49.2 Illustration

Figure 7-20 Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version)

The following illustrates Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version)

```
Screen 1 of 1     SS7 ROUTE MANAGEMENT SUBMENU

Selection    Category
[ 1]     ROUTING PATTERN INDEX FORM
[ 2]     POINT CODE FORM
[ 3]     ROUTE TIMERS FORM
[ 4]     ALIAS POINT CODE FORM
[ 5]     ADJACENT REMOTE STP POINT CODE FORM
[ 6]     ADJACENT END NODE POINT CODE FORM
```

7.49.3 Available forms

The SS7 ROUTE MANAGEMENT SUBMENU (ITU and CHN version) contains the following forms:

- 7.72 “Form 3.2.1: ROUTING PATTERN INDEX FORM” (p. 988)
- 7.73 “Form 3.2.2: POINT CODE FORM” (p. 990)
- 7.77 “Form 3.2.3: ROUTE TIMERS FORM” (p. 996)
- 7.78 “Form 3.2.4: ALIAS POINT CODE FORM” (p. 998)
- 7.82 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM” (p. 1004)
- 7.86 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM” (p. 1010)

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7.50 Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ANSI version)

7.50.1 Overview

The SS7 ROUTE MANAGEMENT SUBMENU (ANSI version) is the starting point for the performing the following tasks:

- adding a new routing pattern index (RPI) or modifying, displaying, or deleting existing RPI data
- adding new SS7 point code or modifying, displaying, or deleting existing SS7 point code
- modifying or displaying the current SS7 MTP Layer 3 route management control timer values
- providing the SS7 alias point codes for the local platform point code

7.50.2 Illustration

Figure 7-21 Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ANSI version)

The following illustrates Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (ANSI version)

```
Screen 1 of 1     SS7 ROUTE MANAGEMENT SUBMENU

Selection    Category
[ 1]     ROUTING PATTERN INDEX FORM
[ 2]     POINT CODE FORM
[ 3]     ROUTE TIMERS FORM
[ 4]     ALIAS POINT CODE FORM
[ 5]     ADJACENT REMOTE STP POINT CODE FORM
[ 6]     ADJACENT END NODE POINT CODE FORM
```

7.50.3 Available forms

The SS7 ROUTE MANAGEMENT SUBMENU (ANSI version) contains the following forms:

- 7.72 “Form 3.2.1: ROUTING PATTERN INDEX FORM” (p. 988)
- 7.73 “Form 3.2.2: POINT CODE FORM” (p. 990)
- 7.77 “Form 3.2.3: ROUTE TIMERS FORM” (p. 996)
- 7.78 “Form 3.2.4: ALIAS POINT CODE FORM” (p. 998)
- 7.82 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM” (p. 1004)
- 7.86 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM” (p. 1010)

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7.51 Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (gateway platform)

7.51.1 Overview

The SS7 ROUTE MANAGEMENT SUBMENU (gateway platform version) is the starting point for the performing the following tasks:

- adding a new routing pattern index (RPI) or modifying, displaying, or deleting existing RPI data
- adding new SS7 point code or modifying, displaying, or deleting existing SS7 point code
- modifying or displaying the current SS7 MTP Layer 3 route management control timer values
- providing the SS7 alias point codes for the local platform point code
- entering point codes of adjacent remote STPs

7.51.2 Illustration

Figure 7-22 Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (gateway platform)

The following illustrates Submenu 3.2: SS7 ROUTE MANAGEMENT SUBMENU (gateway platform)

```
Screen 1 of 1     SS7 ROUTE MANAGEMENT SUBMENU

Selection    Category
[ 1]      ROUTING PATTERN INDEX FORM
[ 2]      POINT CODE FORM
[ 3]      ROUTE TIMERS FORM
[ 4]      ALIAS POINT CODE FORM
[ 5]      ADJACENT REMOTE STP POINT CODE FORM
[ 6]      ADJACENT END NODE POINT CODE FORM
```

7.51.3 Available forms

The SS7 ROUTE MANAGEMENT SUBMENU (gateway platform version) contains the following forms:

- 7.72 “Form 3.2.1: ROUTING PATTERN INDEX FORM” (p. 988)
- 7.73 “Form 3.2.2: POINT CODE FORM” (p. 990)
- 7.77 “Form 3.2.3: ROUTE TIMERS FORM” (p. 996)
- 7.78 “Form 3.2.4: ALIAS POINT CODE FORM” (p. 998)
- 7.82 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM” (p. 1004)
- 7.86 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM” (p. 1010)

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7.52 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ITU version)

7.52.1 Overview

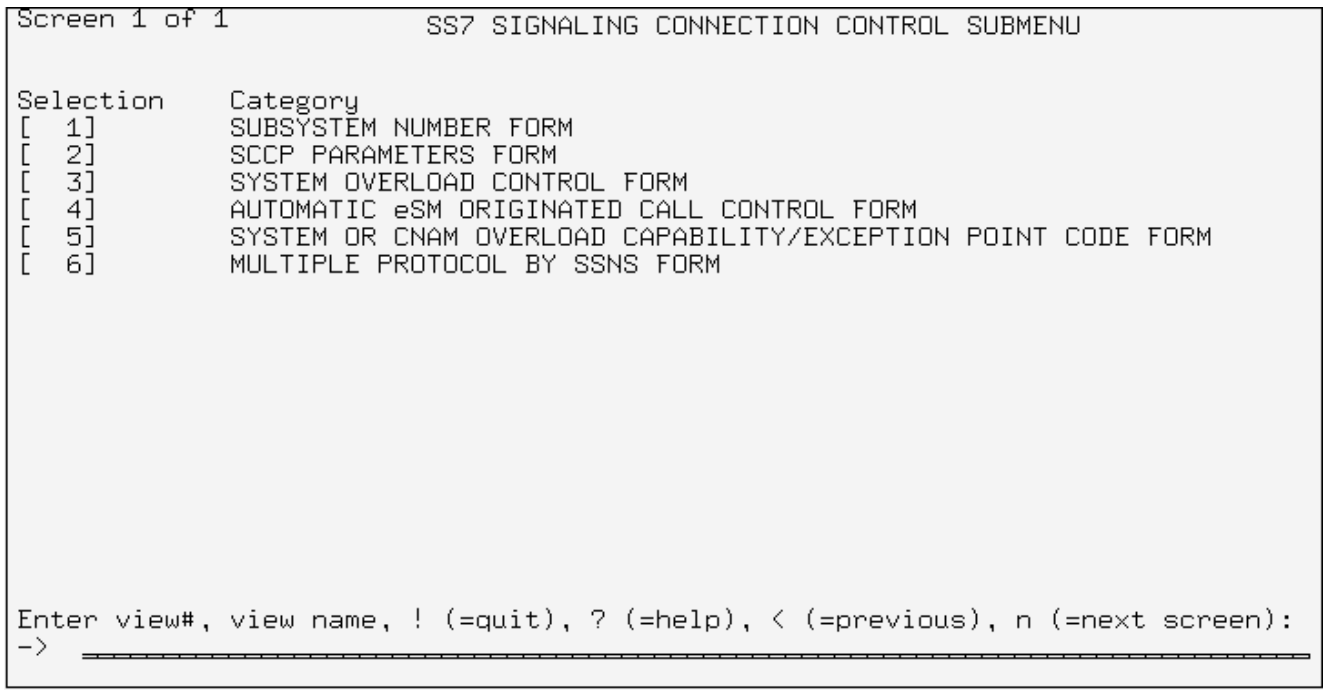
The SIGNALING CONNECTION CONTROL SUBMENU (ITU version) is the starting point for performing the following tasks:

- adding, modifying, or deleting SSN data
- modifying the current SS7 SCCP layer parameters and timer values
- modifying the gap and duration level values for the eSM overload
- modifying the gap and duration levels for ITU eSM-originated ACG
- establishing a list of point codes that support ACG components on TCAP responses
- enabling/disabling the SCCP management capability
- allowing specification of an SSN protocol, routing type, and overload by the calling party SSN

7.52.2 Illustration

The following illustrates Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ITU version)

Figure 7-23 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ITU version)



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7.52.3 Available forms

The SIGNALING CONNECTION CONTROL SUBMENU (ITU version) contains the following forms:

- 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016)
- 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032)
- 7.95 “Form 3.3.3: System Overload Control Form” (p. 1035)
- 7.98 “Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version)” (p. 1042)
- 7.100 “Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM” (p. 1049)
- 7.104 “Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM” (p. 1053)

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7.53 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ANSI version)

7.53.1 Overview

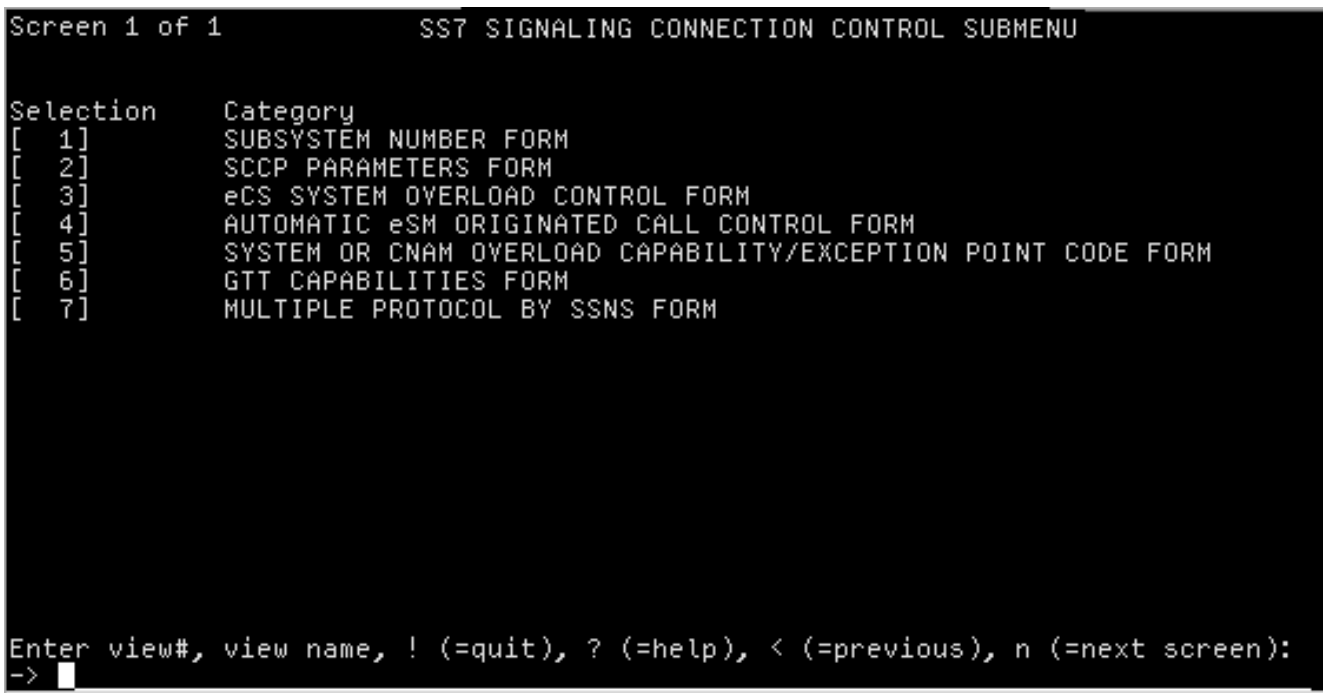
The SIGNALING CONNECTION CONTROL SUBMENU (ANSI version) is the starting point for performing the following tasks:

- adding, modifying, or deleting SSN data
- modifying the current SS7 SCCP layer parameters and timer values
- modifying the gap and duration level values for the eSM overload
- modifying the gap and duration levels for ITU eSM-originated ACG
- establishing a list of point codes that support ACG components on TCAP responses
- providing various GTT feature capabilities
- allowing specification of an SSN protocol, routing type, and overload by the calling party SSN

7.53.2 Illustration

The following illustrates Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ANSI version)

Figure 7-24 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (ANSI version)



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7.53.3 Available forms

The SIGNALING CONNECTION CONTROL SUBMENU (ANSI) contains the following forms:

- 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016)
- 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032)
- 7.95 “Form 3.3.3: System Overload Control Form” (p. 1035)
- 7.99 “Form 3.3.4: AUTOMATIC eSM ORIGINATED CALL CONTROL FORM (ANSI version)” (p. 1046)
- 7.100 “Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM” (p. 1049)
- 7.104 “Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM” (p. 1053)

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7.54 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (CHN version)

7.54.1 Overview

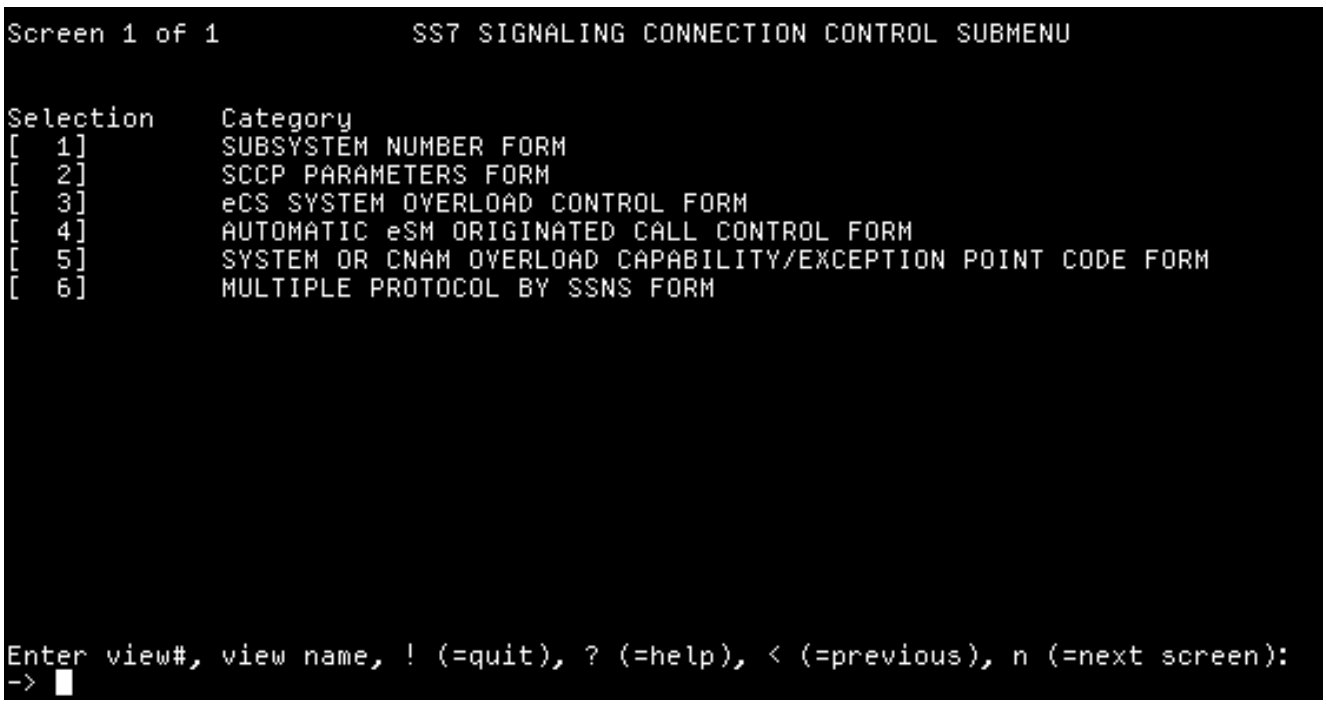
The SIGNALING CONNECTION CONTROL SUBMENU (CHN version) is the starting point for performing the following tasks:

- adding, modifying, or deleting SSN data
- modifying the current SS7 SCCP layer parameters and timer values
- modifying the gap and duration level values for the eSM overload
- modifying the gap and duration levels for CHN eSM-originated ACG
- establishing a list of point codes that support ACG components on TCAP responses
- allowing specification of an SSN protocol, routing type, and overload by the calling party SSN

7.54.2 Illustration

The following illustrates Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (CHN version)

Figure 7-25 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (CHN version)



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7.54.3 Available forms

The SIGNALING CONNECTION CONTROL SUBMENU (ITU and CHN version) contains the following forms:

- 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016)
- 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032)
- 7.95 “Form 3.3.3: System Overload Control Form” (p. 1035)
- 7.98 “Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version)” (p. 1042)
- 7.100 “Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM” (p. 1049)
- 7.104 “Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM” (p. 1053)

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7.55 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (gateway platform version)

7.55.1 Overview

The SIGNALING CONNECTION CONTROL SUBMENU (gateway platform version) is the starting point for performing the following tasks:

- adding, modifying, or deleting SSN data
- modifying the current SS7 SCCP layer parameters and timer values
- modifying the gap and duration level values for the eSM overload
- modifying the gap and duration levels for ITU eSM-originated ACG
- establishing a list of point codes that support ACG components on TCAP responses
- providing various GTT feature capabilities
- allowing specification of an SSN protocol, routing type, and overload by the calling party SSN

7.55.2 Illustration

Figure 7-26 Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (gateway platform version)

The following illustrates Submenu 3.3: SIGNALING CONNECTION CONTROL SUBMENU (gateway platform version)

```
Screen 1 of 1   SIGNALING CONNECTION CONTROL SUBMENU

Selection  Category
[ 1]    GWIA SUBSYSTEM NUMBER FORM SUBMENU
[ 2]    SCCP PARAMETERS FORM
[ 3]    GWIA eCS SYSTEM OVERLOAD CONTROL FORM SUBMENU
[ 4]    GWIA AUTOMATIC eSM ORIGINATED CALL CONTROL FORM SUBMENU
[ 5]     GWIA SYSTEM/CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE SUBMENU
[ 6]    MULTIPLE PROTOCOL BY SSNS FORM
```

7.55.3 Available forms

The SIGNALING CONNECTION CONTROL SUBMENU (ANSI) contains the following forms:

- 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016)
- 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032)
- 7.95 “Form 3.3.3: System Overload Control Form” (p. 1035)
- 7.99 “Form 3.3.4: AUTOMATIC eSM ORIGINATED CALL CONTROL FORM (ANSI version)” (p. 1046)
- 7.100 “Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM” (p. 1049)
- 7.104 “Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM” (p. 1053)

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7.56 Submenu 3.4: SS7 MISCELLANEOUS SUBMENU

7.56.1 Overview

The SS7 MISCELLANEOUS SU<BMENU is the starting point for performing the following tasks:

- modifying message priorities of MTP Layer 3 messages
- modifying message priorities of SCCP messages
- assigning capabilities to network SSPs
- modifying marginal performance report threshold values
- studying measurements for originating point codes (OPCs)

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7.56.2 Illustration

Figure 7-27 Submenu 3.4: SS7 MISCELLANEOUS SUBMENU (ANSI, ITU. and CHN versions)

The following illustrates Submenu 3.4: SS7 MISCELLANEOUS SUBMENU (ANSI, ITU. and CHN versions)

```
Screen 1 of 1            SS7 MISCELLANEOUS SUBMENU

Selection    Category
[  1]        MTP3 MESSAGE PRIORITIES FORM
[  2]        SCCP MESSAGE PRIORITIES FORM
[  3]        SSP CAPABILITY FORM
[  4]        MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM
[  5]        SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM
[  6]        SPECIAL STUDY MEASUREMENTS FOR OPC FORM
```

7.56.3 Illustration

The following illustrates Submenu 3.4: SS7 MISCELLANEOUS SUBMENU (gateway platform version)

Figure 7-28 Submenu 3.4: SS7 MISCELLANEOUS SUBMENU (gateway platform version)

```
Screen 1 of 1                  SS7 MISCELLANEOUS SUBMENU


Selection    Category
[  1]        MTP3 MESSAGE PRIORITIES FORM
[  2]        SCCP MESSAGE PRIORITIES FORM
[  3]        GWIA SSP CAPABILITY FORM SUBMENU
[  4]        MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM
[  5]        SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM
[  6]        GWIA SPECIAL STUDY MEASUREMENTS FOR OPC FORM SUBMENU









Enter view#, view name, ! (=quit), ? (=help), < (=previous), n (=next screen):
-> _
```

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7.56.4 Available forms

The SS7 MISCELLANEOUS SUBMENU contains the following forms:

- 7.106 “Form 3.4.1: MTP3 MESSAGE PRIORITIES FORM” (p. 1055)
- 7.107 “Form 3.4.2: SCCP MESSAGE PRIORITIES FORM” (p. 1058)
- 7.108 “Form 3.4.3: SSP CAPABILITY FORM” (p. 1060)
- 7.112 “Form 3.4.4: MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM” (p. 1065)
- 7.113 “Form 3.4.5: SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM” (p. 1068)
- 7.114 “Form 3.4.6: SPECIAL STUDY MEASUREMENTS FOR OPC FORM” (p. 1070)

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7.57 Submenu 3.5: SS7 OVER IP SUBMENU

7.57.1 Overview

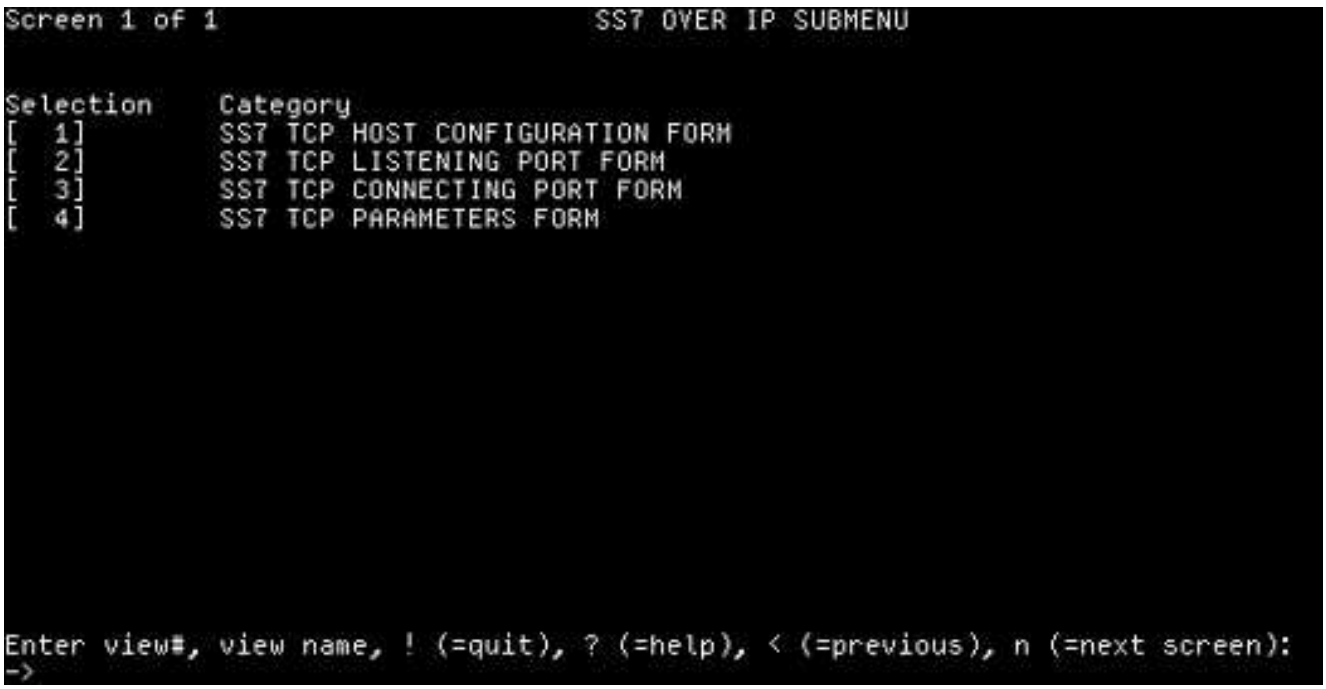
The SS7 OVER IP SUBMENU is the starting point for performing the following tasks:

- specifying the base characteristics of a host machine that is used to send and/or receive INAP messages over TCP/IP
- configuring a port to listen for client requests
- configuring a port to connect to a server over the TCP/IP network
- specifying the parameters that are required to send INAP messages over a TCP/IP network

7.57.2 Illustration

The following illustrates Submenu 3.5: SS7 OVER IP SUBMENU

Figure 7-29 Submenu 3.5: SS7 OVER IP SUBMENU



7.57.3 Available forms

The SS7 OVER IP SUBMENU contains the following forms:

- 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074)
- 7.119 “Form 3.5.2: SS7 TCP LISTENING PORT FORM” (p. 1077)
- 7.120 “Form 3.5.3: SS7 TCP CONNECTING PORT FORM” (p. 1079)

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- 7.121 “Form 3.5.4: SS7 TCP PARAMETERS FORM” (p. 1081)

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7.58 Submenu 3.6. SS7 CLUSTER SUBMENU

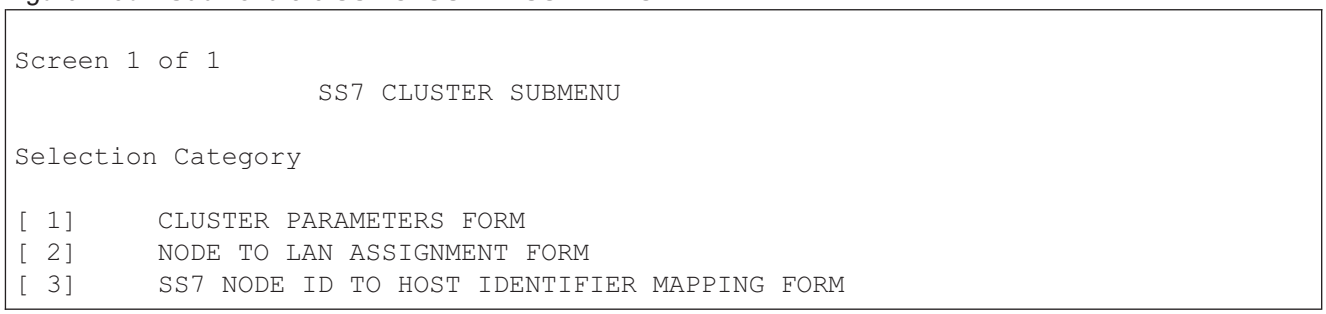
7.58.1 Overview

The SS7 CLUSTER SUBMENU is the starting point for performing the following tasks:

- view the control parameters of clustering SS7
- associate each node with a LAN ID when a WAN is used to connect part of the cluster
- document the UNAME for up to 2 Nodes (will only be displayed in Linux version of the menu.)

7.58.2 Illustration

Figure 7-30 Submenu 3.6 SS7 CLUSTER SUBMENU



7.58.3 Available forms

The SS7 CLUSTER SUBMENU contains the following forms:

- 7.122 “Form 3.6.1.CLUSTER PARAMETERS FORM” (p. 1084)
- 7.123 “Form 3.6.2. NODE TO LAN ASSIGNMENT FORM” (p. 1088)
- 7.124 “Form 3.6.3: SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM” (p. 1091)

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7.59 Submenu 3.7 SS7 GLOBAL TITLE TRANSLATION SUBMENU

7.59.1 Overview

The SS7 GLOBAL TITLE SUBMENU is the starting point for performing the following tasks

- enable or disable the SCCP management capability.
- provision GTT information (Translation Type, Nature of Address Indicator and Numbering Plan) and associated Translation Group ID.
- provide GTT destinations (point codes and SSN's) and index to the backup destinations.
- define the translation group mask.
- define maximum number of translations that a fixed digit string can have.
- define the index to the GTT Destinations Form for a given Translation Group ID, Fixed Digits String and Primary and Secondary String, and determine if final translation is allowed.
- define the GTT Destination Group.

7.59.2 Illustration

Figure 7-31 Submenu 3.7 SS7 GLOBAL TITLE TRANSLATION SUBMENU

```
Screen 1 of 1
                          SS7 GLOBAL TITLE TRANSLATION SUBMENU

Selection    Category
[  1]        GTT CAPABILITIES FORM
[  2]        GTT GLOBAL TITLE INDICATOR FORM
[  3]        GTT DESTINATIONS FORM
[  4]        GTT TRANSLATION GROUP MASK FORM
[  5]        GTT FIXED DIGITS STRING FORM
[  6]        GTT TRANSLATION GROUP FORM
[  7]        GTT DESTINATION GROUP FORM


Enter view#, view name, ! (=quit), ? (=help), < (=previous),
n (=next screen):
-> ____________________________________________________________
____________________
```

7.59.3 Available forms

The SS7 GLOBAL TITLE TRANSLATION SUBMENU contains the following forms:

- 7.125 “Form 3.7.1. SCCP MANAGEMENT FORM (ITU/CHN only)” (p. 1094)
- 7.126 “Form 3.7.1 GTT CAPABILITIES FORM (ANSI only)” (p. 1095)
- 7.127 “Form 3.7.2 GTT GLOBAL TITLE INDICATOR FORM” (p. 1096)

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- 7.128 “Form 3.7.3 GTT DESTINATIONS FORM (ANSI, CHN, ITU)” (p. 1098)
- 7.129 “Form 3.7.4 GTT TRANSLATION GROUP MASK FORM” (p. 1103)
- 7.130 “Form 3.7.5 GTT FIXED DIGITS STRING FORM” (p. 1106)
- 7.131 “Form 3.7.6: GTT TRANSLATION GROUP FORM” (p. 1108)
- 7.132 “Form 3.7.7: GTT DESTINATION GROUP FORM” (p. 1110)

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7.60 Form 3.1.1: LINK SET FORM

7.60.1 Overview

When platform communicates with an adjacent point code such as SSP (Service Switching Point) or STP (Signaling Transfer Point), the platform must be connected to each with separate sets of SS7 links, called "link sets." Use the LINK SET FORM to add a new link set to an adjacent point code or to modify, display, or delete an existing link set.

A link set is a group of SS7 links with a common destination and common characteristics. For example, they may all have a transmission speed of 56 kbps or clear T1/E1 channel.

One link set must be assigned to each of the adjacent point codes, but the order is not important. A link set cannot be added to the adjacent point code if the adjacent point code (e.g. SSP or STP) is not defined in one of the following forms:

- 7.39 “Form 2.6: SS7 Office Parameters Form” (p. 905)
- 7.83 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ITU version)” (p. 1005)
- 7.84 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version)” (p. 1006)
- 7.85 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version)” (p. 1008)
- 7.87 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ITU version)” (p. 1011)
- 7.88 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ANSI version)” (p. 1012)
- 7.89 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM (CHN version)” (p. 1014)

7.60.2 Available form versions

Three form versions are available for Form 3.1.1:

- 7.61 “LINK SET FORM (ITU version)” (p. 958)
- 7.62 “LINK SET FORM (ANSI version)” (p. 960)
- 7.63 “LINK SET FORM (CHN version)” (p. 962)

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7.61 LINK SET FORM (ITU version)

7.61.1 Illustration

Figure 7-32 Form 3.1.1: LINK SET FORM (ITU version)

```
Screen 1 of 1          LINK SET FORM



*> 1. LINK SET                      ____________
   2. COMBINED LINK SET             ____________
   3. ADJACENT POINT CODE           ____________
   4. ADJACENT POINT CODE CLLI      ____________
   5. LOCAL SECONDARY POINT CODE    ____________
   6. VIRTUAL LINK SET              ____________



LINK SET. Enter a value between 1 to 32.
```

7.61.2 Description of fields for LINK SET FORM (ITU version)

The following table defines the fields in the LINK SET FORM (ITU version). Refer to Figure 7-32, “Form 3.1.1: LINK SET FORM (ITU version)” (p. 958) for an illustration.

Table 7-29 LINK SET FORM (ITU version) field descriptions

Field	Description
1	The LINK SET field contains the identification number of the link set. Up to two digits, the valid value range is 1-32.
2	The COMBINED LINK SET field indicates whether or not the link set is part of any combined link set. Typically, you use a combined link set to implement outgoing traffic load sharing between links that do not belong to the same link set. The valid value range is 0-32. A valid link set number indicates an ID number of the link set that forms a combined link set with the link set that is specified in field 1. A value of 0 (zero) is used to indicate a link set that is not part of any combined link set. Note that combined link set cannot contain more than two link sets.

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Table 7-29 LINK SET FORM (ITU version) field descriptions (continued)

Field	Description
3	The ADJACENT POINT CODE identifies the point code where all the links within the same link set are physically terminated. The point code must be defined in the SS7 Office Parameters Form as home STPs, in the ADJACENT REMOTE STP POINT CODE FORM as a remote STP, or in the ADJACENT END NODE POINT CODE FORM as an end node. This field is not usually changed through RC/V procedures. Up to five digits, range: range 1 to 16383.
4	The ADJACENT POINT CODE CLLI field identifies the common language location identifies (CLLI) code for the Adjacent Point Code. All exception reports that are related to the link set contain the same CLLI code. Therefore, destinations to which the report refers can be located easily. Eleven characters exactly, format:`ccccssbbuuu` where `cccc` = city, town, or locality `ss` = state or province `bb` = building code `uuu` = traffic unit ID (the physical location)
5	The LOCAL SECONDARY POINT CODE (LSPC) allows additional local point codes to be defined for the platform. This field associates a point code with a link set. This enables a single physical platform to connect via multiple linksets to a single adjacent point code (i.e. to an STP) by supporting multiple local point codes. The range for this field is 0-16383, 0 means no local secondary point code is defined.
6	The VIRTUAL LINK SET (VLS) field indicates whether the link set is part of any virtual link set. A virtual link set is composed of a set of up to 8 direct link sets in non-cluster configuration, which have the same adjacent point code. In the cluster configuration, a virtual link set can be composed of a set of up to 4 direct link sets, which have the different adjacent point code. Outgoing traffic that uses this virtual link set will perform load sharing evenly over the direct link sets. The range of this field is 0-32, 0 means this link set does not belong to any virtual link set.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.62 LINK SET FORM (ANSI version)

7.62.1 Illustration

Figure 7-33 Form 3.1.1: LINK SET FORM (ANSI version)

```
Screen 1 of 1          LINK SET FORM


*> 1. LINK SET                      ____________
   2. COMBINED LINK SET             ____________
   ADJACENT POINT CODE
    3. NETWORK ID               ____
       4. CLUSTER ID               ____
       5. MEMBER ID                ____
   6. ADJACENT POINT CODE CLLI     ____________



LINK SET. Enter a value between 1 to 32.
```

7.62.2 Description of fields for LINK SET FORM (ANSI version)

The following table defines the fields in the LINK SET FORM (ANSI version).

Table 7-30 LINK SET FORM (ANSI version) field descriptions

Field	Description
1	The LINK SET field contains the identification number of the link set. The valid value range is 1-32. Note that each adjacent point code must have different link set ID numbers.
2	The COMBINED LINK SET field indicates whether or not the link set is part of any combined link set. Typically, you use a combined link set to implement outgoing traffic load sharing between links that do not belong to the same link set. The valid value range is 0-32. A valid link set number indicates an ID number of the link set that forms a combined link set with the link set that i specified in field 1. A value of 0 (zero) is used to indicate a link set that is not part of any combined link set. Note that combined link set cannot contain more than two link sets.

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Table 7-30 LINK SET FORM (ANSI version) field descriptions (continued)

Field	Description
3-5	The ADJACENT POINT CODE identifies the point code of the adjacent point code where all the links in the link set are physically terminated. The point code must be defined in the SS7 Office Parameters Form as home STPs, in the ADJACENT REMOTE STP POINT CODE FORM as remote STPs, or in the ADJACENT END NODE POINT CODE FORM as an end node. This field is not usually changed through RC/V procedures. The point code consists of a NETWORK ID with a range of 0-255, a CLUSTER ID with a range of 0-255, and a MEMBER ID with a range of 0-255. The adjacent point code value must not be 0-0-0.
6	The ADJACENT POINT CODE CLLI field identifies the common language location identifies (CLLI) code for the Adjacent Point Code. All exception reports that are related to the link set contains the same CLLI code. Therefore, destinations to which the report refers can be located easily. Eleven characters exactly, format:`ccccssbbuuu` where `cccc` = city, town, or locality `ss` = state or province `bb` = building code `uuu` = traffic unit ID (the physical location)

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.63 LINK SET FORM (CHN version)

7.63.1 Illustration

Figure 7-34 Form 3.1.1: LINK SET FORM (CHN version)

```
Screen 1 of 1          LINK SET FORM



*> 1. LINK SET                      ____________
   2. COMBINED LINK SET             ____________
   ADJACENT POINT CODE
       3. MAIN AREA ID              ____
       4.  SUB-AREA ID              ____
       5.     POINT ID              ____
   6. ADJACENT POINT CODE CLLI      ____________



LINK SET. Enter a value between 1 to 32.
```

7.63.2 Description of fields for LINK SET FORM (CHN version)

The following table defines the fields in the LINK SET FORM (CHN version).

Table 7-31 LINK SET FORM (CHN version) field descriptions

Field	Description
1	The LINK SET FIELD contains the identification number of the link set. The valid value range is 1-32. Note that adjacent point code must have different link set ID numbers.
2	The COMBINED LINK SET field indicates whether or not the link set is part of any combined link set. Typically, you use a combined link set to implement outgoing traffic load sharing between links that do not belong to the same link set. The valid value range is 0-32. A valid link set number indicates an ID number of the link set that forms a combined link set with the link set that i specified in field 1. A value of 0 (zero) is used to indicate a link set that is not part of any combined link set. Note that combined link set cannot contain more than two link sets.

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Table 7-31 LINK SET FORM (CHN version) field descriptions (continued)

Field	Description
3-5	The ADJACENT POINT CODE identifies the point code of the adjacent point code where all the links in the link set are physically terminated. There are three components: MAIN AREA ID, SUB-AREA ID, and POINT ID. The point code must be defined in Form 2.6: SS7 Office Parameters Form as home STPs, in the ADJACENT REMOTE STP POINT CODE FORM as remote STPs, or in the ADJACENT END NODE POINT CODE FORM as end nodes. This field is not usually changed through RC/V procedures. The valid range is 0-255 for each of the three components. The adjacent point code value must not be 0-0-0.
6	The ADJACENT POINT CODE CLLI field identifies the common language location identifies (CLLI) code for the adjacent point code. All exception reports that are related to the link set contain the same CLLI code. Therefore, destinations to which the report refers can be located easily. Eleven characters exactly, format:`ccccssbbuuu` where `cccc` = city, town, or locality `ss` = state or province `bb` = building code `uuu` = traffic unit ID (the physical location)

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.64 Form 3.1.2: INTERFACE CONTROLLER BOARD FORM

7.64.1 Overview

Use this form to provide the interface controller board ID with the device name, which is assigned automatically when you enter the member number.

7.64.2 Illustration

Figure 7-35 Form 3.1.2: INTERFACE CONTROLLER BOARD FORM

```
Screen 1 of 1
                    INTERFACE CONTROLLER BOARD FORM

*>    1.  GROUP NUMBER <NODE ID>          0
*     2.  MEMBER NUMBER <BOARD NUMBER>    _________
      3.  DEVICE NAME                     _________
      4.  LINK CLASS                      _________



GROUP NUMBER <NODE ID>. Enter 0-31 <0 for non-clustering SS7>.
```

7.64.3 Description of fields

The following table defines the fields in the INTERFACE CONTROLLER BOARD FORM. Refer to Figure 7-35, “Form 3.1.2: INTERFACE CONTROLLER BOARD FORM” (p. 964) for an illustration.

Table 7-32 Form 3.1.2: INTERFACE CONTROLLER BOARD FORM field descriptions

Field	Description
1	The GROUP NUMBER is the number of the telecom server. Up to two digits, range: 0 to 31 for clustering SS7, 0 to 31 for virtual cluster nodes in multiple SS7 processes support. See for more information.
2	The MEMBER NUMBER (BOARD NUMBER) is the number of the SS7 board. One digit, range: 1 to 4.
3	The DEVICE NAME is provided automatically when you enter a value in the MEMBER NUMBER field. For example, if MEMBER NUMBER (BOARD NUMBER)=1, SSVII0 will be automatically assigned as the DEVICE NAME.
4	The LINK CLASS specifies which type of links the board supports. Up to six characters, values are SAAL, M2PA, MTP2AA, MTP2E1 or MTP2T1.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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Important! No data corresponding to *SCTP* link class will be allowed in either *MTP2 LINK FORM* or *SAAL LINK FORM*.

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7.65 Form 3.1.3: MTP2 LINK FORM

7.65.1 Overview

The various functions of message handling require extensive error checking, fault recovery, and coordination of hardware and software modules. These and other network management functions depend on the use of timers. Using the MTP2 LINK FORM, you can configure the duration of various standard timers for your particular implementation. More specifically, you can assign MTP2 links to the link set specified in 7.60 “Form 3.1.1: LINK SET FORM” (p. 957), and set MTP Layer 2 timers and MTP Layer 2 thresholds.

Each timer is defined by its ANSI or CCITT identifying number. For detailed descriptions of the function of each timer, refer to the following:

- *American National Standard for Telecommunications, Signaling System Number 7 (SS7), Message Transfer Part (MTP)* (for ANSI protocol)
- *CCITT Recommendations Q. 703* (for ITU protocol)

7.65.2 Removing a link from service

Major parameters, such as link set number and link code, cannot be changed unless you remove the link from service.

For example, link `x-y-z` (where `x` = group number, `y` = board number, and `z` = port number) can be taken out of service by entering the following poke commands:

```
4xyz - Block link x-y-z
2xyz - Remove link x-y-z
```

The MTP2 timers may need to be changed to make them consistent with the data at the STP end of the link. MTP Layer 2 thresholds are not typically changed through the RC/V system.

7.65.3 Available form versions

Two form versions are available for the MTP2 LINK FORM:

- 7.66 “MTP2 LINK FORM (ITU version)” (p. 967)
- 7.67 “MTP2 LINK FORM (ANSI version)” (p. 970)

7.65.4 Gateway platform

For gateway platform, the submenu prompts you to select 1 for ITU or 2 for ANSI.

Important! For gateway platform, if two sets of data (ITU and ANSI) co-exist, the QR and QU operations will retrieve both sets of data. When you are doing a QU operation you need to make sure you are updating the correct set of data.

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7.66 MTP2 LINK FORM (ITU version)

7.66.1 Illustration

Figure 7-36 Form 3.1.3: MTP2 LINK FORM (ITU version)

```
Screen 1 of 1              MTP2 LINK FORM



*>  1. GROUP NUMBER (NODE ID)          4. LINK SET NUMBER    ___
*   2. SUBGROUP NUMBER (BOARD NUMBER)      5. LINK CODE (SLC)   ___
*   3. MEMBER NUMBER (PORT/CHANNEL NUMBER)  6. ASSOCIATION INDEX ___

       LINK TIMERS                      LINK THRESHOLDS
       -----------                      ---------------
    7. ALIGNED AND READY   (T1) ____       15. SUERM             ___
    8. NOT ALIGNED         (T2) ____
    9. ALIGNED             (T3) ____
   10. NORMAL PROVE-IN     (T4N)____
   11. EMERGENCY PROVE-IN  (T4E)____
   12. LOCAL CONGESTION    (T5) ____
   13. REMOTE CONGESTION   (T6) ____
   14. DELAY OF ACK        (T7) ____



GROUP NUMBER (NODE ID). Enter 0-31.
```

7.66.2 Description of fields for MTP2 LINK FORM (ITU version)

The following table defines the fields in the MTP2 LINK FORM (ITU version). Refer to Figure 7-36, “Form 3.1.3: MTP2 LINK FORM (ITU version)” (p. 967) for an illustration.

Table 7-33 MTP2 LINK FORM (ITU version) field descriptions

Field	Description
1-3	The GROUP NUMBER (NODE ID), SUBGROUP NUMBER (BOARD NUMBER), and MEMBER NUMBER (PORT/CHANNEL NUMBER) fields should be populated in a manner consistent with DAP 107XX0 for MTP2E1 HDC (high density channelized) links or MTP2AA links. In DAP 107XX0, XX = node id. This display action page indicates the links that can be added to a link set. It also displays node id, board numbers, and port/channel (link) numbers. However, note that the DAP page displays only up to the first eight links of each board even if there can be a maximum of 120 links per board for MTP2E1. GROUP NUMBER, two digit, range: 0 to 31. SUBGROUP NUMBER, one digit, range: 1 to 4. MEMBER NUMBER, up to three digits, range: 1 to 120 for MTP2E1. For MTP2AA, the range is 1-4 (HDCii) or 1-8 (HDCiii). For M2PA, the range is 1-20.

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Table 7-33 MTP2 LINK FORM (ITU version) field descriptions (continued)

Field	Description
4	The LINK SET NUMBER field contains the link set number. You can find this number on the LINK SET FORM for the STP to which this link terminates. Up to two digits, range: 1 to 32.
5	The LINK CODE field contains the link code, which must be coordinated with your STP administrator. Up to two digits, range: 0 to 15.
6	ASSOCIATION INDEX, the field map SS7 link to corresponding SCTP association, the range is 0 to 52, 0 means not used.
LINK TIMERS	MTP Level 2 software uses timer values to implement the ITU Level 2 protocol. Refer to *CCITT 1988, Q. 703* for information on valid values and population rules.
7-9	The ALIGNED AND READY, NOT ALIGNED, and ALIGNED fields are used during the initial alignment procedure of the MTP Level 2 protocol. ALIGNED AND READY, timer: T1, six digits, range: 40000 to 50000 milliseconds. For MTP2AA link class, the range is 25000 to 350000 milliseconds. For M2PA the range is 1000 to 60000 milliseconds. NOT ALIGNED, timer: T2, six digits, range: 1000 to 60000 milliseconds for M2PA, 5000 to 150000 milliseconds otherwise. ALIGNED, timer: T3, four digits, range: 1000 to 1500 milliseconds for MTP2E1 and M2PA. For MTP2AA link class, the range is 1000 to 2000 milliseconds.
10	The NORMAL PROVE-IN field specifies the length of time to monitor the link error rate after it is aligned with the far end. The link is brought into service if the error rate threshold is not exceeded during this interval. Timer: T4N, five digits, 7500 to 9500 milliseconds for MTP2E1. For MTP2AA link class, the range is 3000 to 70000 milliseconds. For M2PA, the range is 1000 to 60000 milliseconds.
11	The EMERGENCY PROVE-IN field specifies the length of time to monitor the link error rate after an emergency alignment. This is typically used when trying to align the first link in the link set. Timer: T4E, three digits, range: 400 to 600 milliseconds.
12	The LOCAL CONGESTION field specifies the time interval between sending status indication busy (SIB) signals during periods of congestion in the receive buffer. Timer: T5, two to three digits, range: 80 to 120 milliseconds.
13	The REMOTE CONGESTION field specifies the maximum time duration for sending the SIB. The link is declared out of service if the SIB is still being received after this limit is reached. Timer: T6, four digits, range: 3000 to 6000 milliseconds.

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Table 7-33 MTP2 LINK FORM (ITU version) field descriptions (continued)

Field	Description
14	The DELAY OF ACK field specifies the maximum allowable time between sending an MSU and receiving an acknowledgment from the MTP Level 2 protocol at the far end. Level 1 corresponds to the lowest-priority messages. Timer: T7, three to four digits, range: 500 to 2000 milliseconds.
LINK THRESHOLD	Refer to *CCITT 1988, Q. 703* for information on valid values and population rules.
15	The SUERM field contains a value that helps determine whether a link is declared out of service if the signaling unit error rate monitor (SUERM) thresholds are exceeded. Two to three digits, range: 64 to 192.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.67 MTP2 LINK FORM (ANSI version)

7.67.1 Overview

For ANSI users, messages that are passed from MTP Layer 3 to MTP Layer 2 are held in a transmit buffer for processing. When the transmit buffer approaches the saturation level, the following strategy is employed to help relieve congestion and avoid loss of data:

- When the buffer ONSET level is reached, a warning message is sent to indicate that the buffer is nearing saturation.
- At the buffer DISCARD level, messages are discarded.
- Processing is resumed when the buffer returns to the ABATEMENT level.

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7.67.2 Illustration

Figure 7-37 Form 3.1.3: MTP2 LINK FORM (ANSI version)

```
Screen 1 of 1                MTP2 LINK FORM



*>  1. GROUP NUMBER (NODE ID)          4. LINK SET NUMBER   ___
*   2. SUBGROUP NUMBER (BOARD NUMBER)      5. LINK CODE (SLC)   ___
*   3. MEMBER NUMBER (PORT/CHANNEL NUMBER)  6. ASSOCIATION INDEX ___

       LINK TIMERS                      LINK THRESHOLDS
       -----------                      ---------------
    7. ALIGNED AND READY   (T1) ____       15. ABATE LEVEL 1     ____
    8. NOT ALIGNED         (T2) ____       16. ONSET LEVEL 1     ____
    9. ALIGNED             (T3) ____       17. DISCARD LEVEL 1   ____
   10. NORMAL PROVE-IN     (T4N)____       18. ABATE LEVEL 2     ____
   11. EMERGENCY PROVE-IN  (T4E)____       19. ONSET LEVEL 2     ____
   12. LOCAL CONGESTION    (T5) ____       20. DISCARD LEVEL 2   ____
   13. REMOTE CONGESTION   (T6) ____       21. ABATE LEVEL 3     ____
   14. DELAY OF ACK        (T7) ____       22. ONSET LEVEL 3     ____
                                           23. DISCARD LEVEL 3   ____
                                           24. SUERM             ____



SUBGROUP NUMBER (BOARD NUMBER). Enter 1-4.
```

7.67.3 Description of fields for MTP2 LINK FORM (ANSI version)

The following table defines the fields in the MTP2 LINK FORM (ANSI version). Refer to for an illustration.

Table 7-34 MTP2 LINK FORM (ANSI version) field descriptions

Field	Description
1-3	The GROUP NUMBER, SUBGROUP NUMBER (BOARD NUMBER), and MEMBER NUMBER (PORT/CHANNEL NUMBER) fields should be populated in a manner consistent with DAP 107XX0 (XX = node id). DAP 107XX0 indicates the links that can be added to a link set. It also shows node id, board numbers, and port/channel (link) numbers. For multiple SS7 processes support, the node id is the virtual cluster node id, refer the System Administration Guide for multiple SS7 processes support. However, note that the DAP page displays only up to the first eight links of each board even if there can be a maximum of 64 links per board for MTP2T1. GROUP NUMBER, two digit, range: 0 to 31. SUBGROUP NUMBER, one digit, range: 1 to 4. MEMBER NUMBER, up to two digits, range: 1 to 64 for MTP2T1, 1-20 for M2PA.

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Table 7-34 MTP2 LINK FORM (ANSI version) field descriptions (continued)

Field	Description
4	The LINK SET NUMBER field contains the link set number. You can find this number on the LINK SET FORM for the STP to which this link terminates. Up to two digits, range: 1 to 32.
5	The LINK CODE field contains the link code, which must be coordinated with your STP administrator. Up to two digits, range: 0 to 15.
6	ASSOCIATION INDEX, the field map SS7 link to corresponding SCTP association, the range is 0 to 52, 0 means not used.
LINK TIMERS	MTP Level 2 software uses timer values to implement the ANSI Level 2 protocol. Refer to *ANSI T1.111-1988, Chapter T1.111.3* for information on valid values and population rules.
7-9	The ALIGNED AND READY, NOT ALIGNED, and ALIGNED fields are used during the initial alignment procedure of the MTP Level 2 protocol. ALIGNED AND READY, timer: T1, five digits, range: 13000 to 30000 milliseconds. For M2PA, the range is 1000 to 60000 milliseconds. NOT ALIGNED, timer: T2, four or five digits, range: 5000 to 14000 milliseconds. For M2PA, the range is 1000 to 60000 milliseconds. ALIGNED, timer:T3, four or five digits, range: 5000 to 14000 milliseconds. For M2PA, the range is 1000 to 1500 milliseconds.
10	The NORMAL PROVE-IN field specifies the length of time to monitor the link error rate after it is aligned with the far end. The link is brought into service if the error rate threshold is not exceeded during this interval. Timer: T4N, four digits, range: 2070 to 2530 milliseconds. For M2PA, the range is 1000 to 60000 milliseconds.
11	The EMERGENCY PROVE-IN field specifies the length of time to monitor the link error rate after an emergency alignment. This is typically used when trying to align the first link in the link set. Timer: T4E, three digits, range: 540 to 660 milliseconds. For M2PA, the range is 400 to 660 milliseconds.
12	The LOCAL CONGESTION field specifies the time interval between sending status indication busy (SIB) signals during periods of congestion in the receive buffer. Timer: T5, two to three digits, range: 80 to 120 milliseconds.
13	The REMOTE CONGESTION field specifies the maximum time duration for sending the SIB. The link is declared out of service if the SIB is still being received after this limit is reached. Timer: T6, four digits, range: 3000 to 6000 milliseconds. For M2PA, the range is 1000 to 60000 milliseconds.
14	The DELAY OF ACK field specifies the maximum allowable time between sending an MSU and receiving an acknowledgment from the MTP Level 2 protocol at the far end. Timer: T7, three to four digits, range: 500 to 2000 milliseconds.

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Table 7-34 MTP2 LINK FORM (ANSI version) field descriptions (continued)

Field	Description
LINK THRESHOLD	Refer to *ANSI T1.111-1988, Chapter T1.111.3 and Chapter T1.111.4, Sections 3.6.2.1 and 3.6.2.2* for information on valid values and population rules.
15,18,21	Populate the ABATE LEVEL 1, ABATE LEVEL 2, and ABATE LEVEL 3 fields according to the following standards: If the congestion discard level (level 1, 2, or 3 for abate level 1, 2, and 3, respectively) has been set, and the number of bytes in the transmit buffer is now equal to or less than the abate level value, an indication to resume processing MSUs with priority 0, 1, and 2 (for abate levels 1, 2, and 3, respectively) is sent to MTPL3. Note that Level 1 corresponds to the lowest priority messages. Three to four digits, range: • ABATE LEVEL 1: 100 to 5800 • ABATE LEVEL 2: 300 to 6000 • ABATE LEVEL 3: 500 to 6200. The range must be a multiple of 100. The following condition must be satisfied: the value of the ABATE LEVEL must be less than the value of ONSET LEVEL, which must be less than the value of DISCARD LEVEL for all three Levels.
16,19,22	Populate the ONSET LEVEL 1, ONSET LEVEL 2, and ONSET LEVEL 3 fields according to the following standards: If the congestion discard level (level 1, 2, or 3 for onset level 1, 2, and 3, respectively) has not been set, and the number of bytes in the transmit buffer is now equal to or greater than the onset level value, an indication to reduce processing MSUs with priority 0, 1, and 2 (for abate levels 1, 2, and 3, respectively) is sent to MTPL3. Three to four digits, range: • ONSET LEVEL 1: 200 to 5900 • ONSET LEVEL 2: 400 to 6100 • ONSET LEVEL 3: 600 to 6300. The range must be a multiple of 100. The following condition must be satisfied: for Levels 1 and 2, the value of the ONSET LEVEL must be less than the value of the next highest ABATE LEVEL.

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Table 7-34 MTP2 LINK FORM (ANSI version) field descriptions (continued)

Field	Description
17,20,23	Populate the DISCARD LEVEL 1, DISCARD LEVEL 2, and DISCARD LEVEL 3 fields according to the following standards: If the congestion discard level (level 1, 2, or 3 for discard level 1, 2, and 3, respectively) has not been set, and the number of bytes in the transmit buffer is now equal to or greater than the discard level value, an indication to discard MSUs with priority 0, 1, and 2 (for abate levels 1, 2, and 3, respectively) is sent to MTPL3. Three to four digits, range: • DISCARD LEVEL 1: 300 to 6000 • DISCARD LEVEL 2: 500 to 6200 • DISCARD LEVEL 3: 700 to 6400. The range must be a multiple of 100. The following condition must be satisfied: for Levels 1 and 2, the value of the DISCARD LEVEL must be less than the value of the next highest ONSET LEVEL.
24	The SUERM field contains a value that helps determine whether a link is declared out of service if the signaling unit error rate monitor (SUERM) thresholds are exceeded. Two to three digits, range: 64 to 192.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.68 Form 3.1.4: SAAL LINK FORM

7.68.1 Overview

The various functions of message handling require extensive error checking, fault recovery, and coordination of hardware and software modules. These and other network management functions depend on the use of timers. Using the SAAL LINK FORM, you can configure the duration of various standard timers for your particular implementation. More specifically, you can assign SS7 links to the link set specified in 7.60 “Form 3.1.1: LINK SET FORM” (p. 957), and change the parameters that are associated with a link.

Each timer is defined by its ANSI identifying number. For detailed descriptions of the function of each timer, refer to the *American National Standard for Telecommunications, Signaling System Number 7 (SS7), Message Transfer Part (MTP)*.

The major parameters, such as link set number and link code, cannot be changed unless the link is removed from service. For information, refer to 7.65.2 “Removing a link from service” (p. 966).

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7.68.2 Illustration

Figure 7-38 Form 3.1.4: SAAL LINK FORM

```
Screen 1 of 1              SAAL LINK FORM

*>  1. GROUP NUMBER                      _     4. LINK SET NUMBER  _     6. VCI _
*   2. SUBGROUP NUMBER (BOARD NUMBER)    _     5. LINK CODE (SLC)  _     7. VPI _
*   3. MEMBER NUMBER (PORT NUMBER)       _

    SSCOP/SSCF PARAMETERS     SAAL LM PARAMETERS        LINK CONG THRES
    8. MAX CC          __     20. MAX NRP          __    31. ABATE L1    ____
    9. MAX PD          ____   21. TMR REPT-SREC    ___   32. ONSET L1    ____
   10. MAX STAT        ____   22. TMR NO-CREDIT    ___   33. DISCARD L1  ____
   11. TMR CC          ____   23. T SUP            ___   34. ABATE L2    ____
   12. TMR KEEP-ALIVE  ___    24. T LOSS           ___   35. ONSET L2    ____
   13. TMR NO-RSP      ____   25. ALPHA            ___   36. DISCARD L2  ____
   14. TMR POLL        ___    26. THRES            ___   37. ABATE L3    ____
   15. TMR IDLE        ____   27. TMR TAU          ___   38. ONSET L3    ____
   16. AERM T1         __     28. N                __    39. DISCARD L3  ____
   17. AERM T2         ___    29. N BLK            __
   18. AERM T3         _____  30. TMR FORCE-PROV   __
   19. N1              ______
```

7.68.3 Description of fields for SAAL LINK FORM

The following table defines the fields in the SAAL LINK FORM. Refer to for an illustration.

Table 7-35 SAAL LINK FORM field descriptions

Field	Description
1-3	The GROUP NUMBER, SUBGROUP NUMBER (BOARD NUMBER), and MEMBER NUMBER (PORT NUMBER) fields should be populated in a manner consistent with DAP 107XX0 (XX =group number or node id). DAP107XX0 indicates status of the links that can be added to a link set. It also shows group number (node id), board numbers, and port (link) numbers. GROUP NUMBER, two digit, range: 0 to 31. SUBGROUP NUMBER, one digit, range: 1 to 4. MEMBER NUMBER, two digit, range: 1 to 4 for ATMII boards or 1-8 for HDC3 boards.
4	The LINK SET NUMBER field contains the link set number. You can find this number on the LINK SET FORM for the STP to which this link terminates. Up to two digits, Range: 1 to 32.

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Table 7-35 SAAL LINK FORM field descriptions (continued)

Field	Description
5	The LINK CODE field contains the link code, which must be coordinated with your SAAL administrator. Up to two digits, Range: 0 to 15.
6	The VCI field contains the virtual circuit identification. This field is read-only. One digit, range: 5 (hardcoded)
7	The VPI field contains the virtual path identification. This field is read-only. One digit, range: 0 (hardcoded)
SSCOP/SSCF PARAM	
8	The MAX CC field contains the maximum connection control count value for unacknowledged BGN, END, ER, or RS DUs. Up to two digits, range: 1 to 10 PDUs, default: 4.
9	The MAX PD field contains the maximum connection control count value for unacknowledged BGN, END, ER, or RS DUs. Up to four digits, range: 5 to 2120 PDUs, default: 500.
10	The MAX STAT field contains the maximum number of SD PDUs (protocol data units) sent between POLL PDUs. Up to four digits, range: 3 to 1021 PDUs, default: 67.
11	The TMR CC field contains the timer between transmission of unacknowledged BGN, END, ER, or RS PDUs. Three to four digits, range: 100 to 2000 milliseconds, default: 200 milliseconds.
12	The TMR KEEP-ALIVE field contains the maximum time interval during which at least one STAT PDU must be received. Two to three digits, range: 25 to 500 milliseconds, default: 100 milliseconds.
13	The TMR NO-RSP field contains the maximum time interval during which at least one STAT PDU must be received. Three to four digits, range: 200 to 2000 milliseconds, default: 1500 milliseconds.
14	The TMR POLL field contains the timer for 3622 cells/sec signaling rate. Two to three digits, range: 25 to 500 milliseconds, default: 100 milliseconds.
15	The TMR IDLE field contains the maximum time of the IDLE phase of an SSCOP connection. Two to four digits, range: 25 to 1000 milliseconds, default: 100 milliseconds.
16	The AERM T1 field contains the time between link release and re-establishment during alignment. Up to two digits, range: 1 to 15 seconds, default: 5 seconds.

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Table 7-35 SAAL LINK FORM field descriptions (continued)

Field	Description
17	The AERM T2 field contains the time SSCF will attempt alignment. Two to three digits, range: 15 to 180 seconds, default: 120 seconds.
18	The AERM T3 field contains the time between providing PDUs. Three to five digits, range: 200 to 25000 microseconds, default: 1000 microseconds.
19	The N1 field contains the PDUs sent during normal proving. Three to six digits, range: 500 to 500000 PDUs, default: 60000 PDUs.
SAAL LM Parameters	
20	The MAX NRP field contains the maximum number of retransmitted SSCOP PDUs. Up to two digits, range: 1 to 10, default: 1.
21	The TMR REPT-SREC field contains the minimum interval between reports of SSCOP recovery. Two to four digits, range: 30-1440 minutes, default: 60 minutes.
22	The TMR NO-CREDIT field contains the maximum interval without credit. Four digits, range: 1000 to 6000 milliseconds, default: 1500 milliseconds.
23	The T SUP field contains the superblock size. Two to three digits, range: 10 to 600 seconds, default: 120 seconds.
24	The T LOSS field contains the STAT loss limit. Three to Five digits, range: 500 to 10000 milliseconds, default: 1300 milliseconds.
25	The ALPHA field contains the exponential smoothing factor. Up to four digits, range: 0 to 1000, default: 100.
26	The THRES field contains the threshold for comparing the running quality of service. Up to four digits, range: 0 to 1000, default: 244.
27	The TMR TAU field contains the error monitoring interval. Two to three digits, range: 25 to 250 milliseconds, default: 100 milliseconds.
28	The N field contains the monitoring intervals after 400 ms error event. Up to two digits, range: 1 to 25, default: 9.
29	The N BLK field contains the monitoring intervals per block. Up to two digits, range: 1 to 25, default: 3.
30	The TMR FORCE-PROV field contains the interval for force proving. Up to digits, range: 0-20 minutes, default: 10 minutes.

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Table 7-35 SAAL LINK FORM field descriptions (continued)

Field	Description
LINK CONG THRES	
31,34,37	Populate the ABATE LEVEL 1, ABATE LEVEL 2, and ABATE LEVEL 3 fields according to the following standards: If the congestion discard level (level 1, 2, or 3 for abate level 1, 2, and 3, respectively) has been set, and the number of bytes in the transmit buffer is now equal to or less than the abate level value, an indication to resume processing MSUs with priority 0, 1, and 2 (for abate levels 1, 2, and 3, respectively) is sent to MTPL3. Two to four digits, range: • ABATE LEVEL 1: 10 to 9991, default: 3000 • ABATE LEVEL 2: 13 to 9994, default: 4000 • ABATE LEVEL 3: 16 to 9997, default: 5000. The following condition must be satisfied: the value of the ABATE LEVEL must be less than the value of ONSET LEVEL, which must be less than the value of DISCARD LEVEL for all three Levels.
32,35,38	Populate the ONSET LEVEL 1, ONSET LEVEL 2, and ONSET LEVEL 3 fields according to the following standards: If the congestion discard level (level 1, 2, or 3 for onset level 1, 2, and 3, respectively) has not been set, and the number of bytes in the transmit buffer is now equal to or greater than the onset level value, an indication to reduce processing MSUs with priority 0, 1, and 2 (for abate levels 1, 2, and 3, respectively) is sent to MTPL3. Two to four digits, range: • ONSET LEVEL 1: 11 to 9992, default: 3100 • ONSET LEVEL 2: 14 to 9995, default: 4100 • ONSET LEVEL 3: 17 to 9998, default: 5100. The following condition must be satisfied: for Levels 1 and 2, the value of the ONSET LEVEL must be less than the value of the next highest ABATE LEVEL.

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Table 7-35 SAAL LINK FORM field descriptions (continued)

Field	Description
33,36,39	Populate the DISCARD LEVEL 1, DISCARD LEVEL 2, and DISCARD LEVEL 3 fields according to the following standards: If the congestion discard level (level 1, 2, or 3 for discard level 1, 2, and 3, respectively) has not been set, and the number of bytes in the transmit buffer is now equal to or greater than the discard level value, an indication to discard MSUs with priority 0, 1, and 2 (for abate levels 1, 2, and 3, respectively) is sent to MTPL3. Two to four digits, range: • DISCARD LEVEL 1: 12 to 9993, default: 3200 • DISCARD LEVEL 2: 15 to 9996, default: 4200 • DISCARD LEVEL 3: 18 to 9999, default: 5200. The following condition must be satisfied: for Levels 1 and 2, the value of the DISCARD LEVEL must be less than the value of the next highest ONSET LEVEL.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.69 Form 3.1.5: MTP3 LINK TIMERS FORM

7.69.1 Overview

Use this form to assign MTP3 link timers to the link set specified in 7.60 “Form 3.1.1: LINK SET FORM” (p. 957), and to set SS7 MTP Layer 3 timers and MTP Layer 3 thresholds. If the timer values are not defined, the platform will use default timer values for that link.

7.69.2 Modifying timer values

You may modify timer values to make the link consistent with the STP, or to increase or decrease the frequency of periodic signaling link tests.

The various functions of message handling require extensive error checking, fault recovery, and coordination of hardware and software modules. These and other network management functions depend on the use of timers.

Both the ANSI and ITU versions of the MTP3 LINK TIMERS FORM let you configure the duration of various standard timers for your particular implementation. Each timer is identified on the screen by its ANSI or CCITT (ITU) identifying number (for example, T12).

Important! Timer T19, CRAFT REFERRAL, is only for ANSI, not ITU.

7.69.3 Available form versions

Two form versions are available for Form 3.1.5:

- 7.70 “MTP3 LINK TIMERS FORM (ITU version)” (p. 982)
- 7.71 “MTP3 LINK TIMERS FORM (ANSI version)” (p. 985)

7.69.4 References

Refer to the following for more detailed descriptions of the function of each timer:

- For ANSI protocol, refer to the *American National Standard Institute for Telecommunications, Signaling System Number 7 (SS7), Message Transfer Part (MTP)* document.
- For CCITT (ITU) protocol, refer to the *CCITT Q. 704 Recommendation* document.

If you delete the link using the MTP2 LINK FORM or the SAAL LINK FORM, the corresponding record in the MTP3 LINK TIMERS FORM is also deleted.

7.69.5 Gateway platform

For gateway platform, the user interaction form prompts you to select 1 for ITU or 2 for ANSI. The default is ITU.

Important! For gateway platform, if two sets of data (ITU and ANSI) co-exist, the QR and QU operations will retrieve both sets of data. When you are doing a QU operation you need to make sure you are updating the correct set of data.

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7.70 MTP3 LINK TIMERS FORM (ITU version)

7.70.1 Illustration

Figure 7-39 Form 3.1.5: MTP3 LINK TIMERS FORM (ITU version)

```
Screen 1 of 1
                          MTP3 LINK TIMERS FORM

*>  1. GROUP NUMBER (TS NUMBER)
*   2. SUBGROUP NUMBER (BOARD NUMBER)          _
*   3. MEMBER NUMBER (PORT/CHANNEL NUMBER)    ___
    4. CHANGEOVER DELAY              (T1) _____
    5. CHANGEOVER ACK                (T2) _____
    6. TIME CNTRLD DVRSION           (T3) _____
    7. FIRST CHANGEBACK ACK          (T4) _____
    8. SECOND CHANGEBACK ACK         (T5) _____
    9. LINK UNINHIBIT ACK           (T12) _____
   10. FORCED UNINHIBIT ACK         (T13) _____
   11. LINK INHIBIT ACK             (T14) _____
   12. ALIGNMENT FAILURE            (T17) _____
   13. LOCAL INHIBIT TEST           (T22) ___
   14. REMOTE INHIBIT TEST          (LT1) ___
   15. LINK TEST ACK                (LT2) ___
   16. PERIODIC LINK TEST

GROUP NUMBER. Enter a value between 0 and 31.
```

7.70.2 Description of fields for MTP3 LINK TIMERS FORM (ITU version)

The following table defines the fields in the MTP3 LINK TIMERS FORM (ITU version). Refer to Figure 7-39, “Form 3.1.5: MTP3 LINK TIMERS FORM (ITU version)” (p. 982) for an illustration.

Table 7-36 MTP3 LINK TIMERS FORM (ITU version) field descriptions

Field	Description
1-3	The GROUP NUMBER, SUBGROUP NUMBER (BOARD NUMBER), and MEMBER NUMBER (PORT/CHANNEL NUMBER) fields should be populated in a manner consistent with DAP 107XX0 (XX = node id). DAP 107XX0 indicates the links that can be added to a link set. It also shows node id, board numbers, and port/channel (link) numbers. For multiple SS7 processes support, the node id is the virtual cluster node id, refer the System Administration Guide for multiple SS7 processes support. However, note that the DAP page displays only up to the first eight links of each board even if there can be a maximum of 120 links per board for MTP2E1. GROUP NUMBER, two digit, range: 0 to 31. SUBGROUP NUMBER, one digit, range: 1 to 4. MEMBER NUMBER, up to three digits, range: 1 to 120 for MTP2E1. For SAAL, the range is 1-4. For MTP2AA, the range is 1-4 (HDCii) or 1-8 (HDCiii). For M2PA, the range is 1-20.

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Table 7-36 MTP3 LINK TIMERS FORM (ITU version) field descriptions (continued)

Field	Description
Timer fields (4-16)	You can find descriptions of the timers in the *CCITT Q. 704 Recommendation* document.
4	The CHANGEOVER DELAY field contains the delay value used to avoid incorrect message sequencing on the changeover. Timer: T1, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
5	The CHANGEOVER ACK field contains the waiting value used for changeover acknowledgment. Timer: T2, three to four digits, range: 700 to 2000 milliseconds, default: 700 milliseconds.
6	The TIME CNTRLD DVRSION field contains the time-controlled diversion delay to avoid incorrect sequencing on changeback. Timer: T3, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
7	The 1ST CHANGEBACK ACK field contains the value used for changeback acknowledgment (first attempt). Timer: T4, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
8	The 2ND CHANGEBACK ACK field contains the value used for waiting for changeback acknowledgment (second attempt). Timer: T4, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
9	The LINK UNINHIBIT ACK field contains the value used for waiting for uninhibit acknowledgment. Timer: T12, three to four digits, range: 800 to 1500 milliseconds, default: 1000 milliseconds.
10	The FORCED UNINHIBIT ACK field contains the value used for waiting for force uninhibit. Timer: T13, three to four digits, range: 800 to 1500 milliseconds, default: 1000 milliseconds.
11	The LINK INHIBIT ACK field contains the value used for waiting for inhibition acknowledgment. Timer: T14, four digits, range: 2000 to 3000 milliseconds, default: 3000 milliseconds.
12	The ALIGNMENT FAILURE field contains the value used for the delay to avoid oscillation of initial alignment failure. Timer: T17, three to four digits, range: 800 to 1500 milliseconds, default: 1000 milliseconds.

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Table 7-36 MTP3 LINK TIMERS FORM (ITU version) field descriptions (continued)

Field	Description
13	The LOCAL INHIBIT TEST field contains the value used for waiting to repeat the local inhibit test. Timer: T22, three to four digits, range: 180 to 360 milliseconds, default: 240 milliseconds.
14	The REMOTE INHIBIT TEST field contains the value used for waiting to repeat the remote inhibit test. Timer: T22, three to four digits, range: 180 to 360 milliseconds, default: 240 milliseconds.
15	The LINK TEST ACK field contains the value used for waiting for the signaling link test acknowledgment. Up to two digits, range: 4 to 12 seconds, default: 4 seconds.
16	The PERIODIC LINK TEST field contains the value used for frequency of the periodic signaling link test. Two digits, range: 30 to 90 seconds, default: 90 seconds.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.71 MTP3 LINK TIMERS FORM (ANSI version)

7.71.1 Illustration

Figure 7-40 Form 3.1.5: MTP3 LINK TIMERS FORM (ANSI version)

```
Screen 1 of 1          MTP3 LINK TIMERS FORM

*>  1. GROUP NUMBER  (TS NUMBER)            18. FALSE LINK CONG (T31)  ___
*   2. SUBGROUP NUMBER (BOARD NUMBER)         _
*   3. MEMBER NUMBER (PORT/CHANNEL NUMBER)   ___
    4. CHANGEOVER DELAY            (T1) ____
    5. CHANGEOVER ACK              (T2) ____
    6. TIME CNTRLD DVRSION         (T3) ____
    7. FIRST CHANGEBACK ACK        (T4) ____
    8. SECOND CHANGEBACK ACK       (T5) ____
    9. LINK UNINHIBIT ACK         (T12) ____
   10. FORCED UNINHIBIT ACK       (T13) ____
   11. LINK INHIBIT ACK           (T14) ____
   12. ALIGNMENT FAILURE          (T17) ____
   13. CRAFT REFERRAL             (T19) ___
   14. LOCAL INHIBIT TEST         (T20) ___
   15. REMOTE INHIBIT TEST        (T21) ___
   16. PERIODIC LINK TEST                __
   17. LINK TEST ACK                     __

GROUP NUMBER(NODE ID). Enter a value between 0 and 31.
```

7.71.2 Description of fields for MTP3 LINK TIMERS FORM (ANSI version)

The following table defines the fields in the MTP3 LINK TIMERS FORM (ANSI version). Refer to for an illustration.

Table 7-37 MTP3 LINK TIMERS FORM (ANSI version) field descriptions

Field	Description
1-3	The GROUP NUMBER, SUBGROUP NUMBER (BOARD NUMBER), and MEMBER NUMBER (PORT/CHANNEL NUMBER) fields should be populated in a manner consistent with DAP 107XX0 (XX = node id). DAP 107XX0 indicates the links that can be added to a link set. It also shows node ids, board numbers, and port/channel (link) numbers. For multiple SS7 processes support, the node id is the virtual cluster node id, refer the System Administration Guide for multiple SS7 processes support. However, note that the DAP page displays only up to the first eight links of each board even if there can be a maximum of 64 links per board for MTP2T1. GROUP NUMBER, two digit, range: 0 to 31. SUBGROUP NUMBER, one digit, range: 1 to 4. MEMBER NUMBER, two digit, range: 1 to 64 for MTP2T1, 1-20 for M2PA.

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Table 7-37 MTP3 LINK TIMERS FORM (ANSI version) field descriptions (continued)

Field	Description
Timer fields (4-16)	You can find descriptions of the timers in the *ANSI T1.111-1988, Chapter T1.111.4* document.
4	The CHANGEOVER DELAY field contains the delay value used to avoid incorrect message sequencing on the changeover. Timer: T1, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
5	The CHANGEOVER ACK field contains the waiting value used for changeover acknowledgment. Timer: T2, three to four digits, range: 700 to 2000 milliseconds, default: 700 milliseconds.
6	The TIME CNTRLD DVRSION field contains the time-controlled diversion delay to avoid incorrect sequencing on changeback. Timer: T3, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
7	The 1ST CHANGEBACK ACK field contains the value used for changeback acknowledgment (first attempt). Timer: T4, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
8	The 2ND CHANGEBACK ACK field contains the value used for waiting for changeback acknowledgment (second attempt). Timer: T5, three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.
9	The LINK UNINHIBIT ACK field contains the value used for waiting for uninhibit acknowledgment. Timer: T12, three to four digits, range: 800 to 1500 milliseconds, default: 1000 milliseconds.
10	The FORCED UNINHIBIT ACK field contains the value used for waiting for force uninhibit. Timer: T13, three to four digits, range: 800 to 1500 milliseconds, default: 1000 milliseconds.
11	The LINK INHIBIT ACK field contains the value used for waiting for inhibition acknowledgment. Timer: T14, four digits, range: 2000 to 3000 milliseconds, default: 3000 milliseconds.
12	The ALIGNMENT FAILURE field contains the value used for the delay to avoid oscillation of initial alignment failure. Timer: T17, three to four digits, range: 800 to 1500 milliseconds, default: 1000 milliseconds.

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Table 7-37 MTP3 LINK TIMERS FORM (ANSI version) field descriptions (continued)

Field	Description
13	The CRAFT REFERRAL field contains the value for the failed link craft referral timer. Timer: T19, three digits, range: 360 to 600 milliseconds, default: 480 milliseconds.
14	The LOCAL INHIBIT TEST field contains the value used for waiting to repeat the local inhibit test. Timer: T20, two to three digits, range: 90 to 120 milliseconds, default: 120 milliseconds.
15	The REMOTE INHIBIT TEST field contains the value used for waiting to repeat the remote inhibit test. Timer: T21, two to three digits, range: 90 to 120 milliseconds, default: 120 milliseconds.
16	The PERIODIC LINK TEST field contains the value used for frequency of the periodic signaling link test. Up to two digits, range: 30 to 90 seconds, default: 90 seconds.
17	The LINK TEST ACK field contains the value used for waiting for the signaling link test acknowledgment. Up to two digits, range: 4 to 12 seconds, default: 4 seconds.
18	The FALSE LINK CONG field contains the value used for detecting false link congestion. Two to three digits, range: 10 to 120 seconds, default: 30 seconds.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.72 Form 3.2.1: ROUTING PATTERN INDEX FORM

7.72.1 Purpose

Use this form to add, modify, or delete a routing pattern index (RPI). A routing pattern index is a list of link sets that are arranged in a prioritized order. The first link set listed is designated as the normal route between two signaling points. The normal link set is followed by the first and second alternates, which are to be used if the normal link set is out of service.

Once a routing pattern index has been stored in the database, it can be used for more than one routing configuration.

An RPI may require modification to balance the load among the SS7 links. The measurements reports show whether or not the outgoing messages on the active links are being distributed evenly.

7.72.2 Illustration

Figure 7-41 Form 3.2.1: ROUTING PATTERN INDEX FORM

The following illustrates Form 3.2.1: ROUTING PATTERN INDEX FORM.

```
Screen 1 of 1
                          ROUTING PATTERN INDEX FORM

*>  1. ROUTING PATTERN INDEX          __
    2. NORMAL LINK SET                __
    3. FIRST ALTERNATE LINK SET       __
    4. SECOND ALTERNATE LINK SET      __
```

7.72.3 Description of fields for ROUTING PATTERN INDEX FORM

The following table defines the fields in the ROUTING PATTERN INDEX FORM.

Table 7-38 ROUTING PATTERN INDEX FORM field descriptions

Field	Description
1	The ROUTING PATTERN INDEX field contains the internal logical index associated with a given order of link sets. Up to two digits, range: 1-16.
2	The NORMAL LINK SET field contains the first priority link set associated with the RPI. Up to two digits, range: 1-16.
3	The FIRST ALTERNATE LINK SET field contains the second priority link set associated with the RPI if the first priority link set is unavailable. A zero in this field indicates that the second priority link set is not specified. Up to two digits, range: 0-16.

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Table 7-38 ROUTING PATTERN INDEX FORM field descriptions (continued)

Field	Description
4	The SECOND ALTERNATE LINK SET field contains the third priority link set to be associated with the RPI if both the first and second priority link sets are unavailable. A zero in this field indicates that the third priority link set is not specified. Up to two digits, range: 0-16.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.R

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7.73 Form 3.2.2: POINT CODE FORM

7.73.1 Overview

Use this form to add new SS7 point code, or to modify, display, or delete existing point code.

7.73.2 Available form versions

Three form versions are available for Form 3.2.2:

- 7.74 “POINT CODE FORM (ITU version)” (p. 991)
- 7.75 “POINT CODE FORM (ANSI version)” (p. 992)
- 7.76 “POINT CODE FORM (CHN version)” (p. 994)

7.73.3 Gateway platform

For gateway platform, the user interaction form prompts you to select 1 for ITU or 2 for ANSI. The default is ITU.

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7.74 POINT CODE FORM (ITU version)

7.74.1 Illustration

Figure 7-42 Form 3.2.2: POINT CODE FORM (ITU version)

The following illustrates Form 3.2.2: POINT CODE FORM (ITU version).

```
Screen 1 of 1                    POINT CODE FORM

*>  1. POINT CODE                 ________
    2. POINT CODE TYPE                 ________
    3. ROUTING PATTERN INDEX           __



POINT CODE. Enter a value between 1 and 16383
```

7.74.2 Description of fields for POINT CODE FORM (ITU version)

The following table defines the fields in the POINT CODE FORM (ITU version).

Table 7-39 POINT CODE FORM (ITU version) field descriptions

Field	Description
1	The POINT CODE field contains the SS7 point code of the SEP, STP, or STEP that is connected to the platform. Up to five digits, range: 1 to 16383.
2	The POINT CODE TYPE field specifies whether it is an end point or a transfer point. Valid values include the following: • SEP—Use this value when a signaling point is an end point, such as an SSP or a platform. • STP—Specify this value when a signaling point is used as a transfer point. • STEP—Use this point when a signaling point is used as a transfer point and an end point.
3	The ROUTING PATTERN INDEX field contains an internal logical index that is associated with a given order of link sets. Up to two digits, range: 1 to 16.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.75 POINT CODE FORM (ANSI version)

7.75.1 Illustration

Figure 7-43 Form 3.2.2: POINT CODE FORM (ANSI version)

The following illustrates Form 3.2.2: POINT CODE FORM (ANSI version).

```
Screen 1 of 1        POINT CODE FORM

*>  1. NETWORK ID                      ___
*   2. CLUSTER ID                      ___
*   3. MEMBER ID                       ___
    4. POINT CODE TYPE                 ________
    5. ROUTING PATTERN INDEX           __



NETWORK ID. Enter a value between 0 and 255.
```

7.75.2 Description of fields for POINT CODE FORM (ANSI version)

The following table defines the fields in the POINT CODE FORM (ANSI version).

Table 7-40 POINT CODE FORM (ANSI version) field descriptions

Field	Description
1	The NETWORK ID field contains the SS7 network ID number for the point code of the SSP, STP, or platform that is connected to the platform. Network IDs can be numbered from 0-255, for a maximum of 256. **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID fields must not all be set to zero (i.e., 0-0-0). Up to three digits, range: 0 to 255.
2	The CLUSTER ID field contains the SS7 cluster ID number for the point code of the SSP, STP, or platform that is connected to the platform. **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID fields must not all be set to zero (i.e., 0-0-0). Up to three digits, range: 0 to 255.
3	The MEMBER ID field contains the SS7 member ID number for the point code for the SSP, STP, or platform that is connected to the platform. **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID fields must not all be set to zero (i.e., 0-0-0). Up to three digits, range: 0 to 255.

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Table 7-40 POINT CODE FORM (ANSI version) field descriptions (continued)

Field	Description
4	The POINT CODE TYPE field specifies whether a single point code or group of point codes is being added to the system. Valid values include the following: • NTWK_O Network only—This specifies that all of the point codes with this network ID are routed using the value in field 5. Fields 2 and 3 must be zero. Note that the platform can provision a maximum of 256 point codes with this point code type. • CLU_O (Cluster only)—This specifies that all of the point codes specified by fields 1 and 2 are routed using the value in field 5. Field 3 must be zero. Note that the platform can provision a maximum of 512 point codes with this point code type. • UPOP_CLU (Unpopulated cluster)—This specifies that there is only one point code in the cluster. It is generally used for STP. Note that the platform can provision a maximum of 128 point codes with this point code type. • POP_CLU (Populated cluster)—This specifies that all of the point codes specified by fields 1 and 2 are routed using the value in field 5. Field 3 must be zero. Note that the platform can provision a maximum of 768 point codes with this point type. A check is available to notify the user when the number of networks is exceeded • SMEMBER (Static member)—This is used to provide an RPI for one or more point codes in the cluster that is different from the other members of the cluster. Note that the platform can provision a maximum of 2000 point codes with this point code type. **Note:** The platform can provision up to 254 distinct network IDs for the point codes of type POP_CLU, UPOP_CLU, and CLU_O.
5	The ROUTING PATTERN INDEX field contains the internal logical index that is associated with a given order of link sets. Up to two digits, range: 1 to 16.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.76 POINT CODE FORM (CHN version)

7.76.1 Illustration

Figure 7-44 Form 3.2.2: POINT CODE FORM (CHN version)

The following illustrates Form 3.2.2: POINT CODE FORM (CHN version).

```
Screen 1 of 1          POINT CODE FORM

*>  1. MAIN AREA ID                    ___
*   2. SUB-AREA ID                     ___
*   3. POINT ID                        ___
    4. POINT CODE TYPE                 ________
    5. ROUTING PATTERN INDEX           __




MAIN AREA ID. Enter a value between 0 and 255.
```

7.76.2 Description of fields for POINT CODE FORM (CHN version)

The following table defines the fields in the POINT CODE FORM (CHN version).

Table 7-41 POINT CODE FORM (CHN version) field descriptions

Field	Description
1	The MAIN AREA ID field specifies the main signaling area ID for the point code of the SEP, STP, or STEP that is connected to the platform. **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID fields must not all be set to zero (i.e., 0-0-0). Up to three digits, range: 0 to 255.
2	The SUB-AREA ID field specifies the sub-signaling area ID for the point code of the SEP or STEP that is connected to the platform. **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID fields must not all be set to zero (i.e., 0-0-0). Up to three digits, range: 0 to 255.
3	The POINT ID field specifies the signaling point ID for the point code for the SEP or STEP that is connected to the platform. **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID fields must not all be set to zero (i.e., 0-0-0). Up to three digits, range: 0 to 255.

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Table 7-41 POINT CODE FORM (CHN version) field descriptions (continued)

Field	Description
4	The POINT CODE TYPE field specifies whether it is an end point or a transfer point. Valid values include the following: • SEP—Use this value when a signaling point is an end point, such as an SSP or a platform. • STP—Specify this value when a signaling point is used as a transfer point. • STEP—Use this value when a signaling point is used as a transfer point and an end point.
5	The ROUTING PATTERN INDEX field contains the internal logical index that is associated with a given order of link sets. For information, refer to 7.72 “Form 3.2.1: ROUTING PATTERN INDEX FORM” (p. 988).

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.77 Form 3.2.3: ROUTE TIMERS FORM

7.77.1 Overview

The timers accessible from this form conform to industry naming conventions for timers used to configure a network element. These timers are explained more fully in *ANSI T1.111-1988* (ANSI protocol), and in *CCITT Q.704* or *CCITT Q.714* (ITU protocol).

This form does not support INSERT or DELETE operations.

7.77.2 Illustration

Figure 7-45 Form 3.2.3: ROUTE TIMERS FORM

The following illustrates Form 3.2.3: ROUTE TIMERS FORM.

```
Screen 1 of 1
                              ROUTE TIMERS FORM

*>  1. NETWORK ID                          _____
    2. OFFICE ID                           ___
    3. CNTRLD REROUTE TIMER  (T6)          ____
    4. RTSET TEST TIMER     (T10)          _____
    5. RTSET CONG TIMER     (T15)          ____
    6. RTSET CONG UPD TIMER (T16)          ____
```

7.77.3 Description of fields for ROUTE TIMERS FORM

The following table defines the fields in the ROUTE TIMERS FORM.

Table 7-42 ROUTE TIMERS FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Read only, up to five characters.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. Read only, up to three digits.
3	The CNTRLD REROUTE TIMER field contains the delay to avoid incorrect message sequencing on controlled rerouting. This timer is described in more detail in *CCITT Q. 704 Recommendation* (ITU protocol), and in Chapter T11.11.4 of *ANSI T1.111-1988*, as timer T10 (ANSI protocol). Three to four digits, range: 500 to 1200 milliseconds, default: 500 milliseconds.

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Table 7-42 ROUTE TIMERS FORM field descriptions (continued)

Field	Description
4	The RTSET TEST TIMER field contains the waiting to repeat signaling route set test message. This timer is described in more detail in *CCITT Q. 704 Recommendation* (ITU protocol), and in Chapter T11.11.4 of *ANSI T1.111-1988*, as timer T11 (ANSI protocol). Five digits, range: 30000 to 60000 milliseconds, default: 30000 milliseconds.
5	The RTSET CONG TIMER field contains the waiting for repeat signaling route set congestion test. This timer is described in more detail in *CCITT Q. 704 Recommendation* (ITU protocol), and in Chapter T11.11.4 of *ANSI T1.111-1988, Chapter T1.111.4*, as timer T15 (ANSI protocol). Four digits, range: 2000 to 3000 milliseconds, default: 3000 milliseconds.
6	The RTSET CONG UPD TIMER field contains the waiting for route set congestion status update. This timer is described in more detail in *CCITT Q. 704 Recommendation* (ITU protocol), and in Chapter T11.11.4 of *ANSI T1.111-1988*, as timer T16 (ANSI protocol). Four digits, range: 1400 to 2000 milliseconds, default: 1400 milliseconds.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.78 Form 3.2.4: ALIAS POINT CODE FORM

7.78.1 Overview

Use this form to provide SS7 alias point code functionality for the platform.

7.78.2 ALIAS POINT CODE field precautions

Before completing this form, check the ALIAS POINT CODE field. The information in this field:

- must not all be set to zero (ANSI and CHN forms)
- must not be the same as STP1 or STP2
- must not be duplicated in any other records
- must not be the same as the platform point code itself.

An alias point code being used in the ISUP SCH LOOPBACK CONFIGURATION FORM as an incoming point code or outgoing point code cannot be deleted from the ALIAS POINT CODE FORM.

7.78.3 Available form versions

Three form versions are available for Form 3.2.4:

- 7.79 “ALIAS POINT CODE FORM (ITU version)” (p. 999)
- 7.80 “ALIAS POINT CODE FORM (ANSI version)” (p. 1000)
- 7.81 “ALIAS POINT CODE FORM (CHN version)” (p. 1002)

7.78.4 Gateway platform

For gateway platform, the user interaction form prompts you to select 1 for ITU or 2 for ANSI. The default is ITU.

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7.79 ALIAS POINT CODE FORM (ITU version)

7.79.1 Illustration

Figure 7-46 Form 3.2.4: ALIAS POINT CODE FORM (ITU version)

The following illustrates Form 3.2.4: ALIAS POINT CODE FORM (ITU version).

```
Screen 1 of 1     ALIAS POINT CODE FORM


*>  1. INDEX                   __
    2. ALIAS POINT CODE     ____
    3. FORWARD                 _



INDEX. Enter a value between 1 and 8.
```

7.79.2 Description of fields for ALIAS POINT CODE FORM (ITU version)

The following table defines the fields in the ALIAS POINT CODE FORM (ITU version).

Table 7-43 ALIAS POINT CODE FORM (ITU version) field descriptions

Field	Description
1	The INDEX field is a unique identifier for an ANSI, ITU or CHN alias point code. A maximum of eight alias point codes are allowed. Note that the ANSI, ITU and CHN alias point codes are stored in the same database table. Therefore, each index must be unique across both ANSI, ITU and CHN alias point codes. For example, if you insert an ANSI alias point code with an index value of one (1), you cannot insert another ITU, ANSI or CHN alias point code with an index value of one, unless you delete the first index. One digit, range: 1 to 8.
2	The ALIAS POINT CODE NETWORK ID field identifies an alias point code for this platform. Up to five digits, range: 1 to 16383.
3	The FORWARD field indicates if the platform should forward incoming messages to the mate platform when an application is OOS. One character, Y or N.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.80 ALIAS POINT CODE FORM (ANSI version)

7.80.1 Illustration

Figure 7-47 Form 3.2.4: ALIAS POINT CODE FORM (ANSI version)

The following illustrates Form 3.2.4: ALIAS POINT CODE FORM (ANSI version).

```
Screen 1 of 1     ALIAS POINT CODE FORM


*>  1. INDEX                  __
    ALIAS POINT CODE
       2. NETWORK ID          ___
       3. CLUSTER ID          ___
       4. MEMBER ID           ___
    5. FORWARD                _


INDEX. Enter a value between 1 and 8.
```

7.80.2 Description of fields for ALIAS POINT CODE FORM (ANSI version)

The following table defines the fields in the ALIAS POINT CODE FORM (ANSI version).

Table 7-44 ALIAS POINT CODE FORM (ANSI version) field descriptions

Field	Description
1	The INDEX field is a unique identifier for an ANSI, ITU or CHN alias point code. A maximum of eight alias point codes are allowed. Note that the ANSI, ITU and CHN alias point codes are stored in the same database table. Therefore, each index must be unique across both ANSI, ITU and CHN alias point codes. For example, if you insert an ANSI alias point code with an index value of one (1), you cannot insert another ITU, ANSI or CHN alias point code with an index value of one, unless you delete the first index. One digit, range: 1 to 8.
2	The ALIAS POINT CODE NETWORK ID field identifies a 3-digit alias network identifier (NID), which is a number that distinguishes this network from other networks. Up to three digits, range: 0 to 255. The point code value must not be 0-0-0.

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Table 7-44 ALIAS POINT CODE FORM (ANSI version) field descriptions (continued)

Field	Description
3	The ALIAS POINT CODE CLUSTER ID field identifies a 3-digit alias cluster number, which is a number for one grouping of signaling points within the network. Up to three digits, range: 0 to 255. The point code value must not be 0-0-0. If the POINT CODE FORMAT field is set to ATT on the SS7 Office Parameters Form, the CLUSTER ID range is 0 to 317.
4	The ALIAS POINT CODE MEMBER ID field identifies a 3-digit alias member number, which is a number for one signaling point within a cluster. Up to three digits, range: 0 to 255. The point code value must not be 0-0-0.
5	The FORWARD field indicates if the platform should forward incoming messages to the mate platform when an application is OOS. One character, Y, N or M. Y- Forward the incoming message to the mate if local SSN is OOS and mate SSN is in service. N- Do not forward the incoming message to the mate if the local SSN is OOS. M- This value is used when the platform provisions the mate point code using an alias point code. To ensure that SCCP management messages use the correct alias point code instead of the true point code, the alias point code to be used in the SCCP management messages is marked with the value "M". Also, when the "M" value is used, the system will not forward incoming messages to the mate if the local SSN is OOS.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.81 ALIAS POINT CODE FORM (CHN version)

7.81.1 Illustration

Figure 7-48 Form 3.2.4: ALIAS POINT CODE FORM (CHN version)

The following illustrates Form 3.2.4: ALIAS POINT CODE FORM (CHN version).

```
Screen 1 of 1     ALIAS POINT CODE FORM


*>  1. INDEX                  __
    ALIAS POINT CODE
       2. MAIN AREA ID       ___
       3. SUB-AREA ID        ___
       4. POINT ID           ___
    5. FORWARD               _




INDEX. Enter a value between 1 and 8.
```

7.81.2 Description of fields for ALIAS POINT CODE FORM (CHN version)

The following table defines the fields in the ALIAS POINT CODE FORM (CHN version).

Table 7-45 ALIAS POINT CODE FORM (CHN version) field descriptions

Field	Description
1	The INDEX field is a unique identifier for an ANSI, ITU or CHN alias point code. A maximum of eight alias point codes are allowed. Note that the ANSI, ITU and CHN alias point codes are stored in the same database table. Therefore, each index must be unique across both ANSI, ITU and CHN alias point codes. For example, if you insert an ANSI alias point code with an index value of one (1), you cannot insert another ITU, ANSI or CHN alias point code with an index value of one, unless you delete the first index. One digit, range: 1 to 8.
2	The ALIAS POINT CODE MAIN AREA ID field specifies the main area identifier of an alias point code. Up to three digits, range: 0 to 255. The point code value must not be 0-0-0.
3	The ALIAS POINT CODE SUB-AREA ID field specifies the sub-area identifier of an alias point code. Up to three digits, range: 0 to 255. The point code value must not be 0-0-0.

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Table 7-45 ALIAS POINT CODE FORM (CHN version) field descriptions (continued)

Field	Description
4	The ALIAS POINT CODE POINT ID field specifies the point identifier of an alias point code. Up to three digits, range: 0 to 255. The point code value must not be 0-0-0.
5	The FORWARD field indicates if the local system should forward incoming messages to the mate system when an application is OOS. One character, Y or N.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.82 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM

7.82.1 Overview

Use this form to enter point codes of adjacent STPs other than the two HOME STPs in 7.39 “Form 2.6: SS7 Office Parameters Form” (p. 905).

7.82.2 Available form versions

Two form versions are available for Form 3.2.5:

- 7.83 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ITU version)” (p. 1005)
- 7.84 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version)” (p. 1006)
- 7.85 “Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version)” (p. 1008)

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7.83 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ITU version)

7.83.1 Overview

This describes the ITU version of ADJACENT REMOTE STP POINT CODE FORM.

7.83.2 Illustration

Figure 7-49 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ITU version)

The following illustrates Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ITU version).

```
Screen 1 of 1     ADJACENT REMOTE STP POINT CODE FORM


*>  1. REMOTE STP ID                    __

    REMOTE STP POINT CODE        ______


REMOTE STP ID. Enter 3-12.
```

7.83.3 Description of fields

The following table defines the fields used in the ADJACENT REMOTE STP POINT CODE FORM (ITU version).

Table 7-46 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ITU version) field descriptions

Field	Description
1	The REMOTE STP ID field contains the index to the point code of the adjacent remote STP. Up to two digits, range: 3 to 12.
2	The REMOTE STP POINT CODE field contains the point code of an adjacent remote STP. Up to three digits, range: 1 to 16383.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.84 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version)

7.84.1 Overview

This form describes the ANSI version of ADJACENT REMOTE STP POINT CODE FORM.

7.84.2 Illustration

The following illustrates Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version).

Figure 7-50 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version)

```
Screen 1 of 1          ADJACENT REMOTE STP POINT CODE FORM


*>  1. REMOTE STP ID                    __

    REMOTE STP POINT CODE
    ---------------------
    2. NETWORK ID                       ___
    3. CLUSTER ID                       ___
    4. MEMBER ID                        ___



REMOTE STP ID. Enter 3-20. (5-20 if point code format is GWIA).
```

7.84.3 Description of fields

The following table defines the fields used in the ADJACENT REMOTE STP POINT CODE FORM (ANSI version):

Table 7-47 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version) field description

Field	Description
1	The REMOTE STP ID field contains the index to the point code of the adjacent remote STP. Up to two digits, range: 3 to 12.

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Table 7-47 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (ANSI version) field description (continued)

Field	Description
2-4	The END NODE POINT CODE contains the point code of the adjacent remote STP, with the following components: • NETWORK ID-specifies the network ID for the point code of the adjacent remote STP. Up to three digits, range: 0 to 255. • CLUSTER ID-specifies the cluster ID for the point code of the adjacent remote STP. Up to three digits, range: 0 to 255. • MEMBER ID-specifies the member ID for the point code of the adjacent remote STP. Up to three digits, range: 0 to 255. **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID fields must not all be set to zero (i.e., 0-0-0).

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7.85 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version)

7.85.1 Overview

This form describes the CHN version of ADJACENT REMOTE STP POINT CODE FORM.

7.85.2 Illustration

Figure 7-51 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version)

The following illustrates Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version).

```
Screen 1 of 1     ADJACENT REMOTE STP POINT CODE FORM

*>  1. REMOTE STP ID                          __

    REMOTE STP POINT CODE
    ---------------------
    2. MAIN AREA ID                           ___
    3. SUB-AREA ID                           ___
    4. MEMBER ID                              ___


REMOTE STP ID. Enter 3-12. (3-8 if distributed SS7 is not supported)
```

7.85.3 Description of fields

The following table defines the fields used in the ADJACENT REMOTE STP POINT CODE FORM (CHN version).

Table 7-48 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version) field descriptions

Field	Description
1	The REMOTE STP ID field contains the index to the point code of the adjacent remote STP. Up to two digits, range: 3 to 12.

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Table 7-48 Form 3.2.5: ADJACENT REMOTE STP POINT CODE FORM (CHN version) field descriptions (continued)

Field	Description
2-4	The REMOTE STP POINT CODE field contains the point code of an adjacent remote STP, with the following components: • MAIN AREA ID—specifies the main signaling area ID for the point code of the remote STP • SUB-AREA ID—specifies the sub-signaling area ID for the point code of the remote STP • POINT ID—specifies the signaling point ID for the point code of the remote STP

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.86 Form 3.2.6: ADJACENT END NODE POINT CODE FORM

7.86.1 Overview

Use this form to enter point codes of the end nodes connected to the platform.

7.86.2 Available form versions

Three form versions are available for Form 3.2.6:

- 7.87 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ITU version)” (p. 1011)
- 7.88 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ANSI version)” (p. 1012)
- 7.89 “Form 3.2.6: ADJACENT END NODE POINT CODE FORM (CHN version)” (p. 1014)

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7.87 Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ITU version)

7.87.1 Illustration

The following illustrates Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ITU version)

Figure 7-52 Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ITU version)

```
Screen 1 of 1   ADJACENT END NODE POINT CODE FORM



*>  1. ADJACENT END NODE ID            __
    2. END NODE POINT CODE         ______



ADJACENT END NODE ID. Enter a value between 1-20.
```

7.87.2 Description of fields for ADJACENT END NODE POINT CODE FORM (ITU version)

The following table defines the fields used in the ADJACENT END NODE POINT CODE FORM (ITU version):

Table 7-49 ADJACENT END NODE POINT CODE FORM (ITU version) field descriptions

Field	Description
1	The END NODE ID field contains the index to the point code of the end node. Up to two digits, range: 1-20.
2	The END NODE POINT CODE field contains the point code of the end node. Up to five digits, range: 1-16383.

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7.88 Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ANSI version)

7.88.1 Illustration

The following illustrates Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ANSI version)

Figure 7-53 Form 3.2.6: ADJACENT END NODE POINT CODE FORM (ANSI version)

```
Screen 1 of 1
                     ADJACENT END NODE POINT CODE FORM



*>  1. ADJACENT END NODE ID            __

    END NODE POINT CODE
    --------------------
    2. NETWORK ID                      ___
    3. CLUSTER ID                      ___
    4. MEMBER ID                       ___




ADJACENT END NODE ID. Enter a value between 1-20.
```

7.88.2 Description of fields for ADJACENT END NODE POINT CODE FORM (ANSI version)

The following table defines the fields used in the ADJACENT END NODE POINT CODE FORM (ANSI version):

Table 7-50 ADJACENT END NODE POINT CODE FORM (ANSI version) field descriptions

Field	Description
1	The END NODE ID field contains index to the point code of the end node. Up to two digits, range: 1-20.

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Table 7-50 ADJACENT END NODE POINT CODE FORM (ANSI version) field descriptions (continued)

Field	Description
2-4	The END NODE POINT CODE field contains the point code of the end node, with the following components: • NETWORK ID-specifies the network ID for the point code of the adjacent end node. Up to three digits, range: 0 to 255. • CLUSTER ID-specifies the cluster ID for the point code of the adjacent end node. Up to three digits, range: 0 to 255. • MEMBER ID-specifies the member ID for the point code of the adjacent end node. Up to three digits, range: 0 to 255. **Note:** >The NETWORK ID, CLUSTER ID, and MEMBER ID fields must not all be set to zero (i.e., 0-0-0).

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7.89 Form 3.2.6: ADJACENT END NODE POINT CODE FORM (CHN version)

7.89.1 Illustration

The following illustrates Form 3.2.6: ADJACENT END NODE POINT CODE FORM (CHN version).

Figure 7-54 Form 3.2.6: ADJACENT END NODE POINT CODE FORM (CHN version)

```
Screen 1 of 1
                      ADJACENT END NODE POINT CODE FORM



*>  1. ADJACENT END NODE ID            __

    END NODE POINT CODE
    ---------------------
    2. MAIN AREA ID                     ___
    3. SUB-AREA ID                      ___
    4. POINT ID                         ___




ADJACENT END NODE ID. Enter a value between 1-20.
```

7.89.2 Description of fields for ADJACENT END NODE POINT CODE FORM (CHN version)

The following table defines the fields used in the ADJACENT END NODE POINT CODE FORM (CHN version):

Table 7-51 ADJACENT END NODE POINT CODE FORM (CHN version) field descriptions

Field	Description
1	The END NODE ID field contains index to the point code of the end node. Up to two digits, range: 1-20.

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Table 7-51 ADJACENT END NODE POINT CODE FORM (CHN version) field descriptions (continued)

Field	Description
2-4	The END NODE POINT CODE field contains the point code of the end node, with the following components: • MAIN AREA ID-specifies the main signaling area ID for the point code of the adjacent end node. Up to three digits, range: 0 to 255. • SUB-AREA ID-specifies the sub-signaling area ID for the point code of the adjacent end node. Up to three digits, range: 0 to 255. • POINT ID-specifies the signaling point ID for the point code of the adjacent end node. Up to three digits, range: 0 to 255. **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID fields must not all be set to zero (i.e., 0-0-0).

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7.90 Form 3.3.1: SUBSYSTEM NUMBER FORM

7.90.1

Use this form to do the following:

- define the subsystem number (SSN) data that is used by S7SCH
- indicate appropriate overload treatment, including Focused Destination Overload Control (FDOC) for the ITU version of the form
- specify default routing type
- load identical versions of SPAs on mated platforms

Note the following when using this form:

- SPAs that are being used on the platform determine what SSN data need to be added or modified on this form.
- SS7 allows up to 50 SSNs to be active at one time.
- Each SSN for every SPA must have a unique record in this form. Because the S7SCH handles the SCCP management for each SSN, it must know how all of the SSNs are equipped.

7.90.2 Routing information

Routing information is sent from the SEP to the platform. This routing key consists of the Directory Number (DN), the nature of the number (for example, called or calling), the type of digits (for example, national), and the SSN.

7.90.3 How this form interacts with other forms

This form is related to Forms 1.3, 1.2 and 3.3.7 for ANSI and ITU, (3.3.6 for CHN). It will cross-check Form 1.3 for deletion. Form 1.2 will cross check Form 1.3 for insertion. When an entry in Form 3.3.1 is deleted, all corresponding entries in Form 3.3.7 (3.3.6 for CHN) will also be deleted.

7.90.4 Available form versions

Three form versions are available for Form 3.3.1:

- 7.91 “SUBSYSTEM NUMBER FORM (ITU version)” (p. 1017)
- 7.92 “SUBSYSTEM NUMBER FORM (ANSI version)” (p. 1022)
- 7.93 “SUBSYSTEM NUMBER FORM (CHN version)” (p. 1027)

7.90.5 Gateway platform

For gateway platform, the user interaction form prompts you to select 1 for ITU or 2 for ANSI. The default is ITU.

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7.91 SUBSYSTEM NUMBER FORM (ITU version)

7.91.1 Illustration

Figure 7-55 FORM 3.3.1 SUBSYSTEM NUMBER FORM (ITU version)

```
Screen 1 of 1       SUBSYSTEM NUMBER FORM

*>  1. LOCAL SUBSYSTEM NUMBER                        ___
    2. MATE SUBSYSTEM NUMBER                         ___
    3. MATE POINT CODE:
    4. PROTOCOL TYPE                                 _________
    5. ROUTING TYPE                                  _______
    6. ACG OVERLOAD CONTROL                          _____
    7. ETST GAP TYPE                                 __
    8. ETSI ACG DIGIT CODE                         ______
  9. FDOC                    ____
  10. TRANSACTION RESPONSE TIMER              ______
   11. MULTIPLE PROTOCOL DISCRIMINATOR              ____




LOCAL SUBSYSTEM NUMBER. Enter a value between 5 and 254 or 0.
```

7.91.2 Protocol types

The PROTOCOL TYPE field contains the type of message traffic. If the PROTOCOL TYPE field has a value of MNP, you may assign a value of zero in the SSN field on Form 1.2: SPMAN SSN PARAMETERS FORM. Refer to the following list for valid values.

- AIN0.0: AIN Release 0 message set
- AIN0.1: AIN Release 1 message set
- GTT: Global Title Translation
- ICP: AT&T Intelligent Call Processing SS7 protocol
- CS1-ETSI: CS1 European Telecommunications Standards Institute
- ASERI: Application Service Entity-Rate Intelligente
- P-INAP: AT&T Proprietary Intelligent Network Application Protocol
- TIMAP: Telecom Italia Mobile Application Part
- GSMMAP: Global System for Mobile (cellular) Mobile Application Part
- CAP: Capabilities Application Part
- MNP: Mobile Number Portability

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- GSMANSI: both GSM and ANSI-41 (applies to the platform database and ODIN forms).
- SCCP01: Support SCCP class0 and class1

7.91.3 Routing types

The ROUTING TYPE field contains the type of routing that the controlling SCH should perform first. Refer to the following list for valid values.

- RK: routing key routing
- RKB: routing key - billing ID
- RKBAPC: routing key based on billing ID. If the billing ID is not present, the message will be routed based on the point code and subsystem number.
- RKC: routing key based on calling line identity
- RKD: routing key decrementing - can be assigned only to the protocol type of GSMMAP.
- RKE: use with AIN0.1 routing key 1 (SN+GTA+TT)
- RKG: use with AIN0.1 routing key 2 (SSN+GTA)
- RKV: routing key based on platform received number
- RKP: routing key based on customer identity
- RKS: routing key based on SSN number (platform only)
- RKN: routing key based on number portability donor directory number
- RKW: routing key based on gateway
- ESK: ETSI service key
- CAVESK: called address value + ETSI service key
- SSN: subsystem number routing only
- SMDSSN: used for PCS, this routing type pertains to the service key SMD update, SMD call, and CM internal call
- PCSSN: point code subsystem number routing
- TSSN: routing key based on TCAP message type + SSN (platform only)
- TRKG: routing key based on TCAP message type + SSN + GTA (platform only)
- PRKG: routing key based on point code + SSN + GTA (platform only)

7.91.4 Routing type dependencies

The value that you enter in the ROUTING TYPE field may depend on the value you entered in the PROTOCOL TYPE field. Refer to the following list to determine if the routing type you're entering is dependent on the protocol type.

- If the PROTOCOL TYPE is AIN0.0, the ROUTING TYPE must be SSN, RKS, PCSSN, PRKG, RKG or RK.
- If the PROTOCOL TYPE is AIN0.1, the ROUTING TYPE must be SSN, RKS, PCSSN, RKE or RKG.
- If the PROTOCOL TYPE is GTT, the ROUTING TYPE must be SSN, RKS, PCSSN, RKG or RKE.

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- If the PROTOCOL TYPE is ICP, the ROUTING TYPE must be SSN, RKS, or PCSSN.
- If the PROTOCOL TYPE is IN, the ROUTING TYPE must be RK, RKS, PCSSN or SSN.
- If the PROTOCOL TYPE is INLTF, the ROUTING TYPE must be RK, RKS, PCSSN or SSN.
- If the PROTOCOL TYPE is AINLTF, the ROUTING TYPE must be SSN, RKS, PCSSN, RKG or RKE.
- If the PROTOCOL TYPE is ASERI, the ROUTING TYPE must be SSN, RKC, RKS, RKV, RKN, RKW or SMDSSN.
- If the PROTOCOL TYPE is CS1-ETSI, the ROUTING TYPE must be SSN, RKS, ESK or CAVESK.
- If the PROTOCOL TYPE is P-INAP, the ROUTING TYPE must be RKC, RKS, RKP or RKV.
- If the PROTOCOL TYPE is TIMAP, the ROUTING TYPE must be SSN, RKS, or PCSSN.
- If the PROTOCOL TYPE is GSMMAP, the ROUTING TYPE must be RK, RKS, RKD, PRKG, PCSSN or SSN.
- If the PROTOCOL TYPE is CAP, the ROUTING TYPE must be SSN, RKS, PCSSN or ESK.
- If the PROTOCOL TYPE is MNP, the ROUTING TYPE must be SSN.
- If the PROTOCOL TYPE is IS826, the ROUTING TYPE must be RKB or RKBAPC.
- If the PROTOCOL TYPE is GSMANSI, the ROUTING TYPE must be SSN, RKS, TSSN, TRKG or PCSSN.
- If the PROTOCOL TYPE is SCCP01, the ROUTING TYPE must be SSN.

7.91.5 Description of fields for SUBSYSTEM NUMBER FORM (ITU version)

Important! Fields 7 and 8 are ETSI-specific. These two fields can be skipped when using other protocol types.

The following table defines the fields used in the SUBSYSTEM NUMBER FORM (ITU version).

Table 7-52 SUBSYSTEM NUMBER FORM (ITU version) field descriptions

Field	Description
1	The LOCAL SUBSYSTEM NUMBER field contains the SSN for which data is to be created. Up to three digits, range: 5 to 254.
2	The MATE SUBSYSTEM NUMBER field contains the subsystem number in the mate platform that corresponds to the subsystem number in field 1.
3	The MATE POINT CODE field identifies the point code for the mate platform. This value should not be changed without the approval of the network administrator. Up to five digits, 0 to 16383. Entering a value of zero (0) indicates that the platform is not mated.
4	The PROTOCOL TYPE field contains the type of message traffic. Up to eight characters. Refer to 7.91.2 “Protocol types” (p. 1017) for a list of valid values.

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Table 7-52 SUBSYSTEM NUMBER FORM (ITU version) field descriptions (continued)

Field	Description
5	If you want a primary ROUTING TYPE other than SSN (the default), enter it in this field. This controls the first attempt that the controlling SCH will make to route to an SPA on a platform. The ROUTING TYPE field contains the type of routing that the controlling SCH should perform first. Up to six characters. Refer to 7.91.3 "Routing types" (p. 1018) for a list of valid values. Note that the value that you enter in the ROUTING TYPE field may depend on the value you entered in the PROTOCOL TYPE field. Refer to 7.91.4 "Routing type dependencies" (p. 1018) to determine this.
6	The ACG OVERLOAD CONTROL field contains the types of overload for which Automatic Call Gapping (ACG) should be invoked for this SSN on a network element. The platform has an initial value NONE as the default for the field. Coordinate any setup modifications with our network administrator. Valid values include: • SYS: ACG overload control performed • ALL: Same as SYS • NONE: ACG overload control not performed The system and SSN overload detection is performed irrespective of the value of the ACG OVERLOAD CONTROL field. If ACG overload control is configured and when the overload is detected for the protocols supporting ACG such as AIN0.0, AIN0.1, IN, P-INAP, CS1-ETSI and ASERI, ACG messages will be sent to the network element in order for it to perform the overload control
7	The ETSI GAP TYPE field identifies the ETSI gap type for the platform. This field is ETSI-specific. Valid values include: • CLDAV: called address value • GAPOS: gap on service • CLDAS: called address and service • CLGAS: calling address and service If you are using protocol types other than ETSI, ETSI-specific fields will be skipped.
8	The ETSI ACG DIGIT CODE field indicates the number of digits in the service key on which ETSI ACG is to be placed in the event of an overload. The valid range is 3-18. However, if the ETSI GAP TYPE is GAPOS, the range is 3-10. If you are using protocol types other than ETSI, ETSI-specific fields will be skipped.

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Table 7-52 SUBSYSTEM NUMBER FORM (ITU version) field descriptions (continued)

Field	Description
9	The FDOC field contains the flag for turning focused destination overload control on or off. On the ITU version of this form, valid values include: • Y: turns FDOC on • N: turns FDOC off Note that you may enter the Y value only if you entered P-INAP, ASERI or CS1-ETSI in the PROTOCOL TYPE field.
10	The TRANSACTION RESPONSE TIMER field allows each SSN to use different timer values. Enter a zero (0), or a value between 1000 and 10000. The default value is 0. If you enter 0, the value of the QRY RESPONSE TIME in 7.94 "Form 3.3.2: SCCP PARAMETERS FORM" (p. 1032) will be used.
11	The MULTIPLE PROTOCOL DISCRIMINATOR field indicates the multiple protocol capability of the SSN. Valid values include: • NONE: indicates the SSN is not multiple protocol capable (this is the default value) • SSNS: indicates the SSN is multiple protocol capable where the called and calling SSNs are used to determine protocol, routing type and overload. Configure this using 7.105 "MULTIPLE PROTOCOL BY SSNS FORM" (p. 1054). If you use the GSMANSI protocol type, the MULTIPLE PROTOCOL DISCRIMINATOR field is restricted to the NONE value

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

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7.92 SUBSYSTEM NUMBER FORM (ANSI version)

7.92.1 Illustration

Figure 7-56 FORM 3.3.1 SUBSYSTEM NUMBER FORM (ANSI version)

```
Screen 1 of 1       SUBSYSTEM NUMBER FORM

*>  1. LOCAL SUBSYSTEM NUMBER                    ___
    2. MATE SUBSYSTEM NUMBER                     ___
       MATE POINT CODE:
            3. NETWORK IDENTITY                  ___
            4. CLUSTER IDENTITY                  ___
            5. MEMBER IDENTITY                   ___
    6. PROTOCOL TYPE                             ________
    7. ROUTING TYPE                              _______
    8. ACG OVERLOAD CONTROL                      _____
    9. ACG DIGIT CODE                            __
   10. TRANSACTION RESPONSE TIMER                ______
   11. MULTIPLE PROTOCOL DISCRIMINATOR           _____




LOCAL SUBSYSTEM NUMBER. Enter a value between 5 and 254 or 0.
```

7.92.2 Protocol types

The PROTOCOL TYPE field contains the type of message traffic. If the PROTOCOL TYPE field has a value of GTT, AIN0.1 or MNP, you may assign a value of zero in the SSN field on Form 1.2: SPMAN SSN PARAMETERS FORM. Refer to the following list for valid values.

- AIN0.0: AIN Release 0 message set
- AIN0.1: AIN Release 1 message set
- GTT: Global Title Translation
- ICP: AT&T Intelligent Call Processing SS7 protocol
- CS1-ETSI: CS1 European Telecommunications Standards Institute
- ASERI: Application Service Entity-Rate Intelligente
- P-INAP: AT&T Proprietary Intelligent Network Application Protocol
- TIMAP: Telecom Italia Mobile Application Part
- GSMMAP: Global System for Mobile (cellular) Mobile Application Part
- CAP: Capabilities Application Part
- MNP: Mobile Number Portability

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- GSMANSI: both GSM and ANSI-41 (applies to the platform database and ODIN forms)
- SCCP01: Support SCCP class0 and class1

7.92.3 Routing types

The ROUTING TYPE field contains the type of routing that the controlling SCH should perform first. Refer to the following list for valid values.

- RK: routing key routing
- RKB: routing key - billing ID
- RKBAPC: routing key based on billing ID. If the billing ID is not present, the message will be routed based on the point code and subsystem number.
- RKC: routing key based on calling line identity
- RKD: routing key decrementing - can be assigned only to the protocol type of GSMMAP.
- RKE: use with AIN0.1 routing key 1 (SN+GTA+TT)
- RKG: use with AIN0.1 routing key 2 (SSN+GTA)
- RKV: routing key based on received number
- RKP: routing key based on customer identity
- RKS : routing key based on SSN number (platform only)
- RKN: routing key based on number portability donor directory number
- RKW: routing key based on gateway
- ESK: ETSI service key
- CAVESK: called address value + ETSI service key
- SSN: subsystem number routing only
- SMDSSN: used for PCS, this routing type pertains to the service key SMD update, SMD call, and CM internal call
- PCSSN: point code subsystem number routing.
- TSSN : routing key based on TCAP message type + SSN (platform only)
- TRKG : routing key based on TCAP message type + SSN + GTA (platform only)
- PRKG : routing key based on point code + SSN + GTA (platform only)

7.92.4 Routing type dependencies

The value that you enter in the ROUTING TYPE field may depend on the value you entered in the PROTOCOL TYPE field. Refer to the following list to determine if the routing type you're entering is dependent on the protocol type.

- If the PROTOCOL TYPE is AIN0.0, the ROUTING TYPE must be SSN, RKS, PCSSN, PRKG, RKG or RK.
- If the PROTOCOL TYPE is AIN0.1, the ROUTING TYPE must be SSN, RKS, PCSSN, RKE or RKG.
- If the PROTOCOL TYPE is GTT, the ROUTING TYPE must be SSN, RKS, PCSSN, RKG or RKE.

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- If the PROTOCOL TYPE is ICP, the ROUTNG TYPE must be SSN RKS, or PCSSN.
- If the PROTOCOL TYPE is IN, the ROUTING TYPE must be RK, RKS, PCSSN or SSN.
- If the PROTOCOL TYPE is INLTF, the ROUTING TYPE must be RK, RKS, PCSSN or SSN
- If the PROTOCOL TYPE is AINLTF, the ROUTING TYPE must be SSN, RKS, PCSSN, RKG or RKE.
- If the PROTOCOL TYPE is ASERI, the ROUTING TYPE must be SSN, RKC, RKS, RKV, RKN, RKW or SMDSSN.
- If the PROTOCOL TYPE is CS1-ETSI, the ROUTING TYPE must be SSN, RKS, ESK or CAVESK.
- If the PROTOCOL TYPE is P-INAP, the ROUTING TYPE must be RKC, RKS, RKP or RKV.
- If the PROTOCOL TYPE is TIMAP, the ROUTING TYPE must be SSN RKS, or PCSSN.
- If the PROTOCOL TYPE is GSMMAP, the ROUTING TYPE must be RK, RKS, RKD, PRKG, PCSSN or SSN.
- If the PROTOCOL TYPE is CAP, the ROUTING TYPE must be SSN, RKS, PCSSN or ESK.
- If the PROTOCOL TYPE is MNP, the ROUTING TYPE must be SSN.
- If the PROTOCOL TYPE is IS826, the ROUTING TYPE must be RKB or RKBAPC.
- If the PROTOCOL TYPE is GSMANSI, the ROUTING TYPE must be SSN, RKS, TSSN, TRKG or PCSSN.
- If the PROTOCOL TYPE is SCCP01, the ROUTING TYPE must be SSN.

7.92.5 Description of fields for SUBSYSTEM NUMBER FORM (ANSI version)

The following table defines the fields used in the SUBSYSTEM NUMBER FORM (ANSI version).

Table 7-53 SUBSYSTEM NUMBER FORM (ANSI version) field descriptions

Field	Description
1	The LOCAL SUBSYSTEM NUMBER field contains the SSN for which data is to be created. Up to three digits, range: 0 and 5 to 254.
2	The MATE SUBSYSTEM NUMBER field contains the subsystem number in the mate platform that corresponds to the subsystem number in field 1.
3-5	The MATE POINT CODE field identifies the point code for the mate platform. An ANSI point code has three components: NETWORK ID, CLUSTER ID, and MEMBER ID. These components must be set to the point code values of the mate platform where the same SPA is running. Setting them all to zero (0) indicates that the SPA is not mated. Each field, up to three digits, range: 0 to 255. This value should not be changed without the approval of the network administrator. Note that the MEMBER ID for the mate platform will be different than this platform's MEMBER ID.

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Table 7-53 SUBSYSTEM NUMBER FORM (ANSI version) field descriptions (continued)

Field	Description
6	The PROTOCOL TYPE field contains the type of message traffic. Up to eight characters. Refer to 7.92.2 "Protocol types" (p. 1022) for a list of valid values.
7	The ROUTING TYPE field contains the type of routing that the controlling SCH should perform first. Up to six characters. Refer to 7.92.3 "Routing types" (p. 1023) for a list of valid values. Note that the value that you enter in the ROUTING TYPE field may depend on the value you entered in the PROTOCOL TYPE field. Refer to 7.92.4 "Routing type dependencies" (p. 1023) for more information.
8	The ACG OVERLOAD CONTROL field contains the types of overload for which Automatic Call Gapping (ACG) should be invoked for this SSN on a network element. The platform has an initial value NONE as the default for the field. Coordinate any setup modifications with our network administrator. Valid values include: • SYS: ACG overload control performed • ALL: Same as SYS • NONE: ACG overload control not performed • CNAM: ACG overload control performed for the CNAM application The system and SSN overload detection is performed irrespective of the value of the ACG OVERLOAD CONTROL field. If ACG overload control is configured and when the overload is detected for the protocols supporting ACG such as AIN0.0, AIN0.1, IN, P-INAP, CS1-ETSI and ASERI, ACG messages will be sent to the network element in order for it to perform the overload control
9	The ACG DIGIT CODE gives the number of digits in the service key on which call gapping is to be placed in the event of overload. Valid values include: • 0: does not affect any digits in the SSP • 3: affects the entire NPA in the SSP • 6: affects the NPA NXX in the SSP • 7, 8, 9, 10: affects the first 7, 8, 9 or 10 digits in the service key.
10	The TRANSACTION RESPONSE TIMER field allows each SSN to use different timer values. Enter a zero (0), or a value between 1000 and 10000. The default value is 0. If you enter 0, the value of the QRY RESPONSE TIME in 7.94 "Form 3.3.2: SCCP PARAMETERS FORM" (p. 1032) will be used.

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Table 7-53 SUBSYSTEM NUMBER FORM (ANSI version) field descriptions (continued)

Field	Description
11	The MULTIPLE PROTOCOL DISCRIMINATOR field indicates the multiple protocol capability of the SSN. Valid values include: • NONE—indicates the SSN is not multiple protocol capable (this is the default value.) The value must be NONE for the GSMANSI protocol type. • SSNS—indicates the SSN is multiple protocol capable where the called and calling SSNs are used to determine protocol, routing type and overload. Configure this using 7.104 "Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM" (p. 1053). If you use the GSMANSI protocol type, the MULTIPLE PROTOCOL DISCRIMINATOR field is restricted to the NONE value

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

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7.93 SUBSYSTEM NUMBER FORM (CHN version)

7.93.1 Illustration

Figure 7-57 FORM 3.3.1 SUBSYSTEM NUMBER FORM (CHN version)

```
Screen 1 of 1       SUBSYSTEM NUMBER FORM

*>  1. LOCAL SUBSYSTEM NUMBER                        ___
    2. MATE SUBSYSTEM NUMBER                         ___
       MATE POINT CODE:
            3. MAIN AREA ID                        ___
            4. SUB-AREA ID                         ___
            5. POINT ID                           ___
    6. PROTOCOL TYPE                                 _________
    7. ROUTING TYPE                                  _______
    8. ACG OVERLOAD CONTROL                          ____
    9. ETSI GAP TYPE                 ____
   10. ETSI AGC DIGIT CODE                    ____
   11. FDOC                                          __
   12. TRANSACTION RESPONSE TIMER                    ______
   13. MULTIPLE PROTOCOL DISCRIMINATOR               ____




LOCAL SUBSYSTEM NUMBER. Enter a value between 5 and 254 or 0.
```

7.93.2 Protocol types

The PROTOCOL TYPE field contains the type of message traffic. If the PROTOCOL TYPE field has a value of MNP, you may assign a value of zero in the SSN field on Form 1.2: SPMAN SSN PARAMETERS FORM. Refer to the following list for valid values.

- AIN0.0: AIN Release 0 message set
- AIN0.1: AIN Release 1 message set
- GTT: Global Title Translation
- ICP: AT&T Intelligent Call Processing SS7 protocol
- CS1-ETSI: European Telecommunications Standards Institute
- ASERI: Application Service Entity-Rate Intelligente
- P-INAP: AT&T Proprietary Intelligent Network Application Protocol
- TIMAP: Telecom Italia Mobile Application Part
- GSMMAP: Global System for Mobile (cellular) Mobile Application Part
- CAP: Capabilities Application Part

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- MNP: Mobile Number Portability
- GSMANSI: both GSM and ANSI-41 (applies to the platform database and ODIN forms)
- CCISUP: Call Control ISUP. Available only to Netra platforms
- SCCP01: Support SCCP class0 and class1

7.93.3 Routing types

The ROUTING TYPE field contains the type of routing that the controlling SCH should perform first. Refer to the following list for valid values.

- RK: routing key routing
- RKB: routing key - billing ID
- RKBAPC: routing key based on billing ID. If the billing ID is not present, the message will be routed based on the point code and subsystem number.
- RKC: routing key based on calling line identity
- RKD: routing key decrementing - can be assigned only to the protocol type of GSMMAP.
- RKE: use with AIN0.1 routing key 1 (SN+GTA+TT)
- RKG: use with AIN0.1 routing key 2 (SSN+GTA)
- RKV: routing key based on the received number
- RKP: routing key based on customer identity
- RKS: routing key based on SSN number (platform only)
- RKN: routing key based on number portability donor directory number
- RKW: routing key based on gateway
- ESK: ETSI service key
- CAVESK: called address value + ETSI service key
- SSN: subsystem number routing only
- SMDSSN: used for PCS, this routing type pertains to the service key SMD update, SMD call, and CM internal call.
- PCSSN: point code subsystem number routing
- TSSN: routing key based on TCAP message type + SSN (platform only)
- TRKG: routing key based on TCAP message type + SSN + GTA (platform only)
- PRKG: routing key based on point code + SSN + GTA (platform only)

7.93.4 Routing type dependencies

The value that you enter in the ROUTING TYPE field may depend on the value you entered in the PROTOCOL TYPE field. Refer to the following list to determine if the routing type you're entering is dependent on the protocol type.

- If the PROTOCOL TYPE is AIN0.0, the ROUTING TYPE must be SSN, RKS, PCSSN, PRKG, RKG or RK.

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- If the PROTOCOL TYPE is AIN0.1, the ROUTING TYPE must be SSN, RKS, PCSSN, RKE or RKG.
- If the PROTOCOL TYPE is GTT, the ROUTING TYPE must be SSN, RKS, PCSSN, RKG or RKE.
- If the PROTOCOL TYPE is ICP, the ROUTNG TYPE must be SSN, RKS, or PCSSN.
- If the PROTOCOL TYPE is IN, the ROUTING TYPE must be RK, RKS, PCSSN or SSN.
- If the PROTOCOL TYPE is ASERI, the ROUTING TYPE must be SSN, RKC, RKS, RKV, RKN, RKW or SMDSSN.
- If the PROTOCOL TYPE is CS1-ETSI, the ROUTING TYPE must be SSN, RKS, ESK or CAVESK.
- If the PROTOCOL TYPE is P-INAP, the ROUTING TYPE must be RKC, RKS, RKP or RKV.
- If the PROTOCOL TYPE is TIMAP, the ROUTING TYPE must be SSN, RKS, or PCSSN.
- If the PROTOCOL TYPE is GSMMAP, the ROUTING TYPE must be RK, RKS, RKD, PRKG, PCSSN or SSN.
- If the PROTOCOL TYPE is CAP, the ROUTING TYPE must be SSN, RKS, PCSSN or ESK.
- If the PROTOCOL TYPE is MNP, the ROUTING TYPE must be SSN.
- If the PROTOCOL TYPE is IS826, the ROUTING TYPE must be RKB or RKBAPC.
- If the PROTOCOL TYPE is GSMANSI, the ROUTING TYPE must be SSN, RKS, TSSN, TRKG or PCSSN.
- If the PROTOCOL TYPE is CCISUP, the ROUTING TYPE must be SSN.
- If the PROTOCOL TYPE is SCCP01, the ROUTING TYPE must be SSN.

7.93.5 Description of fields for SUBSYSTEM NUMBER FORM (CHN version)

Important! Fields 9 and 10 are ETSI-specific. These two fields can be skipped when using other protocol types.

The following table defines the fields used in the SUBSYSTEM NUMBER FORM (CHN version).

Table 7-54 SUBSYSTEM NUMBER FORM (CHN version) field descriptions

Field	Description
1	The LOCAL SUBSYSTEM NUMBER field contains the SSN for which data is to be created. Up to three digits, range: 5 to 254.
2	The MATE SUBSYSTEM NUMBER field contains the subsystem number in the mate platform that corresponds to the subsystem number in field 1.

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Table 7-54 SUBSYSTEM NUMBER FORM (CHN version) field descriptions (continued)

Field	Description
3-5	The MATE POINT CODE field identifies the point code for the mate platform. A CHN point code has three components: MAIN AREA ID, SUB-AREA ID, and POINT ID. These value should not be changed without the approval of the network administrator. Each field, up to three digits, range: 0 to 255. Entering a value of zero (0) indicates that the platform is not mated.
6	The PROTOCOL TYPE field contains the type of message traffic. Up to eight characters. Refer to 7.93.2 “Protocol types” (p. 1027) for a list of valid values.
7	If you want a primary ROUTING TYPE other than SSN (the default), enter it in this field. This controls the first attempt that the controlling SCH will make to route to an SPA on a platform. The ROUTING TYPE field contains the type of routing that the controlling SCH should perform first. Up to six characters. Refer to 7.93.3 “Routing types” (p. 1028) for a list of valid values. Note that the value that you enter in the ROUTING TYPE field may depend on the value you entered in the PROTOCOL TYPE field. Refer to 7.93.4 “Routing type dependencies” (p. 1028) to determine this.
8	The ACG OVERLOAD CONTROL field contains the types of overload for which Automatic Call Gapping (ACG) should be invoked for this SSN on a network element. The platform has an initial value NONE as the default for the field. Coordinate any setup modifications with our network administrator Valid values include: • SYS: ACG overload control performed • ALL: Same as SYS • NONE: ACG overload control not performed The system and SSN overload detection is performed irrespective of the value of the ACG OVERLOAD CONTROL field. If ACG overload control is configured and when the overload is detected for the protocols supporting ACG such as AIN0.0, AIN0.1, IN, P-INAP, CS1-ETSI and ASERI, ACG messages will be sent to the network element in order for it to perform the overload control
9	If you are using ETSI protocol, enter the ETSI ACG DIGIT CODE. If you are not using ETSI protocol, this field will be skipped. The ETSI ACG DIGIT CODE field indicates the number of digits in the service key on which ETSI ACG is to be placed in the event of an overload. The valid range is 3-18. However, if the ETSI GAP TYPE is GAPOS, the range is 3-10.

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Table 7-54 SUBSYSTEM NUMBER FORM (CHN version) field descriptions (continued)

Field	Description
10	If you are using ETSI protocol, enter the ETSI GAP TYPE. If you are not using ETSI protocol, this field will be skipped. The ETSI GAP TYPE field identifies the ETSI gap type for the platform. This field is ETSI-specific. Valid values include: • CLDAV: called address value • GAPOS: gap on service • CLDAS: called address and service • CLGAS: calling address and service
11	The FDOC field contains the flag for turning focused destination overload control on or off. On the ITU version of this form, valid values include: • Y: turns FDOC on • N: turns FDOC off Note that you may enter the Y value only if you entered P-INAP, ASERI or CS1-ETSI in the PROTOCOL TYPE field.
12	The TRANSACTION RESPONSE TIMER field allows each SSN to use different timer values. Enter a zero (0), or a value between 1000 and 10000. The default value is 0. If you enter 0, the value of the QRY RESPONSE TIME in 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032) will be used.
13	The MULTIPLE PROTOCOL DISCRIMINATOR field indicates the multiple protocol capability of the SSN. Valid values include: • NONE: indicates the SSN is not multiple protocol capable (this is the default value) • SSNS: indicates the SSN is multiple protocol capable where the called and calling SSNs are used to determine protocol, routing type and overload. If you use the GSMANSI or CCISUP protocol type, the MULTIPLE PROTOCOL DISCRIMINATOR field is restricted to the NONE value

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.94 Form 3.3.2: SCCP PARAMETERS FORM

7.94.1 Overview

Use this form to define the overload controls for the SCCP that specify the way the platform works.

The timers accessible from this form conform to industry naming conventions for timers used for configuring a network element. These timers are explained more fully in *ANSI T1.111-1988* (ANSI protocol), and in *CCITT Q.704* and *CCITT Q.714* (ITU protocol).

7.94.2 Illustration

Figure 7-58 Form 3.3.2: SCCP PARAMETERS FORM

The following illustrates Form 3.3.2: SCCP PARAMETERS FORM.

```
Screen 1 of 1
                          SCCP PARAMETERS FORM

*>  1. NETWORK ID                                ABCDE
    2. OFFICE ID                                 444
    3. SSN INFO REQ. DELAY                       30
    4. SSN OOS GRANT DELAY                       30
    5. SST IGNORE TIME                           30
    6. QRY RESPONSE TIME                         4000
    7. SSN RTG STATUS TIMER                      30
    8. HOP COUNTER                               15
    9. REASSEMBLY TIMER                          10
   10. CONTAIN PC                                Y
   11. MAX INCOMING TID                          4000
   12. MAX OUTGOING TID                          4000
   13. OVERLOAD CAPABILITY OR EXCEPTION          C
   14. SUPPORT LUDT                              N
   15. SUPPORT SCMG SSC                          N
```

7.94.3 Description of fields for SCCP PARAMETERS FORM

The following table defines the fields in the SCCP PARAMETERS FORM.

Table 7-55 SCCP PARAMETERS FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Read only, up to five characters.
2	The OFFICE ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Read only, up to three digits.

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Table 7-55 SCCP PARAMETERS FORM field descriptions (continued)

Field	Description
3	The SSN INFO REQ. DELAY field contains the time delay between subsystem information requests. Up to two digits, range: 30 seconds to 90 seconds.
4	The SSN OOS GRANT DELAY field contains the grant wait time for a subsystem to go out of service. This is the time that the platform waits for an OOS grant after sending an OOS service request to its mate platform. Up to two digits, range: 30 seconds to 90 seconds.
5	The SST IGNORE TIME field contains the time that the platform ignores subsystem test messages. This is a delay between receiving an OOS grant an actually going OOS. Up to two digits, range: 30 seconds to 90 seconds.
6	The QRY RESPONSE TIME field contains the maximum allowable time given to the platform to respond to a query. If a query is not processed within this time limit, outgoing responses to the query are discarded. Four to five digits, range: 1000 milliseconds to 99000 milliseconds.
7	The SSN RTG STATUS TIMER field contains the time delay between subsystem routing status. Up to two digits, range: 30 seconds to 90 seconds.
8	The HOP COUNTER field identifies the number of levels a call can hop. Up to two digits, range: 1 to 15, default: 15.
9	The REASSEMBLY TIMER field identifies the waiting time for the next message segment. Up to two digits, range: 10 seconds to 20 seconds.
10	The CONTAIN PC field serves two purposes. 1. For the ITU and GWIA configuration, it identifies whether the called party address field of incoming messages contains a point code. 2. For the ANSI configuration, it identifies whether the point code is returned in the calling party field of outgoing subsequent messages. When the alias point code is used, this function should only be enabled if either of the following conditions are true: - Service is deployed in an Active/Hot Standby configuration. Note, if traffic is switched to the Hot Standby platform from the STP (that is not by taking the Active platform down), all calls in progress on the Active platform fails. - Service is deployed in an Active/Active configuration, but call scenarios do not include conversation messages (that is all are query/response). If these conditions are not adhered to, enabling the function could result in conversation messages being routed to the wrong platform. This results in call failures. One character, Y, or N.

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Table 7-55 SCCP PARAMETERS FORM field descriptions (continued)

Field	Description
11	The MAX INCOMING TID field identifies the maximum number of incoming transaction IDs supported. This is a read-only field. Four to six digits, range: 4000 to 496000, default: 4000.
12	The MAX OUTGOING TID field identifies the maximum number of outgoing transaction IDs supported. This is a read-only field. Four to six digits, range: 4000 to 496000, default: 4000.
13	The OVERLOAD CAPABILITY OR EXCEPTION field dictates the meaning of the overload capability point codes entered in 7.100 “Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM” (p. 1049). One character. The following are valid values: • C: Identifies SSP point codes that support overload capability • E: Identifies SSP exception point codes that do not support overload capability. The default value is C.
14	The SUPPORT LUDT field indicates whether LUDT (Long Unitdata) and LUDTS (LUDT Service) are supported by the platform. Valid values are Y and N. The default is N (not supported). The “Y” value is allowed only if the point code format configured in form 2.6 SS7 OFFICE PARAMETERS FORM is ITU or CHN.
15	The SUPPORT SCMG SSC field indicates whether SCMG SSC (SCCP Management Subsystem Congested) message is supported by the platform. Valid values are Y and N. The default is N (not supported). The “Y” value is allowed only if the point code format configured in form 2.6 SS7 OFFICE PARAMETERS FORM is ITU or CHN.

For database operations procedures, see 7.11 “Database Operations” (p. 843) section.

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7.95 Form 3.3.3: System Overload Control Form

7.95.1 Overview

Use this form to define the TCAP call gapping parameters for the platform. The S7SCH calculates the platform overload value every 10 seconds. There are 16 levels of platform overload.

7.95.2 Available form versions

Two form versions are available for Form 3.3.3. The ITU and CHN versions are the same.

- 7.96 “System Overload Control Form (ITU and CHN version)” (p. 1036)
- 7.97 “System Overload Control Form (ANSI version)” (p. 1039)

7.95.3 Gateway platform

For gateway platform, the submenu form prompts you to select 1 for ITU or 2 for ANSI.

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7.96 System Overload Control Form (ITU and CHN version)

7.96.1 Illustration

Figure 7-59 Form 3.3.3: System Overload Control Form (ITU and CHN version)

The following illustrates Form 3.3.3: System Overload Control Form (ITU and CHN version).

```
Screen 1 of 1        eCS SYSTEM OVERLOAD CONTROL FORM


*>  1. OVERLOAD CONTROL LEVEL          _

ASERI INAP / P-INAP PROTOCOL    ETSI INAP PROTOCOL
---------------------------     ------------------
  2. INVOKE GAPPING          _      5. INVOKE GAPPING       __
  3. CONTROL GAP LEVEL       __     6. CONTROL GAP VALUES    _____
  4. CONTROL DURATION LEVEL  __     7. CONTROL DURATION VALUES    ______



OVERLOAD CONTROL LEVEL: Enter a value between 1 and 15.
```

7.96.2 Description of fields for System Overload Control Form (ITU and CHN version)

The following table defines the fields in the System Overload Control Form (ITU and CHN version).

Table 7-56 System Overload Control Form (ITU and CHN version) field descriptions

Field	Description
1	The OVERLOAD CONTROL LEVEL field contains the threshold level that is computed by the SPMAN. Up to two digits, range: 1 to 15.
2	The INVOKE GAPPING field for ASE-RI INAP protocol indicates whether to send TCAP automatic call gapping (ACG) for this threshold level. Valid values include: • Y: invoke call gapping • N: do not invoke call gapping
3	The CONTROL GAP LEVEL field for ASE-RI INAP protocol specifies the gap level for this threshold. Up to two digits, range: 0 to 15. Refer to Table 7-57, “Control gap level values for Form 3.3.3 (ITU and CHN version)” (p. 1037) for valid values and gap durations.

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Table 7-56 System Overload Control Form (ITU and CHN version) field descriptions (continued)

Field	Description
4	The CONTROL DURATION LEVEL field for ASE-RI INAP protocol specifies the duration level for this threshold. Up to two digits, range: 0 to 13. Refer to Table 7-58, “Control duration level values for Form 3.3.3 (ITU and CHN version)” (p. 1038) for valid values and durations.
5	The INVOKE GAPPING field for ETSI INAP protocol indicates whether to send TCAP ACG for this threshold level. Valid values include: • Y: invoke call gapping • N: do not invoke call gapping
6	The CONTROL GAP VALUES field for ETSI INAP protocol specifies the gap values for this threshold. The values can range from -1 through 60000 milliseconds.
7	The CONTROL DURATION VALUES field for ETSI INAP protocol specifies the duration values for this threshold. The values can range from -1 through 86400 seconds.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

7.96.3 Control gap level values

The following table defines the values that you may enter in the CONTROL GAP LEVEL field, and the duration of those values.

Table 7-57 Control gap level values for Form 3.3.3 (ITU and CHN version)

Value of control gap level	Gap (in seconds)
0	Control off
1	0
2	0.1
3	0.25
4	0.5
5	1
6	2
7	5
8	10
9	15
10	30

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Table 7-57 Control gap level values for Form 3.3.3 (ITU and CHN version) (continued)

Value of control gap level	Gap (in seconds)
11	60
12	120
13	300
14	600
15	stop all calls

7.96.4 Control duration level values

The following table defines the values that you may enter in the CONTROL DURATION LEVEL field, and the duration of those values.

Table 7-58 Control duration level values for Form 3.3.3 (ITU and CHN version)

Value of control duration level	Duration (in seconds)
0	0
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256
10	512
11	1024
12	2048
13	Infinity or 4096 if GAP="Stop all calls"

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7.97 System Overload Control Form (ANSI version)

7.97.1 Illustration

Figure 7-60 Form 3.3.3: System Overload Control Form (ANSI version)

The following illustrates Form 3.3.3: System Overload Control Form (ANSI version).

```
Screen 1 of 1          SYSTEM OVERLOAD CONTROL FORM


*>  1. OVERLOAD CONTROL LEVEL          __
    2. INVOKE GAPPING                  _
    3. CONTROL GAP LEVEL               __
    4. CONTROL DURATION LEVEL          __









OVERLOAD CONTROL LEVEL: Enter a value between 1 and 15.
```

7.97.2 Description of fields for System Overload Control Form (ANSI version)

The following table defines the fields in the System Overload Control Form (ITU and CHN version).

Table 7-59 System Overload Control Form (ANSI version) field descriptions

Field	Description
1	The OVERLOAD CONTROL LEVEL field contains the threshold level that is computed by the SPMAN. Up to two digits, range: 1 to 15.
2	The INVOKE GAPPING field indicates whether to send TCAP automatic call gapping (ACG) for this threshold level. Valid values include: • Y: invoke call gapping • N: do not invoke call gapping
3	The CONTROL GAP LEVEL field specifies the gap level for this threshold. Up to two digits, range: 0 to 15. Refer to Table 7-60, “Control gap level values for Form 3.3.3 (ANSI version)” (p. 1040) for valid values and gap durations.

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Table 7-59 System Overload Control Form (ANSI version) field descriptions (continued)

Field	Description
4	The CONTROL DURATION LEVEL field specifies the duration level for this threshold. Up to two digits, range: 0 to 13. Refer to Table 7-61, "Control duration level values for Form 3.3.3 (ANSI version)" (p. 1041) for valid values and durations.

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

7.97.3 Control gap level values

The following table defines the values that you may enter in the CONTROL GAP LEVEL field, and the duration of those values.

Table 7-60 Control gap level values for Form 3.3.3 (ANSI version)

Value of control gap level	Gap (in seconds)
0	Control off
1	3
2	4
3	6
4	8
5	11
6	16
7	22
8	30
9	42
10	58
11	81
12	112
13	156
14	217
15	300

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7.97.4 Control duration level values

The following table defines the values that you may enter in the CONTROL DURATION LEVEL field, and the duration of those values.

Table 7-61 Control duration level values for Form 3.3.3 (ANSI version)

Value of control duration level	Duration (in seconds)
0	0
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256
10	512
11	1024
12	2048
13	4096

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7.98 Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version)

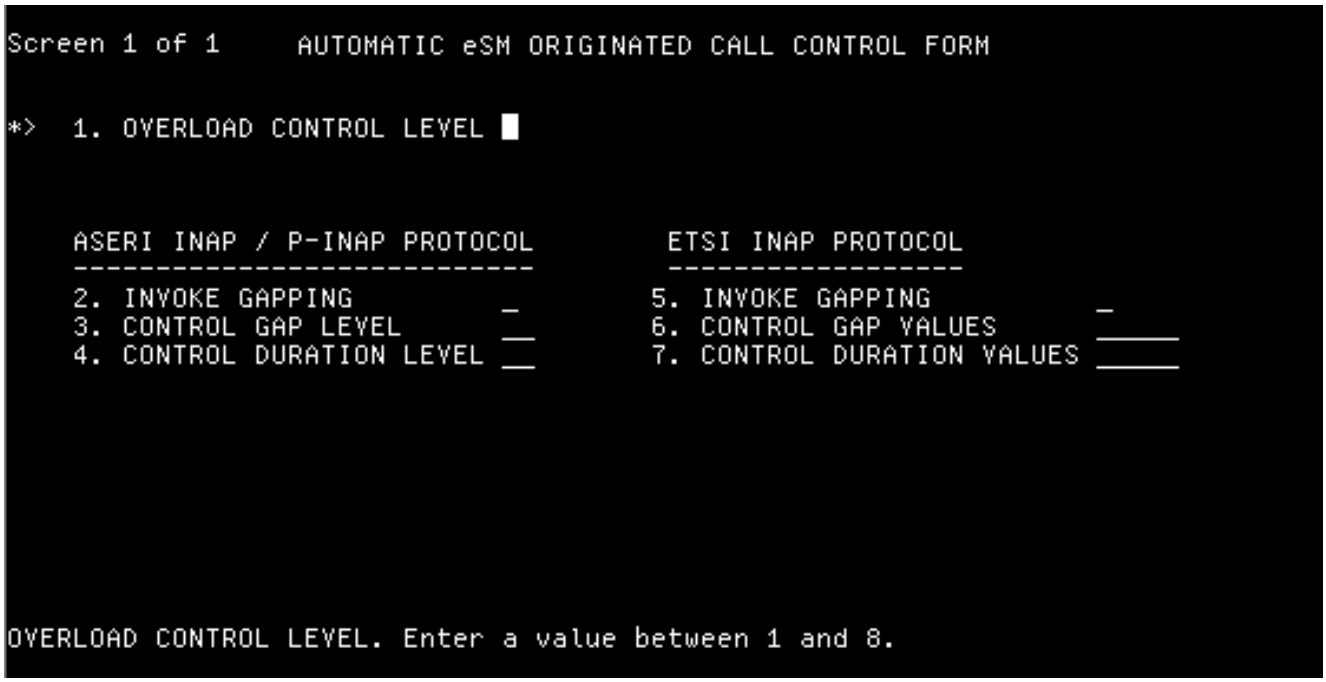
7.98.1 Overview

Use this form to define the TCAP automatic call gapping (ACG) parameters for the platform that are associated with the thresholds and maintained by SPMAN. Eight recent-changeable thresholds are maintained for each SSN, where each threshold represents the number of queries allowed for this SSN within the automatic eSM-originated call control (SOCC) time interval.

7.98.2 Illustration

The following illustrates Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version).

Figure 7-61 Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version)



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7.98.3 Description of fields for AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version)

The following table defines the fields in the AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version).

Table 7-62 AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ITU and CHN version) field descriptions

Field	Description
1	The OVERLOAD CONTROL LEVEL field contains the threshold level that is computed by the SPMAN. One digit, range: 1 to 8.
2	The INVOKE GAPPING field for ASE-RI INAP / P-INAP protocol indicates whether to send TCAP automatic call gapping (ACG) for this threshold level. Valid values include: • Y: invoke call gapping • N: do not invoke call gapping
3	The CONTROL GAP LEVEL field for ASE-RI INAP / P-INAP protocol specifies the gap level for this threshold. Up to two digits, range: 0 to 15. Refer to Table 7-63, “Control gap level values for Form 3.3.4 (ITU and CHN version)” (p. 1044) for valid values and gap durations.
4	The CONTROL DURATION LEVEL field for the ASE-RI INAP / P-INAP protocol specifies the duration level for this threshold. Up to two digits, range: 0 to 13. Refer to Table 7-64, “Control duration level values for Form 3.3.4 (ITU and CHN version)” (p. 1044) for valid values and durations.
5	The INVOKE GAPPING field for ETSI INAP protocol indicates whether to send TCAP ACG for this threshold level. Valid values include: • Y: invoke call gapping • N: do not invoke call gapping
6	The CONTROL GAP VALUES field for ETSI INAP protocol specifies the gap values for this threshold. The values can range from -1 through 60000 milliseconds.
7	The CONTROL DURATION VALUES field for ETSI INAP protocol specifies the duration values for this threshold. The values can range from -1 through 86400 seconds.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.98.4 Control gap level values

The following table defines the values that you may enter in the CONTROL GAP LEVEL field, and the duration of those values.

Table 7-63 Control gap level values for Form 3.3.4 (ITU and CHN version)

Value of control gap level	Gap (in seconds)
0	remove code control
1	0
2	0.1
3	0.25
4	0.5
5	1
6	2
7	5
8	10
9	15
10	30
11	60
12	120
13	300
14	600
15	infinite

7.98.5 Control duration level values

The following table defines the values that you may enter in the CONTROL DURATION LEVEL field, and the duration of those values.

Table 7-64 Control duration level values for Form 3.3.4 (ITU and CHN version)

Value of control duration level	Duration (in seconds)
0	remove code control
1	1
2	2

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Table 7-64 Control duration level values for Form 3.3.4 (ITU and CHN version) (continued)

Value of control duration level	Duration (in seconds)
3	4
4	8
5	16
6	32
7	64
8	128
9	256
10	512
11	1024
12	2048
13	4096

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7.99 Form 3.3.4: AUTOMATIC eSM ORIGINATED CALL CONTROL FORM (ANSI version)

7.99.1 Overview

Use this form to define the TCAP automatic call gapping (ACG) parameters for the platform that are associated with the thresholds and maintained by SPMAN. Eight recent-changeable thresholds are maintained for each SSN, where each threshold represents the number of queries allowed for this SSN within the automatic eSM-originated call control (SOCC) time interval.

7.99.2 Illustration

Figure 7-62 Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ANSI version)

The following illustrates Form 3.3.4: AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ANSI version).

```
Screen 1 of 1      AUTOMATIC eSM ORIGINATED CALL CONTROL FORM

*>  1. OVERLOAD CONTROL LEVEL  _
    2. INVOKE GAPPING          _
    3. CONTROL GAP LEVEL       __
    4. CONTROL DURATION LEVEL  __




OVERLOAD CONTROL LEVEL. Enter a value between 1 and 8.
```

7.99.3 Description of fields for AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ANSI version)

The following table defines the fields in the AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ANSI version).

Table 7-65 AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ANSI version) field descriptions

Field	Description
1	The OVERLOAD CONTROL LEVEL field contains the threshold level that is computed by the SPMAN. One digit, range: 1 to 8.
2	The INVOKE GAPPING field indicates whether to send TCAP automatic call gapping (ACG) for this threshold level. Valid values include: • Y: invoke call gapping • N: do not invoke call gapping

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Table 7-65 AUTOMATIC eSM ORIGINATED OVERLOAD CONTROL FORM (ANSI version) field descriptions (continued)

Field	Description
3	The CONTROL GAP LEVEL field specifies the gap level for this threshold. Up to two digits, range: 0 to 15. Refer to Table 7-66, "Control gap level values for Form 3.3.4 (ANSI version)" (p. 1047) for valid values and gap durations.
4	The CONTROL DURATION LEVEL field specifies the duration level for this threshold. Refer to Table 7-67, "Control duration level values for Form 3.3.4 (ANSI version)" (p. 1048) for valid values and durations. Up to two digits, range: 0 to 13.

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.l

7.99.4 Control gap level values

The following table defines the values that you may enter in the CONTROL GAP LEVEL field, and the duration of those values.

Table 7-66 Control gap level values for Form 3.3.4 (ANSI version)

Value of control gap level	Gap (in seconds)
0	remove code control
1	0
2	0.1
3	0.25
4	0.5
5	1
6	2
7	5
8	10
9	15
10	30
11	60
12	120
13	300
14	600

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Table 7-66 Control gap level values for Form 3.3.4 (ANSI version) (continued)

Value of control gap level	Gap (in seconds)
15	infinite

7.99.5 Control duration level values

The following table defines the values that you may enter in the CONTROL DURATION LEVEL field, and the duration of those values.

Table 7-67 Control duration level values for Form 3.3.4 (ANSI version)

Value of control duration level	Duration (in seconds)
0	remove code control
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256
10	512
11	1024
12	2048
13	4096

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7.100 Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY/ EXCEPTION POINT CODE FORM

7.100.1 Overview

Use this form to identify the SSP point codes that support ACG components on TCAP responses.

Depending on the value in the OVERLOAD CAPABILITY OR EXCEPTION field in 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032), the point codes you enter in this form will specify either the SSP point codes that support the overload capability, or the SSP exception point codes that do not support the overload capability.

When the platform experiences an overload condition, it will append ACG components onto the TCAP responses destined for the overload-capable point codes.

7.100.2 Available form versions

Three form versions are available for Form 3.3.5:

- 7.101 “SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version)” (p. 1050)
- 7.102 “SYSTEM OR CNAM OVERLOAD CAPABILITY EXCEPTION POINT CODE FORM (ANSI version)” (p. 1051)
- 7.103 “SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (CHN version)” (p. 1052)

7.100.3 Gateway platform

For gateway platform, the submenu form prompts you to select 1 for ITU or 2 for ANSI.

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7.101 SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version)

7.101.1 Illustration

Figure 7-63 Form 3.3.5: SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version)

The following illustrates Form 3.3.5: SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version).

```
Screen 1 of 1      SYSTEM OR CNAM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM


*>  1. SYSTEM OVERLOAD POINT CODE      _____



SYSTEM OVERLOAD POINT CODE. Enter a value between 1 and 16383.
```

7.101.2 Description of fields for SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version)

The following table defines the fields in the SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version).

Table 7-68 SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (ITU version) field descriptions

Field	Description
1	The SYSTEM OVERLOAD POINT CODE field specifies the ITU point code that either supports or does not support the ACG component of the platform overload. Whether this field accepts a supporting or exception point code is specified in the OVERLOAD CAPABILITY OR EXCEPTION field in 7.94 “Form 3.3.2: SCCP PARAMETERS FORM” (p. 1032). Up to five digits, range 1 to 16383.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.102 SYSTEM OR CNAM OVERLOAD CAPABILITY EXCEPTION POINT CODE FORM (ANSI version)

7.102.1 Illustration

Figure 7-64 Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (ANSI version)

The following illustrates Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (ANSI version).

```
Screen 1 of 1   SYSTEM OR CNAM OVERLOAD CAPABILITY EXCEPTION POINT
CODE FORM

*> SYSTEM OVERLOAD POINT CODE
1. NETWORK ID                  _
2. CLUSTER ID                  __
3. MEMBER ID                   __




NETWORK ID. Enter a value between 0 and 255.
```

7.102.2 Description of fields for SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (ANSI version)

The following table defines the fields in the SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (ANSI version).

Table 7-69 SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (ANSI version) field descriptions

Field	Description
1-3	The SYSTEM OVERLOAD POINT CODE fields (NETWORK ID, CLUSTER ID, MEMBER ID) specify the SS7 network ID number, cluster ID number, and member ID number for the point codes that either support or do not support ACG components on TCAP responses. Whether this field accepts a supporting or exception point code is specified in the OVERLOAD CAPABILITY OR EXCEPTION field in 7.94 "Form 3.3.2: SCCP PARAMETERS FORM" (p. 1032). The point code value must be 0-0-0. Each field, up to three digits, range 0 to 255.

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

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7.103 SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (CHN version)

7.103.1 Illustration

Figure 7-65 Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (CHN version)

The following illustrates Form 3.3.5: SYSTEM OR CNAM OVERLOAD CAPABILITY POINT CODE FORM (CHN version).

```
Screen 1 of 1   SYSTEM OR CNAM OVERLOAD CAPABILITY EXCEPTION POINT CODE FORM

*> SYSTEM OVERLOAD POINT CODE
1. MAIN AREA ID                  _
2. SUB-AREA ID                   __
3. POINT ID                      __




MAIN AREA ID. Enter a value between 0 and 255.
```

7.103.2 Description of fields for SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (CHN version)

The following table defines the fields in the SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (CHN version).

Table 7-70 SYSTEM OVERLOAD CAPABILITY/EXCEPTION POINT CODE FORM (CHN version) field descriptions

Field	Description
1	The SYSTEM OVERLOAD POINT CODE fields specify the MAIN AREA ID, SUB-AREA ID, and POINT ID numbers for the point codes that either support or do not support ACG components on TCAP responses. Whether this field accepts a supporting or exception point code is specified in the OVERLOAD CAPABILITY OR EXCEPTION field in 7.94 "Form 3.3.2: SCCP PARAMETERS FORM" (p. 1032). The point code value must be 0-0-0. Each field, up to three digits, range 0 to 255. The Main Area ID, Sub-Area ID, and Point ID must not all be set to zero.

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

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7.104 Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM

7.104.1 Overview

Use this form to specify an SSN protocol and routing type by a calling party SSN.

7.104.2 Available form versions

For CHN, this form is numbered as Form 3.3.6. For ANSI, INU, and gateway platform, this form is numbered as Form 3.3.7.

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7.105 MULTIPLE PROTOCOL BY SSNS FORM

7.105.1 Illustration

Figure 7-66 Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM

The following illustrates Form 3.3.6 MULTIPLE PROTOCOL BY SSNS FORM.

```
Screen 1 of 1       MULTIPLE PROTOCOL BY SSNS FORM

*>  1. SCCP CALLED  PARTY SSN          ___
*   2. SCCP CALLING PARTY SSN          ___
    3. PROTOCOL TYPE                   _________
    4. ROUTING TYPE                    _______
    5. ACG OVERLOAD CONTROL            _____




SCCP CALLED PARTY SSN. Enter a value between 5 and 254 or 0.
```

7.105.2 Description of fields for Multiple Protocol by SSNS Form

The following table defines the fields in the MULTIPLE PROTOCOL BY SSNS FORM (ITU and ANSI version).

Table 7-71 MULTIPLE PROTOCOL BY SSNS FORM field descriptions

Field	Description
1	SCCP CALLED PARTY SSN field, up to three digits, range: 5 to 254. SCCP CALLED PARTY SSN must be defined in 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016).
2	SCCP CALLING PARTY SSN field, up to three digits, range: 0 to 255.
3	PROTOCOL TYPE field. This must be the same as the value in the PROTOCOL TYPE field in 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016).
4	ROUTING TYPE field This must be the same as the value in the ROUTING TYPE field in 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016).
5	OVERLOAD field. This must be the same as the value in the OVERLOAD TYPE field in 7.90 “Form 3.3.1: SUBSYSTEM NUMBER FORM” (p. 1016).

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.106 Form 3.4.1: MTP3 MESSAGE PRIORITIES FORM

7.106.1 Overview

Use this form to set the message priorities for all of the signaling network management messages.

A message is transmitted based on a comparison between its priority and the current transmit congestion level of the link. Message priorities range in value from 0-3, with 0 being the lowest priority.

7.106.2 Illustration

Figure 7-67 Form 3.4.1: MTP3 MESSAGE PRIORITIES FORM

The following illustrates Form 3.4.1: MTP3 MESSAGE PRIORITIES FORM.

```
Screen 1 of 1        MTP3 MESSAGE PRIORITIES FORM

*>  1. NETWORK ID                  _____   17. LINK UNINHIBIT ACK          _
*   2. OFFICE ID                   ___     18. LINK INHIBIT DENIED         _
    3. CHANGEBACK ACKNOWLEDGEMENT  _       19. SIGNALLING LINK TEST        _
    4. CHANGEBACK DECLARATION      _       20. SIGNALLING LINK TEST ACK    _
    5. CHANGEOVER ACKNOWLEDGEMENT  _       21. SRS TEST CLUSTER PROHIBITED _
    6. CHANGEOVER ORDER            _       22. SRS TEST CLUSTER RESTRICTED _
    7. EMERGENCY CHANGEOVER ACK    _       23. SRS CONGESTION TEST         _
    8. EMERGENCY CHANGEOVER ORDER  _       24. SRS TEST RESTRICTED         _
    9. EXTENDED CHANGEOVER ACK     _       25. SRS TEST PROHIBITED         _
   10. EXTENDED CHANGEOVER         _       26. TRANSFER ALLOWED            _
   11. LINK INHIBIT                _       27. TRANSFER CONTROLLED         _
   12. LINK FORCED UNINHIBIT       _       28. TRANSFER PROHIBITED         _
   13. LINK INHIBIT ACK            _       29. TRANSFER RESTRICTED         _
   14. LINK LOCAL INHIBIT          _       30. TRANSFER CLUSTER ALLOWED    _
   15. LINK UNINHIBIT              _       31. TRANSFER CLUSTER RESTRICTED _
   16. LINK REMOTE INHIBIT         _       32. TRANSFER CLUSTER PROHIBITED _
#SRS=SIGNALLING ROUTE SET

NETWORK ID. Enter a 5-character alphabetic string
```

7.106.3 Saving management messages during congested conditions

Three levels of transmit congestion are defined for each link (levels 1-3), with level 1 corresponding to the lowest congestion level. If a link encounters a congestion condition, then the MTP discards all of the outgoing messages with message priorities less than the congestion level.

If a network management message must not be discarded under any extreme congestion conditions, it should be given a message priority of 3.

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7.106.4 Description of fields for MTP3 MESSAGE PRIORITIES FORM

The following table defines the fields in the MTP3 MESSAGE PRIORITIES FORM.

Table 7-72 MTP3 MESSAGE PRIORITIES FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This is not an SS7 network ID. This field is not significant for the platform. Up to three characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. One digit, 0 to 3, read only.
Message priorities	Refer to *ANSI T1.111-1988* for detailed descriptions of each message.
3	The CHANGEBACK ACKNOWLEDGEMENT field contains the message priority for the CBA message. One digit, range: 0 to 3.
4	The CHANGEBACK DECLARATION field contains the message priority for the CBD message. One digit, range: 0 to 3.
5	The CHANGEOVER ACKNOWLEDGEMENT field contains the priority for the COA message. One digit, range: 0 to 3.
6	The CHANGEOVER ORDER field contains the message priority for the COO message. One digit, range: 0 to 3.
7	The EMERGENCY CHANGEOVER ACK field contains the message priority for the ECA message. One digit, range: 0 to 3.
8	The EMERGENCY CHANGEOVER ORDER field contains the message priority for the ECO message. One digit, range: 0 to 3.
9	The EXTENDED CHANGEOVER ACK field contains the message priority for the ECA message. One digit, range: 0 to 3.
10	The EXTENDED CHANGEOVER field contains the message priority for the EC message. One digit, range: 0 to 3.
11	The LINK INHIBIT field contains the message priority for the LIN message. One digit, range: 0 to 3.
12	The LINK FORCED UNINHIBIT field contains the message priority for the LFU message. One digit, range: 0 to 3.
13	The LINK INHIBIT ACK field contains the message priority for the LIA message. One digit, range: 0 to 3.
14	The LINK LOCAL INHIBIT field contains the message priority for the LLI message. One digit, range: 0 to 3.
15	The LINK UNINHIBIT field contains the message priority for the LUN message. One digit, range: 0 to 3.

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Table 7-72 MTP3 MESSAGE PRIORITIES FORM field descriptions (continued)

Field	Description
16	The LINK REMOTE UNINHIBIT field contains the message priority for the LRI message. One digit, range: 0 to 3.
17	The LINK UNINHIBITACK field contains the message priority for the LUA message. One digit, range: 0 to 3.
18	The LINK INHIBIT DENIED field contains the message priority for the LID message. One digit, range: 0 to 3.
19	The SIGNALING LINK TEST field contains the message priority for the SLT message. One digit, range: 0 to 3.
20	The SIGNALING LINK TEST ACK field contains the message priority for the SLTA message. One digit, range: 0 to 3.
21	The SRS TEST CLUSTER PROHIBITED field contains the message priority for the RCP message. One digit, range: 0 to 3.
22	The SRS TEST CLUSTER RESTRICTED field contains the message priority message for the RCR message. One digit, range: 0 to 3.
23	The SRS CONGESTION TEST field contains the message priority for the RCT message. One digit, range: 0 to 3.
24	The SRS TEST RESTRICTED field contains the message priority for the RSR message. One digit, range: 0 to 3.
25	The SRS TEST PROHIBITED field contains the message priority for the RSP message. One digit, range: 0 to 3.
26	The TRANSFER ALLOWED field contains the message priority of the TFA message. One digit, range: 0 to 3.
27	The TRANSFER CONTROLLED field contains the message priority for the TFC message. One digit, range: 0 to 3.
28	The TRANSFER PROHIBITED field contains the message priority for the TFP message. One digit, range: 0 to 3.
29	The TRANSFER RESTRICTED field contains the message priority for the TFR message. One digit, range: 0 to 3.
30	The TRANSFER CLUSTER ALLOWED field contains the message priority for the TCA message. One digit, range: 0 to 3.
31	The TRANSFER CLUSTER RESTRICTED field contains the message priority for the TCR message. One digit, range: 0 to 3.
32	The TRANSFER CLUSTER PROHIBITED field contains the message priority for the TCP message. One digit, range: 0 to 3.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.107 Form 3.4.2: SCCP MESSAGE PRIORITIES FORM

7.107.1 Overview

Use this form to set the message priorities for the outgoing SCCP management messages.

A message is transmitted based on a comparison between its priority and the current transmit congestion level of the link.

Message priorities have one of four values, 0-3, with the lowest priority being 0.

7.107.2 Illustration

Figure 7-68 Form 3.4.2: SCCP MESSAGE PRIORITIES FORM

The following illustrates Form 3.4.2: SCCP MESSAGE PRIORITIES FORM.

```
Screen 1 of 1       SCCP MESSAGE PRIORITIES FORM

*>  1. NETWORK ID                                 _____
*   2. OFFICE ID                                  ___
    3. SUBSYSTEM ALLOWED                          _
    4. SUBSYSTEM PROHIBITED                       _
    5. SUBSYSTEM STATUS TEST                      _
    6. SUBSYSTEM OUT OF SERVICE REQUEST           _
    7. SUBSYSTEM OUT OF SERVICE GRANT             _
    8. SUBSYSTEM BACKUP ROUTING                   _
    9. SUBSYSTEM NORMAL ROUTING                   _
   10. SUBSYSTEM ROUTING STATUS TEST              _




NETWORK ID.  Enter a 5-character alphabetic string
```

7.107.3 Saving management messages during congested conditions

Three levels of transmit congestion are defined for each link (levels 1-3), with level 1 corresponding to the lowest congestion level. If a link encounters a congestion condition, then the MTP discards all of the outgoing messages with message priorities less than the congestion level.

If a network management message must not be discarded under any extreme congestion conditions, it should be given a message priority of 3.

7.107.4 Gateway platform

The gateway platform uses the ITU version of FORM 3.4.2.

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7.107.5 Description of fields for SCCP MESSAGE PRIORITIES FORM

The following table defines the fields in the SCCP MESSAGE PRIORITIES FORM.

Table 7-73 SCCP MESSAGE PRIORITIES FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This is not an SS7 network ID. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. Up to three digits, read only.
Message priorities	Refer to *ANSI T1.111-1988* for detailed descriptions of each message.
3	The SUBSYSTEM ALLOWED field contains the message priority for the SSA message. One digit, range: 0 to 3.
4	The SUBSYSTEM PROHIBITED field contains the message priority for the SSP message. One digit, range: 0 to 3.
5	The SUBSYSTEM STATUS TEST field contains the message priority for the SST message. One digit, range: 0 to 3.
6	The SUBSYSTEM OUT OF SERVICE REQUEST field contains the message priority for the SOR message. One digit, range: 0 to 3.
7	The SUBSYSTEM OUT OF SERVICE GRANT field contains the message priority for the SOG message. One digit, range: 0 to 3.
8	The SUBSYSTEM BACKUP ROUTING field, for this current implementation, does not require the platform to send SBR messages. One digit, range: 0 to 3.
9	The SUBSYSTEM NORMAL ROUTING field, for this current implementation, does not require the platform to send SNR messages. One digit, range: 0 to 3.
10	The SUBSYSTEM ROUTING STATUS field, for this current implementation, does not require the platform to send SRT messages. One digit, range: 0 to 3.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.108 Form 3.4.3: SSP CAPABILITY FORM

7.108.1 Overview

Use this form to assign SSP capabilities.

7.108.2 Available form versions

Three form versions are available for Form 3.4.3:

- 7.109 “SSP CAPABILITY FORM (ITU version)” (p. 1061)
- 7.110 “SSP CAPABILITY FORM (ANSI version)” (p. 1062)
- 7.111 “SSP CAPABILITY FORM (CHN version)” (p. 1063)

7.108.3 Gateway platform

For gateway platform, the submenu form prompts you to select 1 for ITU or 2 for ANSI.

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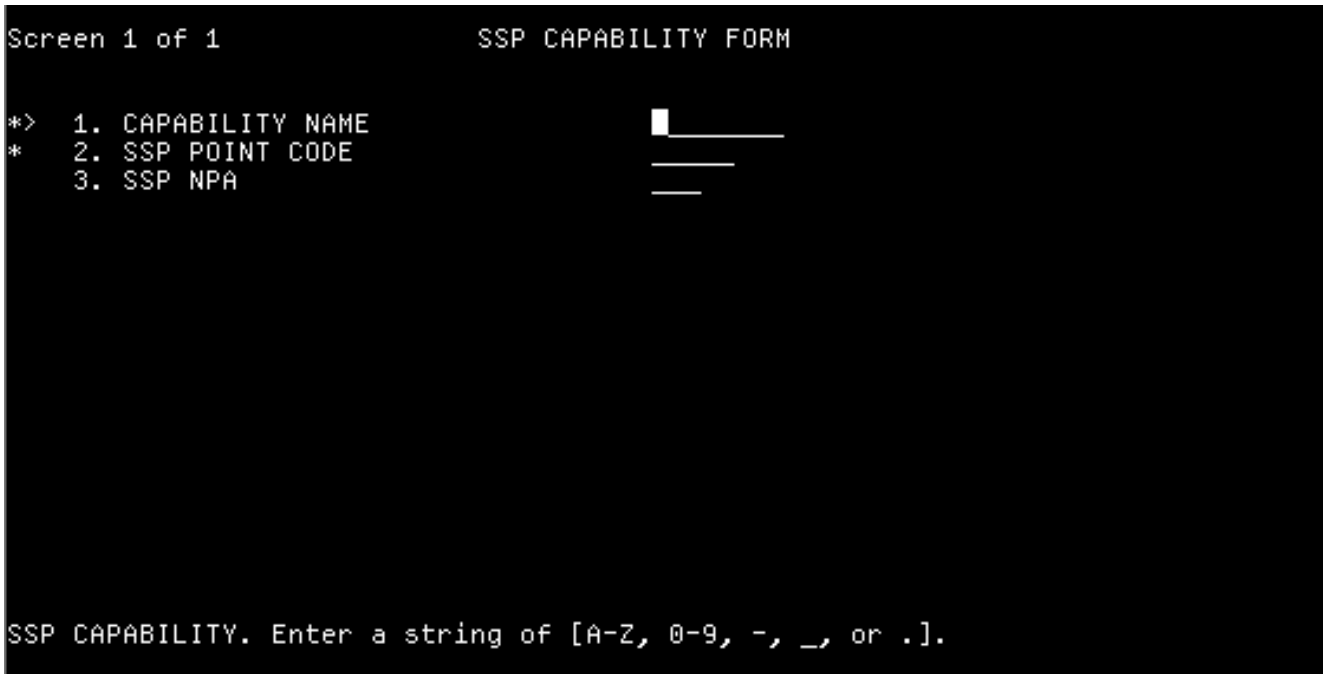
7.109 SSP CAPABILITY FORM (ITU version)

7.109.1 Illustration

The following illustrates Form 3.4.3: SSP CAPABILITY FORM (ITU version).

Figure 7-69 Form 3.4.3: SSP CAPABILITY FORM (ITU version)



7.109.2 Description of fields for SSP CAPABILITY FORM (ITU version)

The following table defines the fields in the SSP CAPABILITY FORM (ITU version).

Table 7-74 SSP CAPABILITY FORM (ITU version) field descriptions

Field	Description
1	The CAPABILITIES NAME field specifies the capability name. Its value can be up to eight characters.
2	The SSP POINT CODE field specifies ITU for the point code of the SSP or STP that is connected to the platform. Up to five digits, range: 1 to 16383.
3	The SSP NPA field specifies the SSP area code. Three digits, range: 200 to 999.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.110 SSP CAPABILITY FORM (ANSI version)

7.110.1 Illustration

The following illustrates Form 3.4.3: SSP CAPABILITY FORM (ANSI version).

Figure 7-70 Form 3.4.3: SSP CAPABILITY FORM (ANSI version)

7.110.2 Description of fields for SSP CAPABILITY FORM (ANSI version)

The following table defines the fields in the SSP CAPABILITY FORM (ANSI version).

Table 7-75 SSP CAPABILITY FORM (ANSI version) field descriptions

Field	Description
1	The CAPABILITIES NAME field specifies the capability name. Its value can be up to eight characters.
2-4	The SSP POINT CODE field specifies the NETWORK ID, CLUSTER ID, and MEMBER ID numbers for the point code of the SSP or STP that is connected to the platform. Each field, up to three digits, range: 0 to 255 The Network ID, Cluster ID, and Member ID must not all be set to zero.
5	The SSP NPA field specifies the SSP area code. Three digits, range: 200 to 999.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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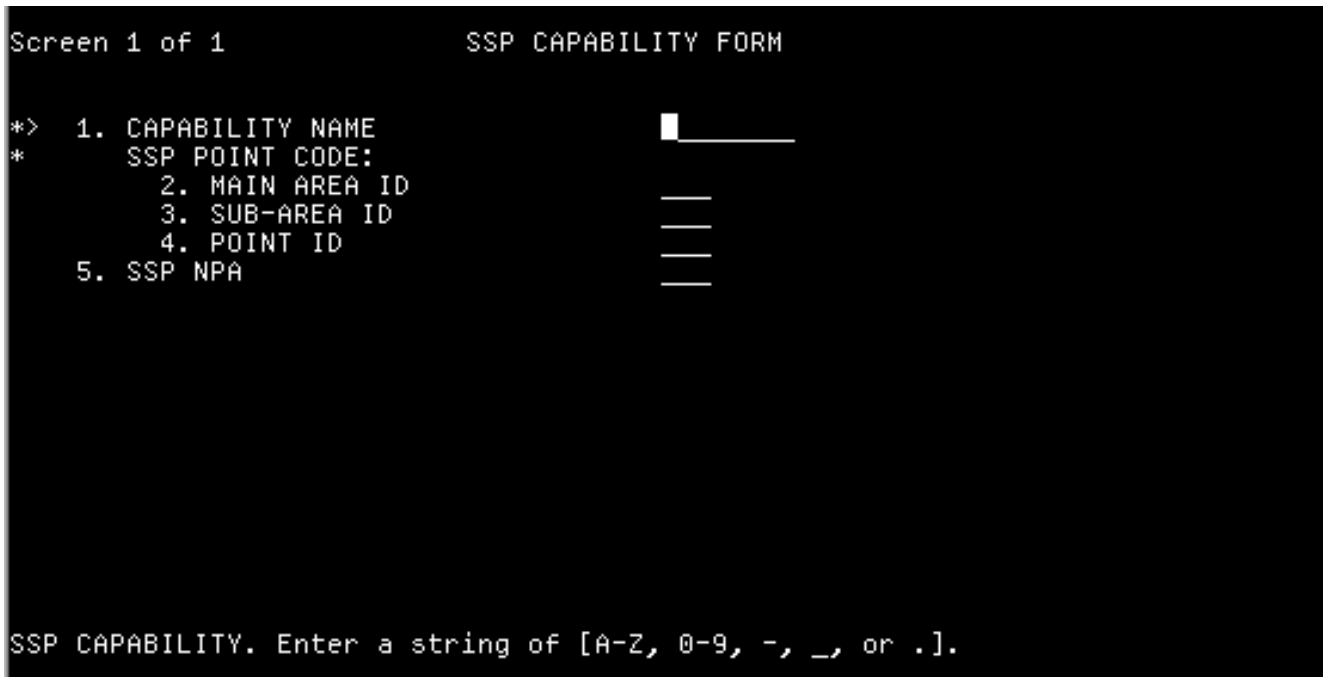
7.111 SSP CAPABILITY FORM (CHN version)

7.111.1 Illustration

The following illustrates Form 3.4.3: SSP CAPABILITY FORM (CHN version).

Figure 7-71 Form 3.4.3: SSP CAPABILITY FORM (CHN version)



7.111.2 Description of fields for SSP CAPABILITY FORM (CHN version)

The following table defines the fields in the SSP CAPABILITY FORM (CHN version).

Table 7-76 SSP CAPABILITY FORM (CHN version) field descriptions

Field	Description
1	The CAPABILITIES NAME field specifies the capability name. Its value can be up to eight characters.
2-4	The SSP POINT CODE field specifies the MAIN AREA ID, SUB-AREA ID and POINT CODE ID of the SSP or STP that is connected to the platform. Each field, up to three digits, range: 0 to 255 The Main Area ID, Sub-Area ID, and Point ID must not all be set to zero.
5	The SSP NPA field specifies the SSP area code. Three digits, range: 200 to 999.

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For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.112 Form 3.4.4: MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM

7.112.1 Overview

Use this form to set the performance thresholds for the SS7 links. The threshold values should be set to the expected performance of the link.

Thresholds are defined for a one-hour period. In most cases, if the one-hour period is exceeded, a marginal performance report is generated for that link. In the case of the LINK ACTIVITY TIME field, a report is generated if the one-hour threshold is not attained.

Note that this form is for update only.

7.112.2 Illustration

The following illustrates Form 3.4.4: MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM.

Figure 7-72 Form 3.4.4: MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM

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7.112.3 Description of fields for MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM

The following table defines the fields in the MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM.

Table 7-77 MTP2 LINK MARGINAL PERFORMANCE THRESHOLDS FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. Up to three digits, read only.
3	The MSUs RECEIVED field contains the maximum number of MSUs that are received on a link in one hour. For example, if the link is expected to carry 10 transactions per second, the appropriate value for this field is 36000 transactions per hour. If the link receives more than 36000 MSUs, a report is generated. Three to six digits, range: 100 to 999999
4	The MSUs TRANSMITTED field contains the maximum number of MSUs that are transmitted on a link in one hour. Three to six digits, range: 100 to 999999
5	The MSUs RE-TRANSMITTED field contains the maximum number of MSUs that are retransmitted on a link in one hour. Up to four digits, range: 1 to 9999.
6	The SUs RECEIVED IN ERROR field contains the maximum number of signaling units that are received in error by a link. Up to four digits, range: 1 to 9999.
7	The NEGATIVE ACKS RECEIVED field contains the maximum number of negative acknowledgements that are received on a link. Up to four digits, range: 1 to 9999.
8	The AUTOMATIC CHANGEOVERS field contains the maximum number of automatic changeovers that are performed by a link. Up to three digits, range: 1 to 999.
9	The LINK ACTIVITY TIME field contains the minimum time in seconds that the link must be active during a one-hour period. If the link is not active long enough to meet this threshold, a report is generated. Up to four digits, range: 1 to 3600.
10	The SUER field contains the allowable signaling unit error rate per hour (as a percentage). Up to three digits, range: 1 to 100.

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For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.113 Form 3.4.5: SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM

7.113.1 Overview

Use this form to set the performance thresholds for the SS7 links. The threshold values should be set to the expected performance of the link.

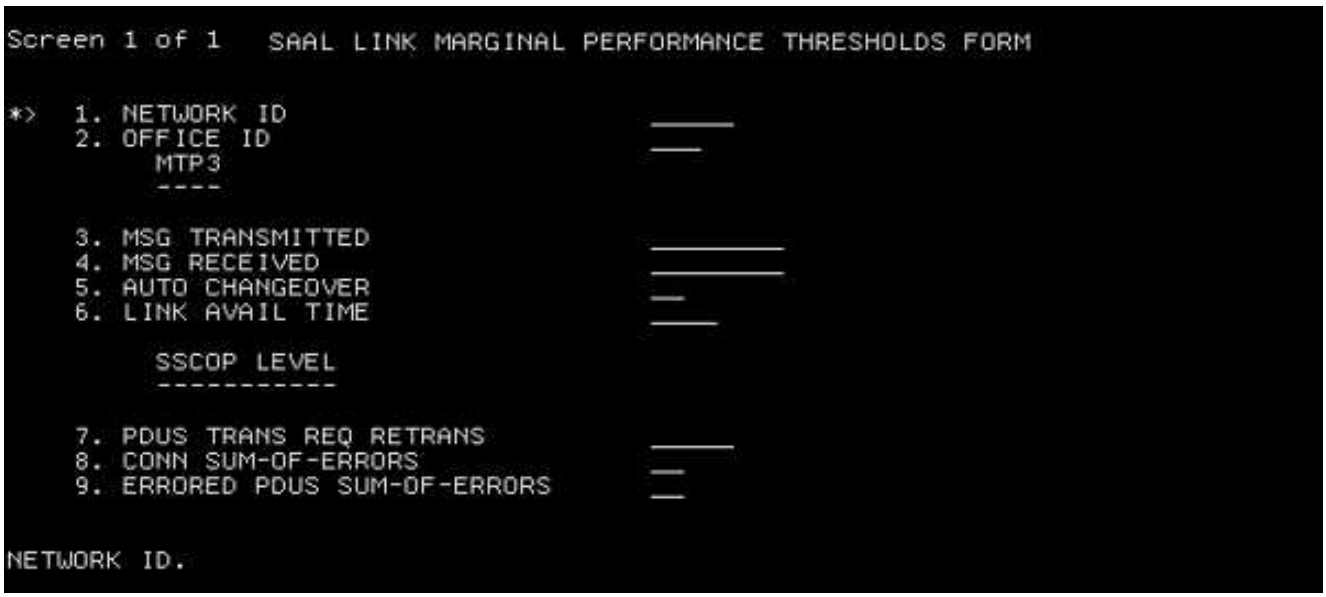
Thresholds are defined for a one hour period. In most cases, if the one hour period is exceeded, a marginal performance report is generated for that link. In the case of the LINK AVAIL TIME field, a report is generated if the one-hour threshold is not attained.

Note that this form is for update only.

7.113.2 Illustration

Form 3.4.5: SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM.

Figure 7-73 Form 3.4.5: SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM



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7.113.3 Description of fields for SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM

The following table defines the fields in the SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM.

Table 7-78 SAAL LINK MARGINAL PERFORMANCE THRESHOLDS FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. Up to three digits, read only.
3	The MSG TRANSMITTED field contains the maximum number of MSGs that are transmitted on a link in one hour. Valid values are 100000 to 30000000.
4	The MSG RECEIVED field contains the maximum number of MSGs that are received on a link in one hour. Valid values are 100000 to 30000000.
5	The AUTO CHANGEOVER field contains the maximum number of automatic changeovers that are performed by a link. Valid values are 1 to 32.
6	The LINK AVAIL TIME field contains the minimum time in seconds that the link must be available (active) during a one hour period. If the link is not active long enough to meet this threshold, a report is generated. Valid values are 1 to 3600.
7	The PDUS TRANS REQ RETRANS field contains the maximum number of signaling units that can retransmit a transmission request in one hour. Valid values are 10 to 10000.
8	The CONN SUM-OF-ERRORS field contains the maximum number of connection errors received by the link. Valid values are 1 to 32.
9	The ERRORED PDUS SUM-OF-ERRORS field contains the maximum number of signaling units that are received in error by a link. Valid values are 1 to 32.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.114 Form 3.4.6: SPECIAL STUDY MEASUREMENTS FOR OPC FORM

7.114.1 Overview

Use this form to identify an originating point code.

7.114.2 Available form versions

Three form versions are available for Form 3.4.5:

- 7.115 “SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version)” (p. 1071)
- 7.116 “SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version)” (p. 1072)
- 7.117 “SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version)” (p. 1073)

7.114.3 Gateway platform

For gateway platform, the submenu prompts you to select 1 for ITU or 2 for ANSI.

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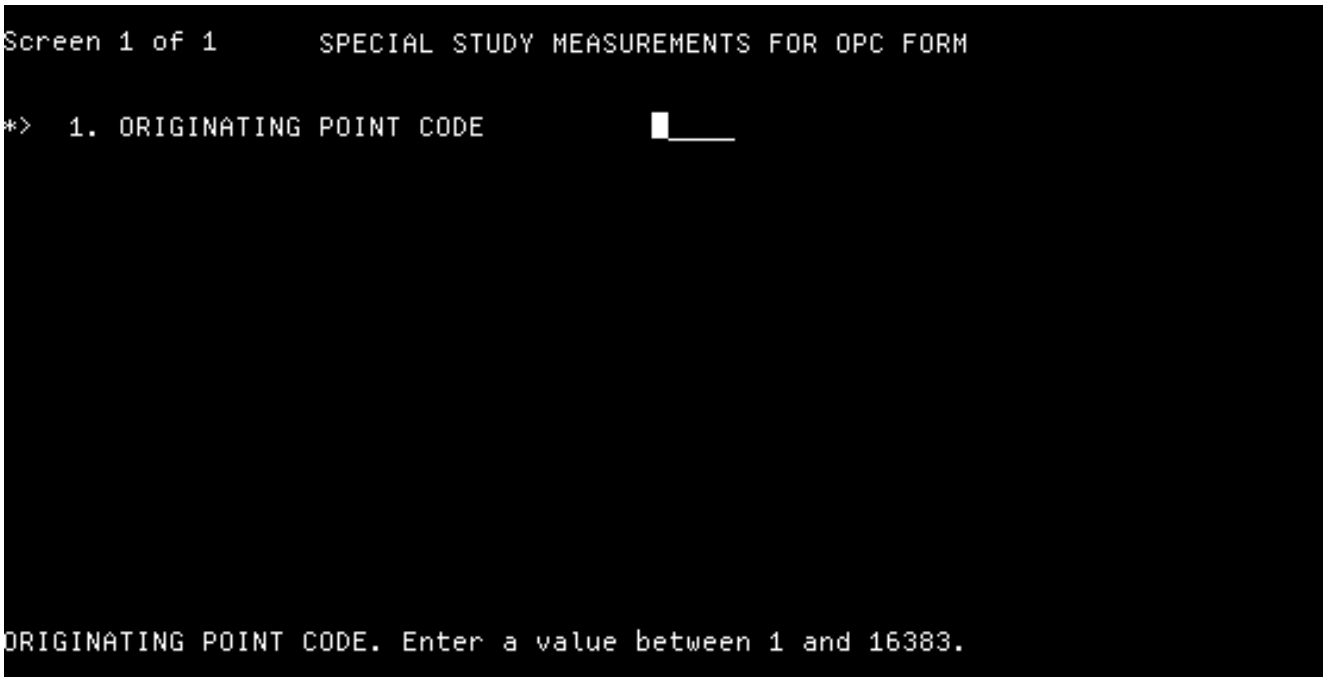
7.115 SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version)

7.115.1 Illustration

The following illustrates Form 3.4.5: SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version).

Figure 7-74 Form 3.4.5: SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version)



7.115.2 Description of fields for SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version)

The following table defines the fields in the SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version).

Table 7-79 SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ITU version) field descriptions

Field	Description
1	The ORIGINATING POINT CODE field specifies the originating point code to be used for special study measurements. UP to five digits, range: 1 to 16383.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.116 SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version)

7.116.1 Illustration

Figure 7-75 Form 3.4.5: SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version)

The following illustrates Form 3.4.5: SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version).

```
Screen 1 of 1  SPECIAL STUDY MEASUREMENTS FOR OPC FORM


  ORIGINATING POINT CODE
     1. NETWORK ID                    ___
     2. CLUSTER ID                    ___
     3. MEMBER  ID                    ___









NETWORK ID. Enter a value between 0 and 255.
```

7.116.2 Description of fields for SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version)

The following table defines the fields in the SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version).

Table 7-80 SPECIAL STUDY MEASUREMENTS FOR OPC FORM (ANSI version) field descriptions

Field	Description
1-3	The ORIGINATING POINT CODE field specifies the originating point code to be used for special study measurements. For ANSI, the NETWORK ID, CLUSTER ID, and MEMBER ID fields specify the SS7 network ID, cluster ID and member ID numbers for the originating point code. Each field, up to three digits, range: 0 to 255. The point code value must not be 0-0-0.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.117 SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version)

7.117.1 Illustration

Figure 7-76 Form 3.4.5: SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version)

The following illustrates Form 3.4.5: SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version).

```
Screen 1 of 1  SPECIAL STUDY MEASUREMENTS FOR OPC FORM


  ORIGINATING POINT CODE
     1. MAIN AREA ID                    ___
     2. SUB-AREA ID                     ___
     3. POINT ID                        ___




NETWORK ID. Enter a value between 0 and 255.
```

7.117.2 Description of fields for SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version)

The following table defines the fields in the SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version).

Table 7-81 SPECIAL STUDY MEASUREMENTS FOR OPC FORM (CHN version) field descriptions

Field	Description
1-3	The ORIGINATING POINT CODE field specifies the originating point code to be used for special study measurements. The component fields specify MAIN AREA ID, SUB-AREA ID, and POINT ID, for the originating point code. Each field, up to three digits, range: 0 to 255. The Main Area ID, Sub-Area ID, and Point ID must not all be set to zero. The point code value must not be 0-0-0.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.118 Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM

7.118.1 Overview

Use this form to specify the base characteristics of a host machine that is used to send and/or receive Intelligent Network Application Protocol (INAP) messages over a TCP/IP network.

7.118.2 Illustration

Figure 7-77 Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM

The following illustrates Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM.

```
Screen 1 of 1        SS7 TCP HOST CONFIGURATION FORM

*>  1. HOST NAME                    ____________________________________
    2. DATA LIMIT                   _______
    3. HOST TYPE                    _









HOST NAME. Enter TCP/IP host for which the configuration applies.
```

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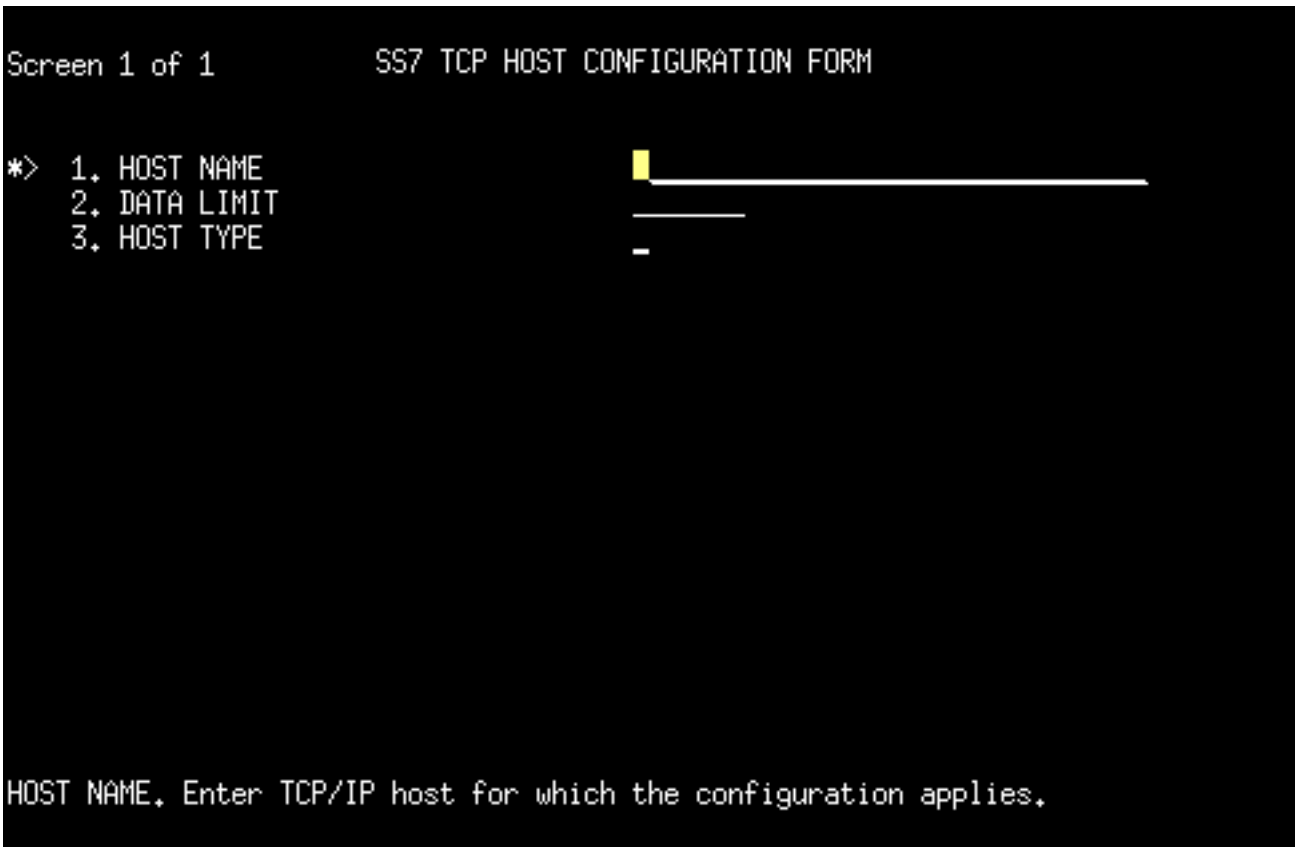
The following illustrates Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM.



7.118.3 Related forms

To further specify the functionality of a host machine, use the following related forms:

- 7.119 “Form 3.5.2: SS7 TCP LISTENING PORT FORM” (p. 1077)
- 7.120 “Form 3.5.3: SS7 TCP CONNECTING PORT FORM” (p. 1079)
- 7.121 “Form 3.5.4: SS7 TCP PARAMETERS FORM” (p. 1081)

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7.118.4 Description of fields for TCP HOST CONFIGURATION FORM

The following table defines the fields in the TCP HOST CONFIGURATION FORM.

Table 7-82 TCP HOST CONFIGURATION FORM field descriptions

Field	Description
1	The HOST NAME field specifies the host name of the remote host machine that will be sending and/or accepting INAP messages over a TCP/IP network. You may enter the host name corresponding to an IPv4 or IPv6 address. The host name translation must be listed in the */etc/inet/hosts* system file for IPv4 and IPv6 addresses to prevent possible system switchover.
2	The DATA LIMIT field specifies the maximum number of bytes per second that the host machine can receive/send on the TCP/IP network. Up to seven digits, the valid range is a number from 1 to 1000000. Default:10000.
3	The HOST TYPE field indicates whether the host machine supports the signaling gateway function in the network it is connected to. Signaling gateways provide an interface between SS7 platform services and TCP/IP network. The valid values for this field are Y, N, or M. Y indicates that the machine is a signaling gateway. N indicates that the machine is not a signaling gateway. M indicates that the machine is mated. N is the default value. N is used for GDI protocol. Y and M are used for TALI protocol.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.119 Form 3.5.2: SS7 TCP LISTENING PORT FORM

7.119.1 Overview

Once you have used 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074) to commit a host to process messages from SS7 and TCP networks, you can use this form to configure a port to listen for client requests. This involves specifying the client host name or IP address that will be sending a request, the port number it will send the request to, and the transport protocol that will be used to send the request.

7.119.2 Illustration

Figure 7-78 Form 3.5.2: SS7 TCP LISTENING PORT FORM

The following illustrates Form 3.5.2: SS7 TCP LISTENING PORT FORM.

```
Screen 1 of 1       SS7 TCP LISTENING PORT FORM

*>  1. HOST NAME                          ____________________
*   2. PORT NUMBER                        _____
    3. TRANSPORT PROTOCOL                 _______
    4. GROUP ID                           __




HOST NAME. Enter the IP host name of remote TCP client signaling system.
```

7.119.3 Related forms

To further configure an SS7 TCP network, use the following related forms:

- 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074)
- 7.120 “Form 3.5.3: SS7 TCP CONNECTING PORT FORM” (p. 1079)
- 7.121 “Form 3.5.4: SS7 TCP PARAMETERS FORM” (p. 1081)

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7.119.4 Description of fields for SS7 TCP LISTENING PORT FORM

The following table defines the fields in the SS7 TCP LISTENING PORT FORM.

Table 7-83 SS7 TCP LISTENING PORT FORM field descriptions

Field	Description
1	The HOST NAME field specifies the host name of the remote host machine that will be sending and/or accepting INAP messages over a TCP/IP network. The host name must first be provisioned in 7.118 "Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM" (p. 1074). You should also list the host name in the */etc/hosts* system file to prevent possible system switchover. The host name must translate to either an IPv4 or IPv6 address.
2	The PORT NUMBER field specifies the port number of the incoming connection. Valid range is a number from 1 to 65535.
3	The TRANSPORT PROTOCOL field specifies the transport protocol that the client machine in field one will use when sending messages to the specified port in field 2. Valid values are GDI or TALI. The default value is GDI.
4	The GROUP ID field is used to group host name/port numbers that identify a site. All connections opened for host/port combinations in the same GROUP ID are used as a pool by the SCH while routing requests. If you are using the SR3511 transport protocol, valid values are 1-16. If you are using either GDI or TALI, the valid value is 0.

For database operations procedures, refer to the 7.11 "Database Operations" (p. 843) section.

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7.120 Form 3.5.3: SS7 TCP CONNECTING PORT FORM

7.120.1 Overview

Once you have used 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074) to commit a host to process messages from SS7 and TCP networks, you can use this form to configure a port that will connect to a server over the TCP network.

This involves specifying the server host name or its IP address that will be listening for a request, the port number that will be used to send the server a request, and the transport protocol that will be used to send the request.

7.120.2 Illustration

Figure 7-79 Form 3.5.3: SS7 TCP CONNECTING PORT FORM

The following illustrates Form 3.5.3: SS7 TCP CONNECTING PORT FORM.

```
Screen 1 of 1       SS7 TCP CONNECTING PORT FORM

*>  1. HOST NAME                        ________________________
*   2. PORT NUMBER                      _____
    3. TRANSPORT PROTOCOL               ______




HOST NAME. Enter the  name of the destination TCP/IP host.
```

7.120.3 Related forms

To further configure an SS7 TCP network, use the following related forms:

- 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074)
- 7.119 “Form 3.5.2: SS7 TCP LISTENING PORT FORM” (p. 1077)
- 7.121 “Form 3.5.4: SS7 TCP PARAMETERS FORM” (p. 1081)

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7.120.4 Description of fields for SS7 TCP CONNECTING PORT FORM

The following table defines the fields in the SS7 TCP CONNECTING PORT FORM.

Table 7-84 SS7 TCP CONNECTING PORT FORM field descriptions

Field	Description
1	The HOST NAME field specifies the host name of the remote host machine that will be sending and/or accepting INAP messages over a TCP/IP network. The host name must first be provisioned in 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074). You should also list the host name in the */etc/inet/hosts* system file to prevent possible system switchover. The host name must translate to either an IPv4 or IPv6 address.
2	The PORT NUMBER field specifies the port number of the incoming connection. The valid range is a number from 1 to 65535.
3	The TRANSPORT PROTOCOL field specifies the transport protocol that the client machine in field one will use when sending messages to the specified port in field 2. Valid values are GDI or TALI. The default value is GDI.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.121 Form 3.5.4: SS7 TCP PARAMETERS FORM

7.121.1 Overview

Use this form to specify the parameters that are required to send INAP messages over a TCP/IP network. You may also use this form to specify protocol-specific parameters. Note that while you may update existing fields, you are not allowed to insert or delete fields.

7.121.2 Illustration

Figure 7-80 Form 3.5.4: SS7 TCP PARAMETERS FORM

The following illustrates Form 3.5.4: SS7 TCP PARAMETERS FORM.

```
Screen 1 of 1   SS7 TCP PARAMETERS FORM

*>  1. NETWORK ID                        _____
*   2. OFFICE ID                         ___
    3. GDI KEEPALIVE REQ TIMER           _____
    4. GDI KEEPALIVE RSP TIMER           _____
    5. TALI T1 TIMER                     _____
    6. TALI T2 TIMER                     _____
    7. TALI T3 TIMER                     _____
    8. TALI T4 TIMER                     _____



NETWORK ID. Not changeable.
```

7.121.3 Related forms

To further configure an SS7 TCP network, use the following related forms:

- 7.118 “Form 3.5.1: SS7 TCP HOST CONFIGURATION FORM” (p. 1074)
- 7.119 “Form 3.5.2: SS7 TCP LISTENING PORT FORM” (p. 1077)
- 7.120 “Form 3.5.3: SS7 TCP CONNECTING PORT FORM” (p. 1079)

7.121.4 Description of fields for SS7 TCP PARAMETERS FORM

The following table defines the fields in the SS7 TCP PARAMETERS FORM.

Table 7-85 SS7 TCP PARAMETERS FORM field descriptions

Field	Description
1	The NETWORK ID field specifies the type of office. Up to five characters.

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Table 7-85 SS7 TCP PARAMETERS FORM field descriptions (continued)

Field	Description
2	The OFFICE ID field specifies the local name of the office. Up to three characters.
3	The GDI KEEP ALIVE REQ TIMER field specifies the value for a GDI socket's keep alive request timer (in milliseconds). If a GDI socket's idle time (idle time being defined as a period of time when no incoming or outgoing messages are processed) exceeds the value specified in the GDI KEEP ALIVE REQ TIMER field, an audit is conducted on the socket. A keep_alive_request message is sent to the network element on the opposite end of the socket. If that network element does not reply in a time that is less than the value of the GDI KEEP ALIVE RSP TIMER (field 4), the socket connection is closed. Five digits, range: 10000 to 90000, default: 30000.
4	The GDI KEEP ALIVE RSP TIMER field specifies the value for a GDI socket's response timer (in milliseconds). Five digits, range: 10000 to 90000, default: 30000.
5	The TALI T1 TIMER field specifies the value for a TALI socket's test message timer (in milliseconds). If a TALI socket's idle time (idle time being defined as a period of time when no incoming or outgoing messages are processed) exceeds the value specified in the TALI T1 TIMER field, an audit is conducted on the socket. A test message is sent to the network element on the opposite end of the socket. If that network element does not reply in a time that is less than the value of the TALI T2 TIMER (field 6), the socket connection is closed. Three to five digits, range: 100 to 60000, default: 3000.
6	The TALI T2 TIMER field specifies the value for a TALI socket's response message timer (in milliseconds). Three to five digits, range: 100 to 60000, default: 2000.
7	The TALI T3 TIMER field specifies the amount of time (in milliseconds) that the network element should continue to process service data after a management prohibit traffic event has occurred. Three to five digits, range: 100 to 60000, default: 5000.
8	The TALI T4 TIMER field specifies the value for a TALI socket's monitor message timer (in milliseconds). Whenever the TALI T4 TIMER expires, a "moni" monitor message is sent out on a socket to measure the round trip delay on the socket. The network element on the receiving end of the socket returns a "mona" (monitor acknowledge) message to the network element on the originating end of the socket. This allows that network element to determine the round trip delay on the socket. Three to five digits, range: 100 to 60000, default: 60000.

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For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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7.122 Form 3.6.1.CLUSTER PARAMETERS FORM

7.122.1 Overview

Use this form to view the control parameters of clustering SS7, including cluster node ID, cluster routing preference and block SS7 link flag. The form is for view only.

7.122.2 Illustration

The following figure shows the Form 3.6.1: SS7 CLUSTER PARAMETERS FORM.

Figure 7-81 Form 3.6.1 CLUSTER PARAMETERS FORM

```
Screen 1 of 1    CLUSTER PARAMETERS FORM



*>  1. NETWORK ID                        _____
    2. OFFICE ID                         ___
    3. CLUSTER NODE ID                   __
    4. CLUSTER ROUTING                   ___
    5. BLOCK CLUSTER SS7 LINKS           _
    6. BLOCK LOCAL SS7 LINKS             _
    7. NAMING RULE FOR CLUSTER NAME      _
    8. CONNECTION DELAY TIMER            __
    9. NUMBER OF NODES UP TO CONNECT     __
```

7.122.3 Form Dependencies

This form will not take effect if the DISTRIBUTED SS7 field in form "Form 2.6: SS7 OFFICE PARAMETERS FORM" (5-24) is not set to 'C' or 'M'.

7.122.4 Description of fields for CLUSTER PARAMETERS FORM

Table 7-86 CLUSTER PARAMETERS FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant to the platform. Up to three digits, read only.
3	The CLUSTER NODE ID field contains the index to the node in the cluster. Up to two digits, range: 0-15 for Solaris platform or 0-31 for Linux platform, read only.

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Table 7-86 CLUSTER PARAMETERS FORM field descriptions (continued)

Field	Description
4	The CLUSTER ROUTING field contains routing preference for the entire cluster. Valid values include: The CLUSTER ROUTING field contains routing preference for the entire cluster. Valid values include: • LL - used to indicate all nodes in the cluster are connected via a LAN. With this option, preference will be given first to local routing, followed by routing to a node over the LAN. • LLW - used to indicate some nodes in the cluster are connected via a WAN. With this option, preference will be given first to local routing, followed by routing over the LAN. Routing over the WAN is only used when there are no geographically located resources. • LS - this option indicates Load Sharing is supported. No local or LAN preference is provided. Messages are fully distributed round robin to all nodes in the cluster. Read only. • LBI - similar to the LL routing type, outgoing messages are distributed to the LAN if this Node's SS7 links are OOS and NOT distributed if this Nodes links are IS. Unlike the LL routing type, incoming messages will NOT be distributed if the SSN or Node is in an overload condition. Also, incoming messages for an SSN that is OOS will NOT be distributed, but rather incur failure treatment. • LBO - similar to the LL routing type, outgoing messages are distributed to the LAN if this Node's SS7 links are OOS and NOT distributed if this Nodes links are IS. Unlike the LL routing type, incoming messages will NOT be distributed if the SSN or Node is in an overload condition. Unlike the LBI routing type, the Incoming messages for an SSN that is OOS will be distributed to the LAN.

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Table 7-86 CLUSTER PARAMETERS FORM field descriptions (continued)

Field	Description
4 (continued)	• WBO - similar to the LLW routing type, outgoing messages are distributed to the LAN/WAN if this Node's SS7 links are OOS and NOT distributed if this Nodes links are IS. Unlike the LLW routing type, incoming messages will NOT be distributed if the SSN or Node is in an overload condition. Unlike the LBI routing type, the Incoming messages for an SSN that is OOS will be distributed to the LAN/WAN. • LLS - with this option, incoming messages are handled locally if local SSN and SS7 links are IS. Incoming messages are distributed to nodes accessible through the LAN (with an IS SSN), if a local SSN is OOS and there are SSNs that are IS on nodes. Incoming messages that are received will fail if a local SSN is OOS, and there are no SSNs that are IS on nodes. Outgoing messages follow load sharing rules to all nodes in the cluster (LAN or WAN) if any SS7 links are OOS. An overload condition (either SSN or node overload) will not cause distribution of traffic to any other node. • LWS - with this option, incoming messages are handled locally if local SSN and SS7 links are IS. Incoming messages will be distributed to nodes accessible through the LAN (with an IS SSN), if a local SSN is OOS and there are SSNs that are IS on nodes. Incoming messages are distributed to nodes accessible through the WAN (with an IS SSN), if a local SSN is OOS, and SSNs accessible through the LAN are OOS. Any incoming messages will fail if a local SSN is OOS, and there are no SSNs that are IS on the cluster. Outgoing messages follow load sharing rules to all nodes in the cluster (LAN or WAN), if any SS7 links are OOS. An overload condition (either SSN or node overload) will not cause distribution of traffic to any other node.
5	The BLOCK SS7 LINK field identifies if SS7 linkswill be blocked when the application is out of servicefor the entire cluster. One character, Y or N, read only. • Y - SS7 links will be blocked if the application is out of service for the entire cluster. This should be used when GTT is performed on the cluster. In this case, the SSN is not identified until the message is already at the box. Therefore, it is necessary to block traffic in a different way. N - The SS7 link blocking functionality is not invoked.
6	The BLOCK LOCAL SS7 LINKS field identifies if all local SS7 links will be blocked when all local SSNs become OOS. One character, Y or N, read only. • Y - All local SS7 links will be blocked if all local SSNs are OOS. • N - Local SS7 links will not be blocked when all local SSNs are OOS.

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Table 7-86 CLUSTER PARAMETERS FORM field descriptions (continued)

Field	Description
7	The NAMING RULE FOR CLUSTER NAME field identifies if SS7 subsystem in this node will use either full or partial SS7 local point code to register as the SS7 cluster name. This field only impacts to the ANSI and CHN point code format. One character, P or F, read only • P - SS7 subsystem will only use right most eight bits of local point code to register as the SS7 cluster name. This value is default. • F - SS7 subsystem will use full 24 bits of local point code to register as the SS7 cluster name.
8	The CONNECTION DELAY TIMER field identifies if SS7 subsystem in this node will use this timer to delay the SS7 link connection to the SS7 network. This field is used to reduce the possibility of a single node experiencing severe overload condition if it comes into service while other noes are still initializing. Up to two digits, 0 to 60 seconds, read only.
9	The NUMBER OF NODES UP TO CONNECT field identifies if SS7 subsystem in this node will wait and delay the SS7 link connection until the number of other nodes up is greater or equal to the number in this field. This field is used to reduce the possibility of a single node experiencing severe overload condition if it comes into service while other noes are still initializing. Up to two digits, 0 to 15 nodes, read only.

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7.123 Form 3.6.2. NODE TO LAN ASSIGNMENT FORM

7.123.1 Overview

Use this form to associate each node with a LAN ID when a WAN is used to connect part of the cluster. This allows the S7SCH to give preference to LAN routing.

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7.123.2 Illustration

Figure 7-82 Form 3.6.2 NODE TO LAN ASSIGNMENT FORM

```
                                        Record 1/1

Screen 1 of 1

                          NODE TO LAN ASSIGNMENT FORM



*>  1. NETWORK ID                       ABCDE

    2. OFFICE ID                        444


     NODE ID   LAN ID   NODE ID   LAN ID   NODE ID   LAN ID   NODE ID   LAN ID

   ----------- ------ ----------- ------ ----------- ------ ----------- ------

    3. NODE 0   1     11. NODE 8   2     19. NODE 16  3     27. NODE 24  3

    4. NODE 1   1     12. NODE 9   2     20. NODE 17  3     28. NODE 25  4

    5. NODE 2   1     13. NODE 10  2     21. NODE 18  3     29. NODE 26  4

    6. NODE 3   1     14. NODE 11  2     22. NODE 19  3     30. NODE 27  4

    7. NODE 4   1     15. NODE 12  2     23. NODE 20  3     31. NODE 28  4

    8. NODE 5   1     16. NODE 13  2     24. NODE 21  3     32. NODE 29  4

    9. NODE 6   1     17. NODE 14  2     25. NODE 22  3     33. NODE 30  4

   10. NODE 7   1     18. NODE 15  2     26. NODE 23  3     34. NODE 31  4


Enter Update, Change, Next, Former, Edit, Validate, or Print:
```

7.123.3 Form Dependencies

This form will not take effect if the DISTRIBUTED SS7 field in form "Form 2.6: SS7 OFFICE PARAMETERS FORM" (5-24) is not set to 'C' or 'M'. This form does not allow INSERT and DELETE operations

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7.123.4 Description of fields for NODE TO LAN ASSIGNMENT FORM

The following table describes the fields for the NODE TO LAN ASSIGNMENT FORM

Table 7-87 NODE TO LAN ASSIGNMENT FORM field descriptions

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform.
3 –34	The NODE n (n = 0-15 for Solaris platform or 0-31 for Linux platform) LAN field contains the index to the LAN connecting to the NODE n in the cluster. Up to two digits. Range: 0-16 for Solaris, 0-32 for Linux.. **The value must be 0 (zero) if NODE n is unequipped.**

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7.124 Form 3.6.3: SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

7.124.1 Overview

Use this form to document the Host ID for up to 32 SS7 Nodes (is displayed only in Linux version of the menu).

7.124.2 Illustration

The following figure shows the Form 3.6.3 SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

Figure 7-83 Form 3.6.3 SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

```
Screen 1 of 4
                 SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

*>  1. NETWORK ID                      ABCDE
*   2. OFFICE ID                       444

   SS7 NODE ID                     HOST IDENTIFIER
   ------------ ------------------------------------------------
    3. NODE 0   7
    4. NODE 1   8
    5. NODE 2   ____________________________________________________
    6. NODE 3   ____________________________________________________
    7. NODE 4   ____________________________________________________
    8. NODE 5   ____________________________________________________
    9. NODE 6   ____________________________________________________
   10. NODE 7   ____________________________________________________

WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and MUXSCH
of the corresponding node is required for each form update to take
effect.
```


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```
Screen 2 of 4
                SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

   SS7 NODE ID                      HOST IDENTIFIER
   ------------ ------------------------------------------------
   11. NODE 8   ________________________________________________
   12. NODE 9   ________________________________________________
   13. NODE 10  ________________________________________________
   14. NODE 11  ________________________________________________
   15. NODE 12  ________________________________________________
   16. NODE 13  ________________________________________________
   17. NODE 14  ________________________________________________
   18. NODE 15  ________________________________________________

WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and MUXSCH
of the corresponding node is required for each form update to take
effect.
```

```
Screen 3 of 4
                SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

   SS7 NODE ID                      HOST IDENTIFIER
   ------------ ------------------------------------------------
   19. NODE 16  ________________________________________________
   20. NODE 17  ________________________________________________
   21. NODE 18  ________________________________________________
   22. NODE 19  ________________________________________________
   23. NODE 20  ________________________________________________
   24. NODE 21  ________________________________________________
   25. NODE 22  ________________________________________________
   26. NODE 23  ________________________________________________

WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and
MUXSCH of the corresponding node is required for each form update
to take effect.
```

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```
Screen 4 of 4
                 SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

   SS7 NODE ID                      HOST IDENTIFIER
   ------------ ------------------------------------------------
   27. NODE 24  ________________________________________________
   28. NODE 25  ________________________________________________
   29. NODE 26  ________________________________________________
   30. NODE 27  ________________________________________________
   31. NODE 28  ________________________________________________
   32. NODE 29  ________________________________________________
   33. NODE 30  ________________________________________________
   34. NODE 31  ________________________________________________

WARNING: Level 1 initialization of S7SCH[0-3], STSCH[0-3], and
MUXSCH of the corresponding node is required for each form update
to take effect.
```

7.124.3 Form dependencies

Level 1 initialization of S7SCH/S7SCH[0-4], STSCH/STSCH[0-4] and MUXSCH of the corresponding node is required for the form update to take effect on that node. This form does not allow INSERT and DELETE operations.

7.124.4 Description of fields

The following table describes the fields for SS7 to MCAS Node ID Mapping FORM.

Table 7-88 Form 3.6.3: SS7 NODE ID TO HOST IDENTIFIER MAPPING FORM

Field	Description
1	The NETWORK ID field contains the network ID assigned by the eSM. This field is not significant for the platform. Up to five characters, read only.
2	The OFFICE ID field contains the office ID assigned by the eSM. This field is not significant for the platform. Up to three digits, read only.
3 – 34	The Host Identifier field contains the MCAS NODE ID or uname. These fields must contain a mapping from the used Node IDs to the Host ID. or mCAS uname corresponding to SS7 nodes 0 and 1. MCAS NODE ID can be determined by using the **OP:STATUS,MACHINE=ALL** Input Message. The uname can be obtained by execution of **uname -n**. The mCAS uname can be determined by running **uname -n** on the mCAS SS7 nodes.

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7.125 Form 3.7.1. SCCP MANAGEMENT FORM (ITU/CHN only)

7.125.1 Overview

Use this form to enable or disable the SCCP management capability. The SCCP Management Form applies to ITU/CHN only.

7.125.2 Illustration

Figure 7-84 Form 3.7.1 SCCP MANAGEMENT FORM (ITU/CHN only)

```
Screen 1 of 1    SCCP MANAGEMENT FORM

    2. SCCP SUBSYSTEM MANAGEMENT       N




Enter Review, Validate, or Print:
```

7.125.3 Description of fields for SCCP MANAGEMENT FORM (ITU/CHN only)

The following table describes the fields for the SCCP MANAGEMENT FORM (ITU/CHN only):

Table 7-89 SCCP MANAGEMENT FORM (ITU/CHN only) field descriptions

Field	Description
2	The SCCP SUBSYSTEM MANAGEMENT field contains a flag indicating whether the SCCP subsystem management function is on or off. If the field is turned on, the platform will keep track of the status of the remote SSNs in a prohibit table and drop any outgoing messages if the concerning remote SSN is out of service. One character, Y or N.

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7.126 Form 3.7.1 GTT CAPABILITIES FORM (ANSI only)

7.126.1 Overview

Use this form to enable or disable the SCCP management capability for ANSI. This form includes SCCP SUBSYSTEM MANAGEMENT field.

7.126.2 Illustration

Figure 7-85 Form 3.7.1 GTT CAPABILITIES FORM

```
Screen 1 of 1  GTT CAPABILITIES FORM

    2. SCCP SUBSYSTEM MANAGEMENT       N




Enter Review, Validate, or Print:
```

7.126.3 Description of fields for GTT CAPABILITIES FORM

The following table describes the fields for the GTT CAPABILITIES FORM:

Table 7-90 GTT CAPABILITIES FORM field descriptions

Field	Description
2	The SCCP SUBSYSTEM MANAGEMENT field contains a flag indicating whether the SCCP subsystem management function is on or off. If the field is turned on, the plaform will keep track of the status of the remote SSNs in a prohibit table and drop any outgoing messages if the concerning remote SSN is out of service. One character, Y or N. This field must be set to "Y" in order to provision any other RCV 3.7.* GTT forms.

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7.127 Form 3.7.2 GTT GLOBAL TITLE INDICATOR FORM

7.127.1 Overview

Use this form to provision GTT information (Translation Type, Nature of Address Indicator and Numbering Plan) and associated Translation Group ID.

7.127.2 Illustration

Figure 7-86 Form 3.7.2 GTT GLOBAL TITLE INDICATOR FORM

```
Screen 1 of 1   GTT GLOBAL TITLE INDICATOR FORM



* 1) GLOBAL TITLE INDICATOR              _
* 2) TRANSLATION TYPE                    ___
* 3) NATURE OF ADDRESS INDICATOR         ___
* 4) NUMBERING PLAN                      __
  5) TRANSLATION GROUP ID                ___




GLOBAL TITLE INDICATOR. valid value: 1-4
```

7.127.3 Form Dependencies

Form can be provisioned only when SCCP SUBSYSTEM MANAGEMENT flag in form 3.7.1 is set to 'Y'.

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7.127.4 Description of fields for GTT GLOBAL TITLE INDICATOR FORM

The following table describes the fields for the GTT GLOBAL TITLE INDICATOR FORM:

Table 7-91 GTT GLOBAL TITLE INDICATOR FORM field descriptions

Field	Description
1	The GLOBAL TITLE INDICATOR is a single digit field, with range: 1 to 4. This field value will determine which of the other three key fields on this form will be required to be populated to resolve this TGID value. See ITU-TQ.713 for further details. 1 - Nature of Address Indicator only 2 - Translation Type only 3 - Translation Type AND Numbering Plan 4 - Translation Type, Numbering Plan, and Nature of Address Indicator **Note:** Only field value 2 for GLOBAL TITLE INDICATOR would be supported for ANSI
2	The TRANSLATION TYPE field indicates which Translation Type is expected in the SCCP portion of the message. Up to 3 digits, range: 0 to 255.
3	The Nature of Address indicator field indicates the Nature of Address value expected in the SCCP portion of the message. Up to 3 digits, range: 0~126
4	The NUMBERING PLAN field indicates the Numbering Plan value expected in the SCCP portion of the message. Up to 2 digits, range: 0 to 15.
5	The TRANSLATION GROUP ID field defines the index to the set of translations used to direct the message to the appropriate global title translation resolution. Up to 3 digits, range: 0 to 255.

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7.128 Form 3.7.3 GTT DESTINATIONS FORM (ANSI, CHN, ITU)

7.128.1 Overview

Use this form to provide GTT destinations (point codes and SSN's) and index to the backup destinations.

7.128.2 Form Dependencies

Form can be provisioned only when SCCP SUBSYSTEM MANAGEMENT flag in form 3.7.1 is set to 'Y'.

7.128.3 Illustration

Figure 7-87 Form 3.7.3 GTT DESTINATIONS FORM (ITU version)

```
Screen 1 of 1   GTT DESTINATIONS FORM



* 1) DESTINATION INDEX                ___
  2) POINT CODE
  3) SSN                              ___
  3) BACKUP INDEX                     ___
  4) MODE                             ____
```

7.128.4 Description of fields for GTT DESTINATIONS FORM (ITU version)

Table 7-92 GTT DESTINATIONS FORM (ITU version) field descriptions

Field	Description
1	The DESTINATION INDEX field contains the index value for this destination. Valid range: 0 to 255
2	The POINT CODE field contains the point code of this destination index. Valid range: 1-16383
3	The SSN field indicates the subsystem number for this destination index. Valid range: 0 to 255
4	The BACKUP INDEX field contains index to the backup destination in the same form. Valid range: 0 to 255

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Table 7-92 GTT DESTINATIONS FORM (ITU version) field descriptions (continued)

Field	Description
5	The MODE field specifies the logic algorithm GTT uses for OUTGOING messages that resolve to this destination as determined by a GTT TRANSLATION GROUP FORM entry PRIMARY DESTINATION INDEX field. PS: Primary Secondary – The GTT TRANSLATION GROUP FORM's PRIMARY DESTINATION INDEX is always used unless the DPC or associated SSN is not available. If not available, and if a BACKUP INDEX is defined, then the BACKUP INDEX (also referred to as a "Secondary" destination index) is attempted. LS: Load Sharing – The GTT TRANSLATION GROUP FORM's PRIMARY DESTINATION INDEX and BACKUP INDEX destination shares the OUTGOING messages. If a BACKUP INDEX destination is not defined, then the PRIMARY destination is sent all the messages. If either destination becomes unavailable, then all the messages are sent to the remaining available destination.

7.128.5 Illustration

Figure 7-88 Form 3.7.3 GTT DESTINATIONS FORM (ANSI version)

```
Screen 1 of 1   GTT DESTINATIONS FORM


* 1) DESTINATION INDEX                ___
  DESTINATION POINT CODE
  ----------------------
    2) NETWORK ID                     ___
    3) CLUSTER ID                     ___
    4) MEMBER ID                      ___
  5) SSN                              ___
  6) BACKUP INDEX                     ___
  7) MODE                             _____
```

7.128.6 Description of fields for GTT DESTINATIONS FORM (ANSI version)

The following table describes the fields for the ANSI version of GTT DESTINATIONS FORM:

Table 7-93 GTT DESTINATIONS FORM (ANSI version) field descriptions

Field	Description
1	The DESTINATION INDEX field contains the index value for this destination. Valid range: 0 to 255.

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Table 7-93 GTT DESTINATIONS FORM (ANSI version) field descriptions (continued)

Field	Description
2 – 4	The POINT CODE field contains the point code of the destination with the following components: £ NETWORK ID-specifies the network ID for the point code of the destination. Valid range: 0 to 255. £ CLUSTER ID-specifies the cluster ID for the point code of the destination. Valid range: 0 to 255. £ MEMBER ID-specifies the member ID for the point code of the destination. Up to three digits, range: 0 to 255. **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID fields must not all be set to zero (that is, 0-0-0).
5	The SSN field indicates the subsystem number for the destination. Valid range: 0 to 255.
6	The BACKUP INDEX field contains index to the backup destination in the same form. Valid range: 0 to 255.
7	The MODE field specifies the logic algorithm GTT uses for OUTGOING messages that resolve to this destination as determined by a GTT TRANSLATION GROUP FORM entry PRIMARY DESTINATION INDEX field. PS: Primary Secondary – The GTT TRANSLATION GROUP FORM's PRIMARY DESTINATION INDEX is always used unless the DPC or associated SSN is not available. If not available, and if a BACKUP INDEX is defined, then the BACKUP INDEX (also referred to as a "Secondary" destination index) is attempted. The PS mode is supported for ANSI LS: Load Sharing – The GTT TRANSLATION GROUP FORM's PRIMARY DESTINATION INDEX and BACKUP INDEX destination shares the OUTGOING messages. If a BACKUP INDEX destination is not defined, then the PRIMARY destination is sent all the messages. If either destination becomes unavailable, then all the messages are sent to the remaining available destination.

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7.128.7 Illustration

Figure 7-89 Form 3.7.3 GTT DESTINATIONS FORM (CHN version)

```
Screen 1 of 1    GTT DESTINATIONS FORM


* 1) DESTINATION INDEX                    ___
  DESTINATION POINT CODE
  ----------------------
    2) MAIN AREA ID                         ___
    3) SUB-AREA ID                          ___
    4) POINT ID                            ___
  5) SSN                                    ___
  6) BACKUP INDEX                           ___
  7) MODE                                   _____
```

7.128.8 Description of fields for GTT DESTINATIONS FORM (CHN version)

Table 7-94 GTT DESTINATIONS FORM (CHN version) field descriptions

Field	Description
1	The DESTINATION INDEX field contains the index value for this destination. Valid range: 0 to 255.
2-4	The POINT CODE field contains the point code of the destination with the following components: • MAIN AREA ID-specifies the main signaling area ID for the point code of the destination. Valid range: 0 to 255. • SUB-AREA ID-specifies the sub-signaling area ID for the point code of the destination. Valid range: 0 to 255. • POINT ID-specifies the signaling point ID for the point code of the destination. Valid range: 0 to 255. **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID fields must not all be set to zero (that is, 0-0-0).
5	The SSN field indicates the subsystem number for the destination. Valid range: 0 to 255.
6	The BACKUP INDEX field contains index to the backup destination in the same form. Valid range: 0 to 255.

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Table 7-94 GTT DESTINATIONS FORM (CHN version) field descriptions (continued)

Field	Description
7	The MODE field specifies the logic algorithm GTT uses for OUTGOING messages that resolve to this destination as determined by a GTT TRANSLATION GROUP FORM entry PRIMARY DESTINATION INDEX field. PS: Primary Secondary – The GTT TRANSLATION GROUP FORM's PRIMARY DESTINATION INDEX is always used unless the DPC or associated SSN is not available. If not available, and if a BACKUP INDEX is defined, then the BACKUP INDEX (also referred to as a "Secondary" destination index) is attempted. LS: Load Sharing – The GTT TRANSLATION GROUP FORM's PRIMARY DESTINATION INDEX and BACKUP INDEX destination shares the OUTGOING messages. If a BACKUP INDEX destination is not defined, then the PRIMARY destination is sent all the messages. If either destination becomes unavailable, then all the messages are sent to the remaining available destination.

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7.129 Form 3.7.4 GTT TRANSLATION GROUP MASK FORM

7.129.1 Overview

Use this form to define the translation group mask, which determines how the digits of global title in SCCP message are to be matched and determine if External STP will be used.

7.129.2 Illustration

Figure 7-90 Form 3.7.4 GTT TRANSLATION GROUP MASK FORM

```
Screen 1 of 1   GTT TRANSLATION GROUP MASK FORM



* 1) TRANSLATION GROUP ID                    ___
  2) FIXED ADDRESS DIGITS                    _
  3) PRIMARY ADDRESS DIGITS                  __
  4) SECONDARY ADDRESS DIGITS                _
  5) MAXIMUM TRANSLATIONS                    ______
  6) GTT STARTING DIGIT                      __
  7) MATCH ALGORITHM                         ________
  8) USE EXTERNAL STP                        _
  9) EXTERNAL STP DEST INDEX                 ___









TRANSLATION GROUP ID. valid value: 0-255.
```

7.129.3 Form Dependencies

Form dependencies include

- Form can be provisioned only when SCCP SUBSYSTEM MANAGEMENT flag in form 3.7.1 is set to ‚Y.™
- TRANSLATION GROUP ID in this form must be defined in form 3.7.2 GTT GLOBAL TITLE INDICATOR FORM first.

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7.129.4 Description of fields for GTT TRANSLATION GROUP MASK FORM

The following table describes the fields for the GTT TRANSLATION GROUP MASK FORM:

Table 7-95 GTT TRANSLATION GROUP MASK FORM field descriptions

Field	Description
1	The TRANSLATION GROUP ID field defines the index for the GTT Global Title Indicator form to reference the following parameters which will determine the logic used in the resolution of the Global Title Address (GTA) digits. Up to 3 digits, range: 0 to 255.
2	The FIXED ADDRESS DIGITS field indicates the number of digits in the SS7 message's GTA digit string that will be interpreted in the GTT logic as "fixed". One digit, range: 0 to 6.
3	The PRIMARY ADDRESS DIGITS field indicates the number of digits in the SS7 message's GTA digit string that will be interpreted in the GTT logic as "primary". Up to 2 digits, range: 1 to 10 **Note:** The sum of PRIMARY ADDRESS DIGITS + SECONDARY ADDRESS DIGITS may not exceed 10.
4	The SECONDARY ADDRESS DIGITS field indicates the number of digits in the SS7 message's GTA digit string that will be interpreted in the GTT logic as "secondary". One digit, range: 0 to 9. **Note:** The sum of PRIMARY ADDRESS DIGITS + SECONDARY ADDRESS DIGITS may not exceed 10.
5	The MAXIMUM TRANSLATIONS field indicates the maximum number of entries the GTT TRANSLATION GROUP form will allow to be associated with this TGID and this number of PRIMARY ADDRESS DIGITS + SECONDARY ADDRESS DIGITS. This field must be specified AND is only used if FIXED ADDRESS DIGITS is equal to 0. Up to 5 digits, range: 0 to 131071.
6	The GTT STARTING DIGIT field indicates which digit in the SS7 message's GTA that will be interpreted in the GTT logic as the starting digit. Up to 2 digits, range: 1 to 15.

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Table 7-95 GTT TRANSLATION GROUP MASK FORM field descriptions (continued)

Field	Description
7	The MATCH ALGORITHM field specifies the logic algorithm GTT will use when resolving the SS7 message's GTA digit string. Valid values are: • FULL: a full match of the digits is attempted first (fixed + primary + secondary), then a partial match (fixed + primary). • PARTIAL: a partial match of the digits is attempted first (fixed + primary), then a full match (fixed + primary + secondary). • VARIABLE: a variable number of digits is attempted to be matched, starting with a full match (fixed + primary + secondary) and incrementally decreasing the number until the number of digits being attempted equals a partial match attempt (fixed + primary).
8	The USE EXTERNAL STP field determines if outgoing SS7 route by GT messages that resolved to this TGID will skip S7SCH GTT and instead be sent to the PC defined in the EXTERNAL STP DEST INDEX for GTT processing. One character, Y or N.
9	The EXTERNAL STP DEST INDEX field defines the destination index to use as the external STP for outgoing SS7 route by GT messages that resolve to this TGID only IF the USE_EXTERNAL_STP field is set to "Y". Up to 3 digits, range: 0 to 255.

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7.130 Form 3.7.5 GTT FIXED DIGITS STRING FORM

7.130.1 Overview

Use this form to define maximum number of translations that a fixed digit string can have. This form is optionally provisioned and is used when FIXED DIGITS specified in form 3.7.4 GTT TRANSLATION GROUP MASK form is non-zero.

7.130.2 Illustration

Figure 7-91 Form 3.7.5 GTT FIXED DIGITS STRING FORM

```
Screen 1 of 1    GTT FIXED DIGITS STRING FORM



* 1) TRANSLATION GROUP ID              ___
* 2) FIXED DIGITS STRING               ______
  3) MAXIMUM TRANSLATIONS              ______




TRANSLATION GROUP ID. valid value: 0-255.
```

7.130.3 Form Dependencies

Form dependencies include

- Form can be provisioned only when SCCP SUBSYSTEM MANAGEMENT flag in form 3.7.1 is set to ‚Y.™
- TRANSLATION GROUP ID and length of FIXED DIGITS STRING in this form must be defined in form 3.7.4 GTT TRANSLATION GROUP MASK FORM first.

7.130.4 Description of fields for GTT FIXED DIGITS STRING FORM

The following table describes the fields for the GTT FIXED DIGITS STRING FORM:

Table 7-96 GTT FIXED DIGITS STRING FORM field descriptions

Field	Description
1	The TRANSLATION GROUP ID field defines the index to set of translations used to direct the message to the appropriate global title translation function. Up to 3 digits, range: 0 to 255.

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Table 7-96 GTT FIXED DIGITS STRING FORM field descriptions (continued)

Field	Description
2	The FIXED DIGITS STRING field contains a string that is used by the GTT logic to match the fixed digits portion of an SS7 message's GTA digits portion. The length of this string MUST match the GTT TRANSLATION GROUP MASK form's TGID entries FIXED ADDRESS DIGITS parameter value. Padding with "F" can be used to achieve the necessary length if needed. Up to 6 digits hex value.
3	The MAXIMUM TRANSLATIONS field will restrict the maximum number of GTT TRANSLATION GROUP form entries that will be allowed to be entered that will be associated with the above fixed digits string value. Up to 5 digits, range: 1 to 131071.

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7.131 Form 3.7.6: GTT TRANSLATION GROUP FORM

7.131.1 Overview

Use the Form 3.7.6 GTT TRANSLATION GROUP form to define the index to the GTT Destinations Form or GTT GROUP DESTINATION FORM for a given Translation Group ID, Fixed Digits String and Primary and Secondary String, and determine if final translation is allowed.

7.131.2 Illustration

Figure 7-92 Form 3.7.6: GTT TRANSLATION GROUP FORM

```
Screen 1 of 1      GTT TRANSLATION GROUP FORM

* 1) TRANSLATION GROUP ID                ___
* 2) FIXED DIGITS STRING                 ______
* 3) PRIMARY & SECONDARY STRING          __________
  4) OUTGOING FINAL TRANSLATION          _
  5) DESTINATION/GROUP INDEX                   ___


TRANSLATION GROUP ID. valid value: 0-255.
```

7.131.3 Form Dependencies

Form dependencies include

- Form can be provisioned only when SCCP SUBSYSTEM MANAGEMENT flag in Form 3.7.1 is set to Y™.
- TRANSLATION GROUP ID, length of FIXED DIGITS STRING and length of PRIMARY & SECONDARY STRING in this form must be defined in Form 3.7.4 GTT TRANSLATION GROUP MASK FORM first.
- TRANSLATION GROUP ID and FIXED DIGITS STRING must be defined on Form 3.7.5 GTT FIXED DIGITS STRING FORM if FIXED DIGITS STRING does not equal to 000000.
  - Maximum number of entries allowed on this form is deter- mined by the flat file */cs/sn/s7sch/__GTT_MAX_CFG__*.
  - If the file is not present, or if it contains a value outside the valid range of 1,000 to 131,072, the file is automatically created with a default value of 1,000. If more than 1,000 entries are required, see the file contents for information on how it can be changed.
- Define the DESTINATON/GROUP INDEX in Form 3.7.3 GTT DESTINATIONS FORM or Form 3.7.7 GTT TRANSLATION GROUP FORM first.
- Ensure that the “OUTGOING FINAL TRANSLATION” field is consistent between the Form 3.7.6 GTT TRANSLATION GROUP FORM and the Form 3.7.6 GTT TRANSLATION GROUP FORM if the GROUP INDEX is configured as DESTINATION INDEX.

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7.131.4 Description of fields

Table 7-97 Form 3.7.6: GTT TRANSLATION GROUP FORM field description

Field	Description
1	The TRANSLATION GROUP ID field defines the index to the set of GTT logic parameter to be used in the GTT resolution of a route by GT SS7 message. Valid range: 0 to 255 (up to 3 digits)
2	The FIXED DIGITS STRING field contains a hex string that is used in the GTT logic for "fixed" digit string comparisons. There must be a corresponding TGID/FIXED DIGITS STRING entry in the GTT FIXED DIGITS STRING form in order for this value to be accepted. The length of this string MUST match the TGID entries of GTT TRANSLATION GROUP MASK form (FIXED ADDRESS DIGITS parameter value). If needed, the Padding with "F" is used to achieve the necessary length. Up to 6 digits hex value. **Note:** The string must be "000000" if the FIXED ADDRESS DIGITS parameter is set to 0 in the GTT TRANSLATION GROUP MASK form entry for this TGID.
3	The PRIMARY& SECONDARY STRING field contains the hex string that is used in the GTT logic for "primary" + "secondary" digit string comparisons. The length of this string MUST match the TGID entries of GTT TRANSLATION GROUP MASK form (TGID entries PRIMARY ADDRESS DIGITS + SECONDARY ADDRESS DIGITS parameter values). If needed the Padding with "F" is used to achieve the necessary length. Up to 10 digits hex value.
4	The OUTGOING FINAL TRANSLATION field determines if an outgoing message being processed by GTT logic has its routing indicator changed to "route on SSN". Valid values: Y, N • Y - final translation is requested to change to "route on SSN" • N-final translation is NOT requested to leave as "route by GT"
5	The DESTINATION/GROUP INDEX field contains the index to the destination in the GTT DESTINATIONS FORM if the index value is 0 to 255. If the index value is between 300 and 307, the index refers to the DESTINATION GROUP INDEX defined in Form 3.7.7 GROUP DESTINATION FORM. Valid range: 0 to 255 and 300 to 307 (up to 3 digits)

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7.132 Form 3.7.7: GTT DESTINATION GROUP FORM

7.132.1 Overview

Use the Form 3.7.7: GTT DESTINATION GROUP form to define the GTT Destination Group which supports GTT load sharing for up to 16 destinations.

Note: All the destinations defined in this form should be already configured in Form 3.7.3 GTT DESTINATIONS FORM.

7.132.2 Illustration

Figure 7-93 Form 3.7.7: GTT DESTINATION GROUP FORM

```
Screen 1 of 1
                        GTT DESTINATION GROUP FORM

*>  1. GROUP INDEX                          ___
    2. OUTGOING FINAL TRANSLATION           _
    3. DESTINATION INDEX 1      ___           4. DESTINATION INDEX 2     ___
    5. DESTINATION INDEX 3      ___           6. DESTINATION INDEX 4     ___
    7. DESTINATION INDEX 5      ___           8. DESTINATION INDEX 6     ___
    9. DESTINATION INDEX 7      ___           10. DESTINATION INDEX 8    ___
    11. DESTINATION INDEX 9     ___           12. DESTINATION INDEX 10   ___
    13. DESTINATION INDEX 11    ___           14. DESTINATION INDEX 12   ___
    15. DESTINATION INDEX 13    ___           16. DESTINATION INDEX 14   ___
    17. DESTINATION INDEX 15    ___           18. DESTINATION INDEX 16   ___


GROUP INDEX. Valid value: 300-307.
```

7.132.3 Form dependencies

Form dependencies include the following:

- DESTINATION INDEX 1 to DESTIONATION INDEX 16 in this form must be defined in form 3.7.3 GTT DESTIONATIONS FORM first. But the BACKUP INDEX and MODE fields are ignored (if populated).

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7.132.4 Description of fields

Table 7-98 Form 3.7.7: GTT DESTINATION GROUP FORM field description

Field	Description
1	The GROUP INDEX field defines the index to the set of GTT destinations which loads share the GTT traffic destined for this group. Valid range: 300 to 307 (up to 3 digits)
2	The OUTGOING FINAL TRANSLATION field determines if an outgoing message being processed by GTT logic has its routing indicator changed to "route on SSN". Valid values: Y, N • Y - final translation is requested to change to "route on SSN" • N-final translation is NOT requested to leave as "route by GT"
3	The DESTINATION INDEX 1 to DESTINATION INDEX 16 fields contains the index to the destination in the GTT DESTINATION FORM. Valid range: 0 to 255 (up to 3 digits)

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Operations services interfaces

7.133 Overview

7.133.1 Purpose

This section explains how to configure several external operations systems interfaces, including advanced services interface, service management interface, NPM interface, and SNMP interfaces.

7.133.2 Contents

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7.134 Submenu 6: OPERATIONS SERVICES INTERFACES SUBMENU

7.134.1 Overview

OPERATIONS SERVICES INTERFACES SUBMENU is the starting point for performing the following tasks:

- Setting up Service Management Interface (SMI)
- Configuring SNMP

7.134.2 Illustration

Figure 7-94 Submenu 6: OPERATIONS SERVICES INTERFACES SUBMENU

```
Screen 1 of 1
                  OPERATIONS SERVICES INTERFACES SUBMENU

Selection    Category
[  1]        NOT USED
[  2]        SERVICE MANAGEMENT INTERFACE SUBMENU
[  3]        NOT USED
[  4]        SNMP CONFIGURATION SUBMENU
```

7.134.3 Available forms

The OPERATIONS SERVICES INTERFACES SUBMENU contains the following submenus:

- 7.135 “Submenu 6.2: SERVICE MANAGEMENT INTERFACE SUBMENU” (p. 1114)
- 7.136 “Submenu 6.4: SNMP CONFIGURATION SUBMENU” (p. 1115)

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7.135 Submenu 6.2: SERVICE MANAGEMENT INTERFACE SUBMENU

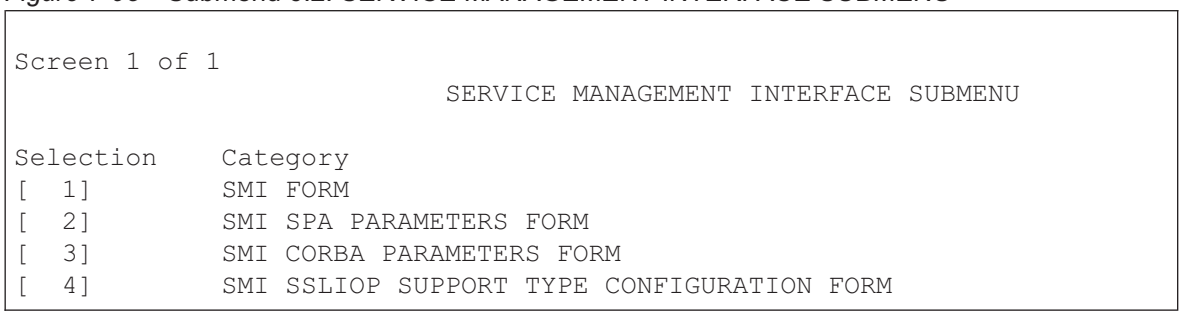
7.135.1 Overview

SERVICE MANAGEMENT INTERFACE SUBMENU is the starting point for performing the following tasks:

- Configuring Service Management Interface (SMI)
- Configuring SMI for services that handle provisioning requests (self-commit applications).
- Configuring Provisioning Function (PF)

7.135.2 Illustration

Figure 7-95 Submenu 6.2: SERVICE MANAGEMENT INTERFACE SUBMENU



7.135.3 Available forms

The SERVICE MANAGEMENT INTERFACE SUBMENU contains the following forms

- 7.137 “Form 6.2.1: SMI FORM” (p. 1117)
- 7.138 “Form 6.2.2: SMI SPA PARAMETERS FORM” (p. 1118)
- 7.139 “Form 6.2.3: SMI CORBA PARAMETERS FORM” (p. 1120)
- 7.140 “Form 6.2.4 SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM” (p. 1121)

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7.136 Submenu 6.4: SNMP CONFIGURATION SUBMENU

7.136.1 Overview

SNMP CONFIGURATION SUBMENU is the starting point for performing the following tasks:

- add a new SNMP manager configuration station.
- provision a new SNMP view sub tree for view-based access control.
- add a new SNMP Group.
- add a new SNMP User.
- view the alarm properties.
- add a new TRAPMGR agent.
- view or modify the listening port for TRAPGW.
- add a new TRAPGW module ID and name.
- view or modify the alarm severity mapping from ASR to platform.
- view or modify TRAPGW ASR application alarm root mib and application name
- view or modify SNMP proxy mib configuration
- view or modify SNMP AGENTX configuration

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7.136.2 Illustration

Figure 7-96 Submenu 6.4: SNMP CONFIGURATION SUBMENU

```
Screen 1 of 1
                                SNMP CONFIGURATION SUBMENU

Selection    Category
[  1]        SNMP MANAGER CONFIGURATION FORM
[  2]        SNMP VIEW TREE CONFIGURATION FORM
[  3]        SNMP GROUP CONFIGURATION FORM
[  4]        SNMP USER CONFIGURATION FORM
[  5]        X733 ALARM PROPERTIES FORM
[  6]        TRAPMGR AGENT CONFIGURATION FORM
[  7]        TRAPGW LISTENING PORT FORM
[  8]        TRAPGW ASR MODULE ID CONFIGURATION FORM
[  9]        TRAPGW ASR ALARM SEVERITY MAPPING FORM
[ 10]        TRAPGW ASR APPLICATIONS ALARM MIB FORM
[ 11]        SNMP PROXY MIB CONFIGURATION FORM
[ 12]        SNMP AGENTX CONFIGURATION FORM


Enter view#, view name, ! <=quit>, ? <=help>, < <=previous>,
n <=next screen>:
->_____________________________________________________________
```

7.136.3 Available forms

The SNMP CONFIGURATION SUBMENU contains the following forms:

- 7.141 “Form 6.4.1 SNMP MANAGER CONFIGURATION FORM” (p. 1123)
- 7.142 “Form 6.4.2 SNMP TREE CONFIGURATION FORM” (p. 1124)
- 7.143 “Form 6.4.3 SNMP GROUP CONFIGURATION FORM” (p. 1125)
- 7.144 “Form 6.4.4 SNMP USER CONFIGURATION FORM” (p. 1127)
- 7.145 “Form 6.4.5 X733 ALARM PROPERTIES FORM” (p. 1129)
- 7.146 “Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM” (p. 1130)
- 7.147 “Form 6.4.7: TRAPGW LISTENING PORT FORM” (p. 1131)
- 7.148 “Form 6.4.8 TRAPGW MODULE ID CONFIGURATION FORM” (p. 1132)
- 7.149 “Form 6.4.9 TRAPGW ALARM SEVERITY MAPPING FORM” (p. 1133)
- 7.150 “Form 6.4.10 TRAPGW ASR APPLICATIONS ALARM MIB FORM” (p. 1134)
- 7.151 “Form 6.4.11 SNMP PROXY MIB CONFIGURATION FORM” (p. 1135)
- 7.152 “Form 6.4.12: SNMP AGENTX CONFIGURATION FORM” (p. 1137)

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7.137 Form 6.2.1: SMI FORM

7.137.1 Overview

Use Form 6.2.1 SMI form to configure SMI and provides the additional information required to support SMI-specific transactions and logical connections.

7.137.2 Illustration

Figure 7-97 Form 6.2.1: SMI FORM

```
Screen 1 of 1
                                        SMI FORM
* 1) LOGICAL NAME
  2) LOCAL PORT
  3) USER NAME
  4) PASSWORD
  5) PROVIDER URL
                    ____________________________________
  6) HTTP STRING
                  GET /SessionManager.ref HTTP/1.0
```

7.137.3 Form Dependencies

The composite key Logical_Name/Protocol must pre-exist in the Form 10.1.1.TCP/IP Services Form, where Protocol is SMI.

7.137.4 Description of fields

Table 7-99 Form 6.2.1: SMI FORM field description

Field	Description
1	Logical name of the Group member.
2	The local port number for which SMI connections are allowed.
3	The user name, if the connection requires a name and password.
4	The password if the connection requires a name/password.
5	PROVIDER URL is application server provider URL.
6	HTTP STRING is used during initial connection establishment with the enhanced Service Manager (eSM).

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7.138 Form 6.2.2: SMI SPA PARAMETERS FORM

7.138.1 Overview

Use the Form 6.2.2 SMI SPA PARAMETERS form to configure SMI for services that handle provisioning requests (self-commit applications).

7.138.2 Illustration

Figure 7-98 Form 6.2.2: SMI SPA PARAMETERS FORM

```
Screen 1 of 1
                            SMI SPA PARAMETERS FORM

* 1) SERVICE_NAME      _____________________________
  2) SELF_COMMIT       _
  3) TIME_OUT          ___
  4) PROV_RETRIES      ___
  5) MONITOR_CORC      _
```

7.138.3 Description of fields

Table 7-100 Form 6.2.2: SMI SPA PARAMETERS FORM field description

Field	Description
SERVICE_ NAME	SERVICE_NAME is the name of the service.
SELF_COMMIT	SELF_COMMIT signals the intention to submit a provisioning request to the service. Default: yes (y).
TIME_OUT	TIME_OUT defines time (in seconds) that SMI waits for a response from the service after submitting a provisioning request. Required only if the Self Commit field is set to y. Default: 1

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Table 7-100 Form 6.2.2: SMI SPA PARAMETERS FORM field description (continued)

Field	Description
PROV_ RETRIES	PROV_RETRIES is the number of provision failures for self-commit SPAs before the MCAS sends a "switchover request" to eSM. "Switchover requests" request the eSM to send subsequent provisioning to the mate. **For example** If the MCAS cannot communicate with the SPA to whom a provisioning request is directed (perhaps the SPA is not currently running), and results a failure. If the PROV_RETRIES field value is N, SMI sends a switchover error every Nth time it gets a failure when communicating with the SPA. Otherwise, it sends a "normal" failure back to eSM (that is, it does not request a switchover).
MONITOR_ CORC	MONITOR_CORC indicates if the service needs the platform to monitor CORC data changes. If the value is ‚Y™, platform fetches the changes and send them to eSM. If the value is ‚N™, platform does not monitor and fetch CORC changes. It is the service™s responsibility to monitor changes.

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7.139 Form 6.2.3: SMI CORBA PARAMETERS FORM

7.139.1 Overview

Use this form to configure the SMI CORBA interface to listen for requests on specific endpoints. If this form is not populated, the default Primary IP Address of the MCAS host and the default Primary Port of 26435 is used. After updating this form, ensure ro reinitialize the SMI process.

7.139.2 Illustration

Figure 7-99 Form 6.2.3: SMI CORBA PARAMETERS FORM

```
Screen 1 of 1
                          SMI CORBA PARAMETERS FORM

1) PRIMARY CORBA HOST IP
                 ____________________________________________________
2) SECONDARY CORBA HOST IP
                 ____________________________________________________
3) CORBA PORT _____
```

7.139.3 Description of fields

Table 7-101 Form 6.2.3: SMI CORBA PARAMETERS FORM field description

Field	Description
PRIMARY CORBA HOST IP	PRIMARY CORBA HOST IP is the IP address of the primary CORBA interface. The field is a primary IP address on which the SMI CORBA servant is listening for requests. Valid formats: IPv4, IPv6
SECONDARY CORBA HOST IP	SECONDARY CORBA HOST IP is the IP address of the secondary CORBA interface, nnn.nnn.nnn.nnn. If specified, the CORBA servant listens on both the primary and secondary interfaces. Valid formats: IPv4, IPv6
CORBA PORT	CORBA PORT is the port number on which the SMI CORBA servant is listening (for both the primary and secondary, if specified).

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7.140 Form 6.2.4 SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM

7.140.1 Overview

Use this form to configure the SSLIOP SUPPORT TYPE.

7.140.2 Illustration

Figure 7-100 Form 6.2.4: SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM

```
Screen 1 of 1
       SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM


*1) SSLIOP SUPPORT OPTION
      ALL_________________
```

7.140.3 Description of fields

Table 7-102 SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM field description

Field	Description
SSLIOP SUPPORT OPTION	SMI secured message support type to be configured. This parameter tells SMI what secured type of message it would receive and send back. Only **NONE**, **LOGIN_ONLY**, **ALL** are allowed for this form Required default value is **NONE**

The various SSLIOP SUPPORT OPTION for all the configuration parameters are listed here:

SSLIOP SUPPORT OPTION	NONE	• Only non-encrypted messages from eSM are accepted. All the messages come from eSM are not required and should not be encrypted on secured session. • All the push messages send back to eSM are not encrypted, based on IIOP non-secured session
	LOGIN_ONLY	• Encrypted login operation based on SSLIOP is required, non-encrypted login are rejected. The other operation either on IIOP or SSLIOP are accepted • All the push messages send back to eSM are not encrypted, based on IIOP non-secured session

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	ALL	• All operations are required to be encrypted, based on SSLIOP. Non-encrypted operation are rejected. • All the push messages send back to eSM are encrypted, based on SSLIOP secured session.

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7.141 Form 6.4.1 SNMP MANAGER CONFIGURATION FORM

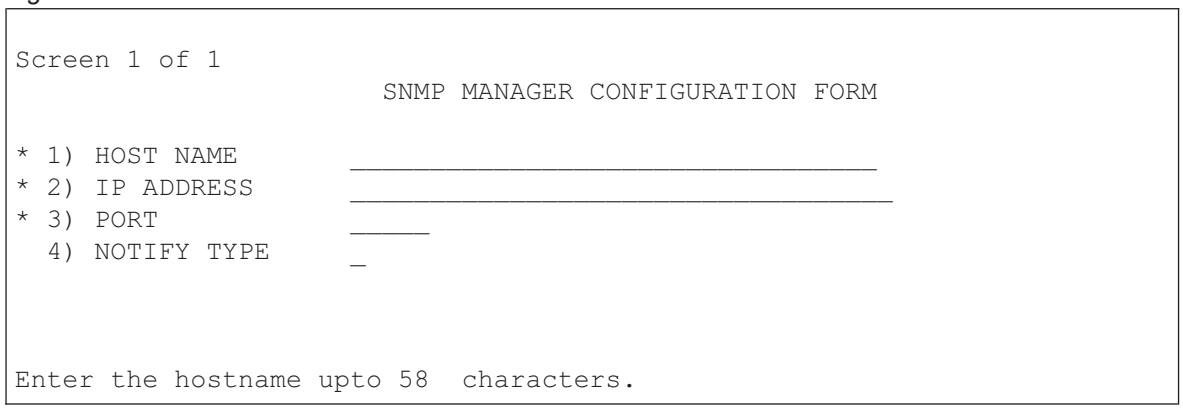
7.141.1 Overview

Use this form to add a new manager configuration station.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also . The provisioned manager is also for ASR JMXGateway. SNMPMON is responsible for changing the associated configuration file for ASR JMXGateway, and restart them then.

7.141.2 Illustration

Figure 7-101 Form 6.4.1 SNMP MANAGER CONFIGURATION FORM



7.141.3 Description of fields

Table 7-103 Form 6.4.1 SNMP MANAGER CONFIGURATION FORM field description

Field	Description
1	HOST NAME is the host name of the node you want to designate as the SNMP Manager.
2	IP ADDRESS is the IP address of the host. Valid format: IPv4, IPv6
3	PORT is the destination port of the manager node that you want to send INFORMS/TRAPS.
4	NOTIFY TYPE are I for INFORM, T for TRAPs.

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7.142 Form 6.4.2 SNMP TREE CONFIGURATION FORM

7.142.1 Overview

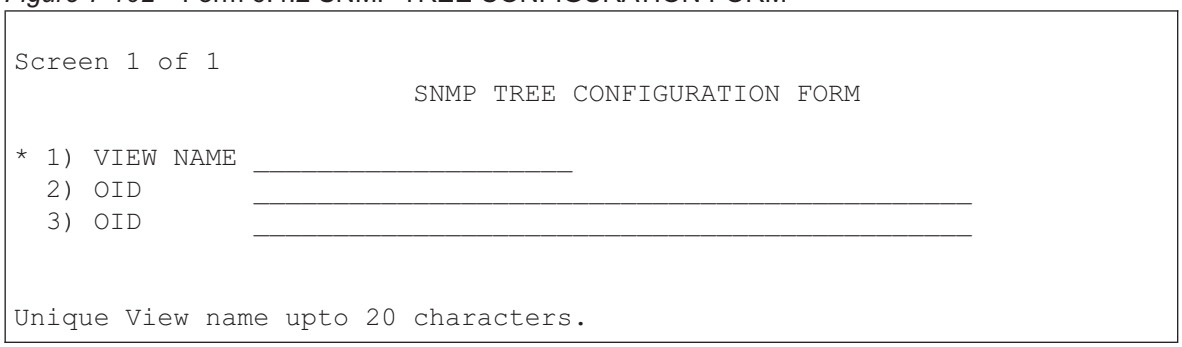
Use this form to provision a new SNMP view subtree for view-based access control.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also . This form is used to define several different views separately for platform, ASR MIBs. For platform view, it will include MIBII and host resources MIB by default.

When SNMPMON is configured to start up proxy netsnmp daemon, field "VIEW NAME" cannot be set to 'masview', 'mib2view'. The two values used are reserved for internal use.

7.142.2 Illustration

Figure 7-102 Form 6.4.2 SNMP TREE CONFIGURATION FORM



7.142.3 Description of fields

Table 7-104 Form 6.4.2 SNMP TREE CONFIGURATION FORM field description

Field	Description
1	VIEW NAME is a human readable string representing the name of this family of view subtree.
2, 3	OID (OBJECT IDENTIFIER) identifies a sub tree of the MIB.

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7.143 Form 6.4.3 SNMP GROUP CONFIGURATION FORM

7.143.1 Overview

Use this form to add a new SNMP Group.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also . This form is used to generate the group and access control definition in proxy netsnmp daemon configuration file.

When SNMPMON is configured to start up proxy netsnmp daemon, the provisioning constraints are as follows:

1. Field "GROUP NAME" cannot be set to 'masgrp', 'mib2grp'. The two values are reserved for internal use.
2. If field "SECURITY MODEL" is equal to 'usm', the field "SECURITY LEVEL" should be 'm'/'M'/'h'/'H'.

7.143.2 Illustration

Figure 7-103 Form 6.4.3 SNMP GROUP CONFIGURATION FORM

```
Screen 1 of 1
                        SNMP GROUP CONFIGURATION FORM

* 1) GROUP NAME       _____________________
  2) CONTEXT NAME     _____________________
  3) READ VIEWNAME    _____________________
  4) WRITE VIEWNAME   _____________________
  5) NOTIFY VIEWNAME  _____________________
  6) SECURITY MODEL   _____________________
  7) SECURITY LEVEL   _



Any Unique Group name upto 20 characters
```

7.143.3 Description of fields

Table 7-105 Form 6.4.3 SNMP GROUP CONFIGURATION FORM field description

Field	Description
1	GROUP NAME
2	For the current release only the Context Name of ems is supported.

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Table 7-105 Form 6.4.3 SNMP GROUP CONFIGURATION FORM field description (continued)

Field	Description
3	READ VIEWNAME is the subtree provisioned through the SNMP View Tree Configuration form which would allow SNMP Get/GetNext and GetBulk operations on that subtree.
4	WRITE VIEWNAME is the subtree provisioned through the SNMP View Tree Configuration form which would allow SNMP Set operations on that subtree.
5	NOTIFY VIEWNAME is the subtree provisioned through the SNMP View Tree Configuration form which would allow SNMP TRAPS/INFORM operations on that subtree.
6	Valid options: snmpv2c, usm
7	Valid options: L for low security, M for medium, and H for High Security

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7.144 Form 6.4.4 SNMP USER CONFIGURATION FORM

7.144.1 Overview

Use this form to add a new SNMP User.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also *MAS/mCAS IAS System Administration, 270-700-167/270-700-270*). This form is used to generate the proxy lines in proxy netsnmpd configuration file.

When SNMPMON is configured to start up proxy netsnmp daemon, the provisioning constraints are as follows:

1. Field "USER NAME" cannot be set to 'mas', 'mib2mas', the two values are reserved for internal use.
2. If field "PRIVACY_TOKEN" is not set to '-', ensure that the length is more than 8.
3. If field "AUTH_TOKEN" is not set to '-', ensure that the length is more than 8.

7.144.2 Illustration

Figure 7-104 Form 6.4.4 SNMP USER CONFIGURATION FORM

```
Screen 1 of 1
                        SNMP USER CONFIGURATION FORM

* 1) USER NAME _____________________
* 2) HOST NAME _____________________________________________________
  3) PRIVACY TOKEN _____________________
  4) AUTH TOKEN    _____________________
  5) GROUP NAME _____________________



Enter Username, Upto 20 characters.
```

7.144.3 Description of fields

Table 7-106 SNMP USER CONFIGURATION FORM field description

Field	Description
1	User name
2	HOST NAME is the name of the manager configured using the SNMP Manager Configuration Form.

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Table 7-106 SNMP USER CONFIGURATION FORM field description (continued)

Field	Description
3	PRIVACY TOKEN is required if the group that the user is being added to belongs to HIGH Security Level. If Not a "-"l can be entered for NULL privacy token. If a privacy token, other than NULL, is entered for LOW or MEDIUM Security level, it is ignored.
4	AUTH TOKEN is required if the group that the user is being added to belongs to MEDIUM & HIGH Security Level. If Not a "-" can be entered for NULL Authentication token. If an Authentication token, other than NULL, is entered for LOW Security level, it is ignored.
5	GROUP NAME is the name of the Group configured using the SNMP Group Configuration Form.

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7.145 Form 6.4.5 X733 ALARM PROPERTIES FORM

7.145.1 Overview

Use the Form 6.4.5 X733 ALARM PROPERTIES form to view or modify the alarm properties.

7.145.2 Illustration

Figure 7-105 Form 6.4.5 X733 ALARM PROPERTIES FORM

```
Screen 1 of 1
                          X733 ALARM PROPERTIES FORM

* 1) CLIENT ID             1
  2) TABLE SIZE            10240
  3) NOTIFICATION LEVEL    3
  4) NOTIFICATION INTERVAL 0
  5) NOTIFICATION COUNT    5
```

Warning: Execute the subshl command **`upd:almtable`** when TABLE SIZE is changed to a different value.

7.145.3 Description of fields

Table 7-107 Form 6.4.5 X733 ALARM PROPERTIES FORM field description

Field	Description
1	CLIENT ID to receive Alarm Messages from the table because the table was full. Read-only
2	TABLE SIZE is the number of alarms that can be stored in the alarm table. The valid range is between 64 and 40960 entries.
3	NOTIFICATION LEVEL is the minimum severity of an alarm or alarm clears that is a candidate for sending to the management station. Valid range: 1-4. 1 for critical alarms only, 2 for Critical and Major Alarms, 3 for Critical, Major and Minor Alarms, and 4 for No Alarms.
4	The NOTIFICATION INTERVAL field is the length of the notification cycle in seconds. Valid range: 0 - 120
5	The NOTIFICATION COUNT field determines the maximum number of notifications that will be sent during a notification interval. The Valid range is between 1 and 2147483647.

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7.146 Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM

7.146.1 Overview

Use this form to add a new TRAPMGR agent.

7.146.2 Illustration

Figure 7-106 Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM

```
Screen 1 of 1
                        TRAPMGR AGENT CONFIGURATION FORM

* 1) IP ADDRESS       _____________________
  2) PORT             _____________________
  3) SNMP VERSION     _____________________
  4) USER NAME        _____________________
  5) PRIVACY TOKEN    _____________________
  6) AUTH TOKEN       _____________________


Enter IP address in IPV4 or IPV6 format.
```

7.146.3 Description of fields

Table 7-108 Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM field description

Field	Description
1	IP ADDRESS is the IP address of the agent which is connected to the TRAPMGR. Valid format: IPv4, IPv6
2	PORT is the destination port of the agent node that you want to send GETs/SETs.
3	SNMP VERSION is the SNMP version used. Valid options: snmpv1, snmpv2c, and usm
4	USER NAME is the user name of the agent.
5	PRIVACY TOKEN is the privacy password.
6	AUTH TOKEN is the authentication password.

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7.147 Form 6.4.7: TRAPGW LISTENING PORT FORM

7.147.1 Overview

Use this form to view or modify the listening port for TRAPGW.

Note: The default value is 8011.
The value range is 1024-65535.

7.147.2 Illustration

Figure 7-107 Form 6.4.7: TRAPGW Listening Port Form

```
Screen 1 of 1
                          TRAPGW LISTENING PORT FORM

    2) LISTENING_PORT    8011
```

7.147.3 Description of fields

Table 7-109 Form 6.4.7: TRAPGW Listening Port Form field description

Field	Description
2	The LISTENING PORT field is the listening port of TRAPGW to receive ASR alarm. The valid range is 1024 to 65535 and the default is 8011.

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7.148 Form 6.4.8 TRAPGW MODULE ID CONFIGURATION FORM

7.148.1 Overview

Use this form to add a new TRAPGW module ID and name.

Note: The key value is 6 by default; it must be in range 1-255. Users can Insert/Delete/Update this form when ASR service is installed or uninstalled correspondingly. Users must ensure that the configured module name and its identifier must be consistent with the one in file */opt/proxy/mibs/smiV2/moduleName*.

7.148.2 Illustration

Figure 7-108 Form 6.4.8 TRAPGW Module ID Configuration Form

```
Screen 1 of 1
                    TRAPGW ASR MODULE ID CONFIGURATION FORM

  * 1) MODULE_ID          ___
    2) MODULE_NAME        ________________


Enter the module name upto 16 characters.
```

7.148.3 Description of fields

Table 7-110 Form 6.4.8 TRAPGW Module ID Configuration Form field description

Field	Description
1	MODULE ID field is used to match ASR trap OID when TRAPGW parse it. Each time when a new ASR service is installed, if it has MIB files defined, a new entry must be added to this form manually so that TRAPGW can convert alarms from this service.
2	MODULE NAME field must be consistent with the one in file */opt/proxy/mibs/smiV2/moduleName*. It is used by TRAPGW as “alAlarmSource” when mapping ASR alarm to platform alarm.

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7.149 Form 6.4.9 TRAPGW ALARM SEVERITY MAPPING FORM

7.149.1 Overview

Use this form to view or modify alarm severity mapping from ASR to Platform.

7.149.2 Illustration

Figure 7-109 Form 6.4.9 TRAPGW Alarm Severity Mapping Form

```
Screen 1 of 1
                    TRAPGW ASR ALARM SEVERITY MAPPING FORM

    2) INFORMATIONAL(0)  1
    3) WARNING(1)        5
    4) MAJOR(2)          6


Enter Review, Validate, or Print:
```

7.149.3 Description of fields

Table 7-111 Form 6.4.9 TRAPGW Alarm Severity Mapping Form field description

Field	Description
2	INFORMATIONAL field stands for the severity level of the platform alarm that the ASR informational alarm be mapped to by TRAPGW.
3	WARNING field stands for the severity level of the platform alarm that the ASR warning alarm be mapped to by TRAPGW.
4	MAJOR field stands for the severity level of the platform alarm that the ASR major alarm be mapped to by TRAPGW.

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7.150 Form 6.4.10 TRAPGW ASR APPLICATIONS ALARM MIB FORM

7.150.1 Overview

Use this form to insert/update/delete ASR application root MIB which is not in sub-tree of ASR MIB (637.71). TRAPGW translate alarms reported with more types of alarm MIBs.

7.150.2 Illustration

Figure 7-110 Form 6.4.10: TRAPGW ASR Applications Alarm MIB Form

```
Screen 1 of 1
                    TRAPGW ASR APPLICATIONS ALARM MIB FORM

* 1) ROOT MIB _____________________________________________
  2) APPLICATION NAME  ____________________________________


Enter the application root MIB upto 64 characters.
```

7.150.3 Description of fields

Table 7-112 Form 6.4.10: TRAPGW ASR Applications Alarm MIB FORM field description

Field	Description
1	ROOT MIB stands for the application root MIB relative to 1.3.6.1.4.1. Alarm trap MIB is the value plus "1.2". Maximum length: 64 bytes
2	APPLICATION NAME stands for the name of the application. It is filled to the MCAS alarm format alarm source attribute that is used by the manager node to find corresponding alarm dictionary. Maximum length: 32 bytes

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7.151 Form 6.4.11 SNMP PROXY MIB CONFIGURATION FORM

7.151.1 Overview

Use the Form 6.4.11 to view or update the SNMP proxy MIB configuration menu.

7.151.2 Illustration

Figure 7-111 Form 6.4.11: SNMP Proxy MIB Configuration Form

```
Screen 1 of 1
                      SNMP PROXY MIB CONFIGURATION FORM

* 1) ROOT MIB    ____________________________________________________
  2) IP          ____________________________________________________
  3) PORT              ______
  4) VERSION           ___
  5) USER(COMMUNITY)   ____________________________________
  6) CONTEXT           ____________________________________
  7) PRIVACY TOKEN     ________________
  8) AUTH TOKEN        ________________

WARNING: After Configuration, use "upd:config,snmp" under subshl to take
```

7.151.3 Description of fields

Table 7-113 Form 6.4.11: SNMP PROXY MIB CONFIGURATION FORM field description

Field	Description
1	ROOT MIB is the OID string identifies the MIB tree that netsnmp daemon (snmpd) forwards. Maximum length: 64 characters. ROOT MIB is the index of the table.
2	IP is the IP address that the SNMP set/get request is forwarded to. Valid IP address: IPv4, IPv6 address.
3	PORT port number that the SNMP set/get request is forwarded to. Valid values: 1-65535
4	VERSION is the SNMP version. Valid options: v1, v2c, and v3.
5	USER<COMMUNITY> is the community string for v1/v2c and the user name for v3. Maximum length: 32 characters

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Table 7-113 Form 6.4.11: SNMP PROXY MIB CONFIGURATION FORM field description (continued)

Field	Description
6	CONTEXT is the name of the context for v3. Maximum length: 32 characters
7	PRIVACY TOKEN is the privacy pass phrase. Maximum length: 16 characters
8	AUTH TOKEN is the authentication pass phrase. Maximum length: 16 characters

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7.152 Form 6.4.12: SNMP AGENTX CONFIGURATION FORM

7.152.1 Overview

Use this form to update/review snmp agentx that is supported by platform snmp. There is only one entry in the form which can configure to support agentx protocol by platform SNMP.

7.152.2 Illustration

Figure 7-112 Form 6.4.12: SNMP AGENTX CONFIGURATION FORM

```
Screen 1 of 1
         SNMP AGENTX CONFIGURATION FORM

    2) TURN ON/OFF AgentX             OFF
    3) LISTENING PORT                 4162
    4) TRANSPORT TYPE                 TCP
    5) NOTIFICATION FROM SUBAGENT     INH
    6) TIMEOUT                        1
    7) RETRIES                        5


WARNING: After configuration, use "upd:config,snmp"
or restart SNMPMON under sub
```

7.152.3 Description of fields

The following table describes the fields for the SNMP AGENTX CONFIGURATION FORM

Table 7-114 Form 6.4.12: SNMP AGENTX CONFIGURATION FORM field descriptions

Field	Description
2	TURN ON/OFF AgentX can be ON/OFF, which is responsible for support agentX or not.
3	LISTENING PORT can be a value in the range of 1~65535. But customer is responsible for not provisioning the port used by other process.
4	TRANSPORT TYPE defines the transport type between master agent and subagent. It can be TCP or UDP.
5	NOTIFICATION FROM SUBAGENT can be INH or ALW. It indicates if notification (traps/informs) can be sent from subagents.
6	TIMEOUT defines the timeout period in seconds for an AgentX request.

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Table 7-114 Form 6.4.12: SNMP AGENTX CONFIGURATION FORM field descriptions (continued)

Field	Description
7	RETRIES defines the number of retries for an AgentX request.

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OSP service circuit handler

7.153 Purpose

7.153.1 Purpose

Note: This OSPSCH section applies only to OSP.

This section provides the description of the OSP service circuit handler Submenu and its forms that are used for provisioning parameters required by OSPSCH process.

7.153.2 Contents

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7.154 Submenu 8: OSP SERVICE CIRCUIT HANDLER SUBMENU

7.154.1 Overview

The OSP SERVICE CIRCUIT HANDLER SUBMENU is the starting point to store OSPSCH related provision data.

7.154.2 Illustration

Figure 7-113 OSP Service Circuit Handler Submenu

```
Screen 1 of 1 OSP SERVICE CIRCUIT HANDLER SUBMENU

Selection   Category
[1]         OSPSCH REFERENCE ID FORM
[2]         OSPSCH SSN FORM
[3]         OSPSCH CONFIGURATION FORM
```

7.154.3 Available forms

The OSP SERVICE CIRCUIT HANDLER SUBMENU contains the following forms:

- 7.155 “Form 8.1: OSPSCH REFERENCE ID FORM” (p. 1141)
- 7.156 “Form 8.2: OSPSCH SSN FORM” (p. 1142)
- 7.157 “Form 8.3: OSPSCH CONFIGURATION FORM” (p. 1143)

7.154.4 Supported platforms

All

7.154.5 Form dependencies

None

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7.155 Form 8.1: OSPSCH REFERENCE ID FORM

7.155.1 Overview

Use this form to provision OSPSCH reference ID.

7.155.2 Illustration

Figure 7-114 Form 8.1: OSPSCH REFERENCE ID FORM

```
Screen 1 of 1
            OSPSCH REFERENCE ID FORM

*> 1. PROCESS NAME    ___
   2. REFERENCE ID    ___
```

7.155.3 Form dependencies

None

7.155.4 Description of fields

The following table defines the fields used in the OSPSCH REFERENCE ID FORM

Table 7-115 Form 8.1: OSPSCH REFERENCE ID FORM field descriptions

Field	Description
1	The PROCESS NAME field is used to represent each OSPSCH process name. The allowable format is like OSPSCH01, OSPSCH02, and so on. This field is NOT Recent Changeable.
2	The REFERENCE ID field is used to define the reference ID (SEP ID) for each OSPSCH process in this node. The default value is 0. This field is NOT Recent Changeable.

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7.156 Form 8.2: OSPSCH SSN FORM

7.156.1 Overview

Use this form to provision OSPSCH SSN form.

7.156.2 Illustration

Figure 7-115 Form 8.2: OSPSCH SSN FORM

```
Screen 1 of 1
                OSPSCH SSN FORM

*> 1. SSN              ___
   2. TRANSACTION TIMER   ___
   3. TCAP TYPE FOR UNI_MSG ___
```

7.156.3 Form dependencies

None

7.156.4 Description of fields

The following table defines the fields used in the OSPSCH SSN FORM

Table 7-116 Form 8.2: OSPSCH SSN FORM field descriptions

Field	Description
1	Sub-System Number
2	The TRANSACTION TIMER field is used to define the transaction timer value, and OSPSCH will reset the S7SCH transaction timer using this value when sending out a message. The default value is 4 seconds, and the maximum value is 999 seconds.
3	The TCAP TYPE FOR UNI_MSG is used to define the TCAP type for Unidireactional messages. The allowable values are: • ITU • ANSI

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7.157 Form 8.3: OSPSCH CONFIGURATION FORM

7.157.1 Overview

Use this form to provision OSPSCH configuration.

7.157.2 Illustration

Figure 7-116 Form 8.3: OSPSCH CONFIGURATION FORM

```
Screen 1 of 1
            OSPSCH CONFIGURATION FORM

*> 1. CARGO TIMER        ______
   2. SCCP TYPE         ______
   3. MEAS INTERVAL       ______
   4. DEST BLACK LIST     ______
   5. SSN POLL PERIOD     ______
   6. DIAL ALARM PC       ______
   7. CONGLV1RAT        ______
   8. CONGLV2RAT        ______
   9. CONGLV3RAT        ______
  10. MAX ALLOWED DIAL NUMBER ______
  11. HOP COUNTER FLAG      ______
  12. IMPORTANCE FLAG       ______
```

7.157.3 Form dependencies

None

7.157.4 Description of fields

The following table defines the fields used in the OSPSCH CONFIGURATION FORM

Table 7-117 Form 8.3: OSPSCH CONFIGURATION FORM field descriptions

Field	Description
1	The CARGO TIMER field is used to define the cargo timer value used by OSPSCH, the allowable values are: • =0, Cargo is disabled • >=0, Cargo timer value, unit is milisceoncd. The maximum value is 99 miliseconds.

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Table 7-117 Form 8.3: OSPSCH CONFIGURATION FORM field descriptions (continued)

Field	Description
2	The SCCP TYPE field is used to define the SCCP/MTP layer protocol type, the allowable values are: • ITU (Default value) • ANSI • CHINA This field is NOT Recent Changeable.
3	The MEAS INTERVAL field is used to define the measurement print interval (used by FFRD-70029-233). The allowable values are: • 0 - Not Report (Default value) • TRFC1 - 1 min • TRFC5 - 5 min • TRFC15 - 15 min • TRFC30 - 30 min • PLNTHR - 1 hour • PLNT12 - 12 hour • PLNT24 - 24 hour
4	The DEST BLACK LIST field is used to enable or disable the Destination Black list functionality, which has the following values: • TRUE, this functionality shall be enabled • FALSE, this functionality shall be disabled (Default Value)
5	The SSN POLL PERIOD field is used to define the SSN Poll period that has the following values (the unit is second): • =0, the SSN state Polling functionality is not activated (Default Value). • >0, the SSN state Polling functionality is activated and OSPSCH shall use this value as the polling interval. The maximum value is 99 seconds.
6	The DIAL ALARM PC field is used to define the threshold of sending out ALARM, which must be greater than 1 and less than 100, and default is 75.
7, 8, 9	The fields CONGLV1RAT, CONGLV2RAT and CONGLV3RAT are used to define the concerned congestion level. The values are greater than 0 and less than 999. Default values are: • CONGLV1RAT = 200 • CONGLV2RAT = 300 • CONGLV3RAT = 400

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Table 7-117 Form 8.3: OSPSCH CONFIGURATION FORM field descriptions (continued)

Field	Description
10	The MAX ALLOWED DIAL NUMBER field is used to define maximum number of allowed active dialogue number in each OSPSCH process. The default value is 5000, and the maximum number is 90000.
11	The HOP COUNTER FLAG field is used to enable or disable the setting of "hop counter" field in SCCP XUDT/XUDTS messages. The allowable values are: • FALSE - Disabled (Default Value) • TRUE - Enabled
12	The IMPORTANCE FLAG field is used to enable or disable the setting of "importance" field in SCCP XUDT/XUDTS messages. The allowable values are: • FALSE - Disabled (Default Value) • TRUE - Enabled

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Provisioning SIGTRAN protocols (SCTP, M3UA, and M2PA)

7.158 Overview

7.158.1 Purpose

This section provides information on provisioning the platform using the SIGTRAN protocols SCTP (Stream Control Transmission Protocol) and M3UA (SS7 MTP3-User Adaption Layer). Using these protocols, the platform is capable of processing SS7 messages to and from both the SS7 and IP networks.

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7.159 Submenu 12: SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU

7.159.1 Overview

The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU is the starting point for provisioning:

- Local and remote SCTP host parameters
- SCTP association parameters
- Application Server Process (ASP) data
- Signaling Gateway Process (SGP) data
- Signaling Gateway (SG) data
- Application Server (AS) data
- M3UA point code
- M3UA signaling gateway (SG) point code
- Remote application server (RAS) data
- Remote application server process (RASP) data
- M3UA parameters

Before you begin any procedure, make certain that you are familiar with the concepts and methods for using RC/V menus and forms.

7.159.2 Illustration

Figure 7-117 Submenu 12: SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU

```
Screen 1 of 1
        SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU

Selection   Category
[ 1]     SCTP HOST CONFIGURATION FORM
[ 2]     SCTP ASSOCIATION FORM
[ 3]     M3UA APPLICATION SERVER PROCESS (ASP) FORM
[ 4]     M3UA SIGNALING GATEWAY PROCESS (SGP) FORM
[ 5]     M3UA SIGNALING GATEWAY (SG) FORM
[ 6]     M3UA APPLICATION SERVER (AS) FORM
[ 7]     M3UA POINT CODE FORM
[ 8]     M3UA REMOTE APPLICATION SERVER (RAS) FORM
[ 9]     M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM
[10]     M3UA PARAMETERS FORM
```

7.159.3 Available forms

The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU contains the following forms:

- 7.161 “Form 12.1: SCTP HOST CONFIGURATION FORM” (p. 1156)

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- 7.162 “Form 12.2: SCTP ASSOCIATION FORM” (p. 1158)
- 7.163 “Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM” (p. 1163)
- 7.164 “Form 12.4: M3UA SIGNALING GATEWAY PROCESS (SGP) FORM” (p. 1165)
- 7.165 “Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU)” (p. 1167)
- 7.166 “Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ANSI)” (p. 1169)
- 7.167 “Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN)” (p. 1171)
- 7.168 “Form 12.6: M3UA APPLICATION SERVER (AS) FORM” (p. 1173)
- 7.169 “Form 12.7: M3UA POINT CODE FORM (ITU)” (p. 1176)
- 7.170 “Form 12.7: M3UA POINT CODE FORM (ANSI)” (p. 1178)
- 7.171 “Form 12.7: M3UA POINT CODE FORM (CHN)” (p. 1180)
- 7.172 “Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (ANSI)” (p. 1182)
- 7.175 “Form 12.9: M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM” (p. 1188)
- 7.176 “Form12.10: SIGTRAN M3UA PARAMETERS FORM” (p. 1190)

7.159.4 Supported platforms

All

7.159.5 Form dependencies

The following inter-form checks are necessary:

- LOCAL/REMOTE SCTP HOST INDEX in the SCTP ASSOCIATION FORM must first exist as HOST INDEX in the SCTP HOST CONFIGURATION FORM.
- LOCAL SCTP HOST INDEX in the M3UA APPLICATION SERVER PROCESS FORM must first exist as HOST INDEX in the SCTP HOST CONFIGURATION FORM.
- REMOTE SCTP HOST INDEX in the M3UA SIGNALING GATEWAY PROCESS FORM must first exist as HOST INDEX in the SCTP HOST CONFIGURATION FORM.
- M3UA ASP INDEX, if not zero (0), in the SCTP ASSOCIATION FORM must first exist as ASP INDEX in the M3UA APPLICATION SERVER PROCESS FORM.
- M3UA SGP INDEX, if not zero (0), in the SCTP ASSOCIATION FORM must first exist as SGP INDEX in the M3UA SIGNALING GATEWAY PROCESS FORM.
- ASP INDEX 1 through ASP INDEX 16, if not zero (0), in the M3UA APPLICATION SERVER FORM must first exist as ASP INDEX in the M3UA APPLICATION SERVER PROCESS FORM.
- RSP INDEX 1 through RSP INDEX 20, if not zero (0), in the M3UA APPLICATION SERVER FORM must first exist as SGP INDEX in the SGP FORM or as RASP INDEX in the RASP FORM.
- PRIMARY SGP INDEX and SECONDARY SGP INDEX, if not zero (0), in the M3UA SIGNALING GATEWAY FORM must first exist as SGP INDEX in the M3UA SIGNALING GATEWAY PROCESS FORM.
- PRIMARY SGP INDEX and SECONDARY SGP INDEX, if not zero (0), in the M3UA POINT CODE FORM must first exist as SG INDEX in the M3UA SIGNALING GATEWAY (SG) FORM.

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- SG1 Point Code and SG2 Point Code in the M3UA SIGNALING GATEWAY (SG) POINT CODE FORM must already be defined in the M3UA POINT CODE FORM.
- If the association has an SPA Name provisioned in the ADJACENT HOST INFORMATION FORM of DIAMSCH, the SERVER value of the MODE field cannot be updated to CLIENT.
- The association record cannot be deleted if the association is being used by the ADJACENT HOST INFORMATION FORM of DIAMSCH.
- If the first NETWORK APPEARANCE value is defined as not NONE in form 12.6 or form 12.7, then define all the NETWORK APPEARANCE fields for all the remaining entries as not NONE.

  If the first NETWORK APPEARANCE value is defined as NONE in form 12.6 or form 12.7, then define all the NETWORK APPEARANCE fields for all the remaining entries as NONE.
- In IPSP-IPSP M3UA configuration, define the NETWORK APPEARANCE field as NONE for all entries in form 12.6.
- In IPSP-IPSP M3UA configuration, only one local AS can be supported due to no NETWORK APPEARANCE is supported and routing key can be only defined as true point code.
- Form 12.7 (M3UA POINT CODE FORM), a maximum of 256 PCs can be assigned to any SG in Linux and maximum of 1024 PCs can be assigned to any SG in Solaris. But this number is limited by MAX DPC CONFIG defined in form 12.10 (M3UA PARAMETERS FORM).
- Form 12.6 (M3UA APPLICATION SERVER FORM) must be entered before Form 12.7 (M3UA POINT CODE FORM) and both forms must contain either NONE or non-NONE Network Appearance values.

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7.160 Provisioning the AS/ASP and SG/SGP

7.160.1 Purpose

Follow the steps in this procedure to provision the following:

- Application Server (AS)
- Application Server Process (ASP)
- Signaling Gateway (SG)
- Signaling Gateway Process (SGP)

7.160.2 Before you begin

To provision the AS/ASP or SG/SGP correctly, ensure to provision some forms before others. Refer to 7.159.5 “Form dependencies” (p. 1148) for more information. This procedure takes you through the correct form sequence.

7.160.3 Steps

1

Enter the **`rcv:menu;`** command to display the ENHANCED CONTROL SERVER MAIN MENU.

2

In the Selection field (at the bottom of the screen), type **`12`** and press **[Enter]**.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

3

In the Selection field, type **`1`** and press **[Enter]**.

4

In the `Enter Database Operation` field, type **`Insert`** to provision the form.

Result: The SCTP HOST CONFIGURATION FORM displays.

5

Enter the appropriate values into the fields. Refer to 7.161 “Form 12.1: SCTP HOST CONFIGURATION FORM” (p. 1156) for field descriptions, as well as information on field values and ranges.

6

When you have completed provisioning the form, type **`Insert`** to save your changes to the database.

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7

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

8

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

9

In the Selection field, type **3** and press **[Enter]**.

10

In the `Enter Database Operation` field, type **Insert** to provision the form.

Result: The M3UA APPLICATION SERVER PROCESS (ASP) FORM displays.

11

Enter the appropriate values into the fields. Refer to 7.163 “Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM” (p. 1163) for field descriptions, as well as information on field values and ranges.

12

When you have completed provisioning the form, type **Insert** to save your changes to the database.

13

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

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14

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

15

In the Selection field, type **4** and press **[Enter]**.

16

In the `Enter Database Operation` field, type **Insert** to provision the form.

Result: The M3UA SIGNALING GATEWAY PROCESS (SGP) FORM displays.

17

Enter the appropriate values into the fields. Refer to 7.164 “Form 12.4: M3UA SIGNALING GATEWAY PROCESS (SGP) FORM” (p. 1165) for field descriptions, as well as information on field values and ranges.

18

When you have completed provisioning the form, type **Insert** to save your changes to the database.

19

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

20

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

21

In the Selection field, type **2** and press **[Enter]**.

22

In the `Enter Database Operation` field, type **Insert** to provision the form.

Result: The SCTP ASSOCIATION FORM displays.

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23

Enter the appropriate values into the fields. Refer to 7.162 "Form 12.2: SCTP ASSOCIATION FORM" (p. 1158) for field descriptions, as well as information on field values and ranges.

24

When you have completed provisioning the form, type **Insert** to save your changes to the database.

25

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions in order to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

26

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

27

In the Selection field, type **5** and press **[Enter]**.

28

In the `Enter Database Operation` field, type **Insert** to provision the form.

Result: The M3UA SIGNALING GATEWAY (SG) FORM displays.

29

Enter the appropriate values into the fields. Refer to 7.165 "Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU)" (p. 1167), 7.166 "Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ANSI)" (p. 1169), or 7.167 "Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN)" (p. 1171) for field descriptions, as well as information on field values and ranges.

30

When you have completed provisioning the form, type **Insert** to save your changes to the database.

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31

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions in order to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

32

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

33

In the Selection field, type **6** and press **[Enter]**.

34

In the `Enter Database Operation` field, type **Insert** to provision the form.

Result: The M3UA APPLICATION SERVER (AS) FORM displays.

35

Enter the appropriate values into the fields. Refer to 7.168 “Form 12.6: M3UA APPLICATION SERVER (AS) FORM” (p. 1173) for field descriptions, as well as information on field values and ranges.

36

When you've completed provisioning the form, type **Insert** to save your changes to the database.

37

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions in order to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

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38

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

39

In the Selection field, type **7** and press **[Enter]**.

40

In the `Enter Database Operation` field, type **Insert** to provision the form.

Result: The M3UA POINT CODE FORM displays.

41

Enter the appropriate values into the fields. Depending on your form version, refer to either 7.169 "Form 12.7: M3UA POINT CODE FORM (ITU)" (p. 1176), 7.170 "Form 12.7: M3UA POINT CODE FORM (ANSI)" (p. 1178), or 7.171 "Form 12.7: M3UA POINT CODE FORM (CHN)" (p. 1180) for field descriptions, as well as information on field values and ranges.

42

When you have completed provisioning the form, type **Insert** to save your changes to the database.

43

Were your changes saved to the database successfully?

If...	then...
yes	Go to the next step.
no	Read the error message(s), and follow the instructions to correct your errors. Once you have done this, type **Insert** when prompted to save your changes to the database.

44

Type **[Shift] <** (the Shift key plus the "less than" key) to exit the form.

Result: The SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU displays.

45

You have successfully provisioned the AS/ASP or SG/SGP. Type **[Shift] <** to exit the SIGTRAN SERVICE CIRCUIT HANDLER SUBMENU.

Result: The ENHANCED CONTROL SERVER MAIN MENU displays.

End of steps

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7.161 Form 12.1: SCTP HOST CONFIGURATION FORM

7.161.1 Overview

Use the Form 12.1: SCTP HOST CONFIGURATION FORM to record provision parameters for both local and remote SCTP hosts. This form supports only add and delete operation.

7.161.2 Illustration

Figure 7-118 Form 12.1: SCTP HOST CONFIGURATION FORM

7.161.3 Supported platforms

All

7.161.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.161.5 Description of fields

The following table defines the fields used in the SCTP HOST CONFIGURATION FORM.

Table 7-118 Form 12.1: SCTP HOST CONFIGURATION FORM field description

Field	Description
1	The parameter in the HOST INDEX field is an index that identifies the SCTP host. The field is also available in the SCTP ASSOCIATION FORM. Valid range: 1-250
2	The LOCAL HOST field indicates whether this host entry is in the local end or not. Valid values: **Y** (yes), **N** (no)
3	The IP ADDRESS 1 field specifies the IP address for one of the paths supported by this association. Valid formats: IPv4, IPv6

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Table 7-118 Form 12.1: SCTP HOST CONFIGURATION FORM field description (continued)

Field	Description
4	The IP ADDRESS 2 field specifies the IP address for the second path supported by this association. The IP ADDRESS 2 field is optional. Valid values: Real IP address, 0 Valid formats: IPv4, IPv6

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7.162 Form 12.2: SCTP ASSOCIATION FORM

7.162.1 Overview

Use the Form 12.2: SCTP ASSOCIATION FORM to provision parameters for the SCTP association.

Note: Field 1 to 9 and field 20 cannot be updated.
Field 10 to 19 and field 21 can be updated only when the association is in MOOS state.

7.162.2 Illustration

Figure 7-119 Form 12.2: SCTP ASSOCIATION FORM

```
                                Record 1/18
Screen 1 of 1
                            SCTP ASSOCIATION FORM

*>  1. NODE INDEX               0
*>  2. ASSOCIATION INDEX        1
    3. TREATMENT                M2PA

    4. LOCAL PORT NUMBER        9001       6. REMOTE PORT NUMBER        3565
    5. LOCAL SCTP HOST INDEX    1          7. REMOTE SCTP HOST INDEX    2

    8. M3UA ASP INDEX           0          9. M3UA SGP/RASP INDEX       0

   10. RTO.INITIAL (millisec)   400       17. HEARTBEAT INTERVAL        1
   11. RTO.MIN (millisec)       200       18. T1 INIT TIMER (millisec)  3000
   12. RTO.MAX (millisec)       2000      19. T1 COOKIE TIMER           4
   13. VALID COOKIE LIFE        60        20. ASSOCIATION MODE          CLIENT
   14. ASSOCIATION MAX RETRAN   20        21. FIXED PRIMARY             F
   15. PATH MAX RETRANSMISSIONS 9         22. SACK TIMER (millisec)     100
   16. MAX INIT RETRANSMISSIONS 8

Enter Review, Next, Former, Change-insert, Validate, or Print:
```

7.162.3 Supported platforms

All

7.162.4 Form dependencies

See 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

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7.162.5 Description of fields

Table 7-119 Form 12.2: SCTP ASSOCIATION FORM field description

Field	Description
1	The NODE INDEX field specifies the node id in the N+K cluster environment or the virtual cluster node ID in multiple SIGTRAN processes configuration. For information on multiple SIGTRAN processes support, refer to the **Administering SIGTRAN Protocols** chapter in the . The NODE INDEX should always be 0 for either standalone or active/active platform. Valid range: 0-31
2	The ASSOCIATION INDEX field specifies the association number. Valid range: 1-52.
3	The TREATMENT field specifies the treatment type. Valid values: M2PA, M3UA, DIAM, IPSP, MUX The total number of M2PA entries should be no more than 20 per stack. The total number of M3UA entries should be no more than 16 per stack. The total number of DIAM entries should be no more than 32 per stack. The total number of IPSP entries should be no more than 20 per stack. The total number of MUX entries should be no more than 52 per stack. A maximum of 104 associations per node and 208 associations per system is supported. **Note:** On the platform, the M2PA, M3UA, and IPSP treatments do not co-exist.
4	The LOCAL PORT NUMBER field identifies the SCTP port used by the local network element (platform). Valid range: 1025-32767
5	The LOCAL SCTP HOST INDEX field is used to correlate this association entry to the host information. Valid range: 1-250
6	The REMOTE PORT NUMBER field identifies the SCTP port used by the remote endpoint (signaling gateway). Valid range: 1025-65535
7	The REMOTE SCTP HOST INDEX field is used to correlate this association entry to the host information. Valid range: 1-250

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Table 7-119 Form 12.2: SCTP ASSOCIATION FORM field description (continued)

Field	Description
8	The M3UA ASP INDEX field is used to correlate this association entry to the host information. The M3UA ASP INDEX must be 0 for treatment DIAM, M2PA, and MUX. In cluster configuration and if the treatment is M3UA or IPSP, M3UA ASP INDEX in each node should always use NODE INDEX plus one as the ASP INDEX. For more examples, refer to "Example" (p. 1161). Valid range: 0-32
9	The M3UA SGP/RASP INDEX field is used to correlate the association entry to the host information. Valid range: 0-20 **Note:** The value must be 0 for treatment DIAM, M2PA, and MUX.
10	The RTO.INITIAL field provides an initial value for the retransmission timeout. The RTO.INITIAL field is used until the round-trip time (RTT) measurement is made and the RTO can be calculated. Valid range: 20-120000 milliseconds Default value: 3000 milliseconds
11	The RTO.MIN field provides a minimum RTO value, which guards against unnecessary timeouts. Valid range: 20-60000 milliseconds Default value: 1000 milliseconds
12	The RTO.MAX field provides an upper bound for retransmission timeout. The value must be greater than the value of the RTO.MIN field. Valid range: 100-120000 milliseconds Default value: 60000 milliseconds
13	The VALID COOKIE LIFE field represents the time a cookie is used before it is marked as stale and cannot be used again to complete association initialization. Valid range: 5-120 seconds Default value: 60 seconds
14	The ASSOCIATION MAX RETRANSMISSIONS field specifies the maximum number of retransmissions that will be attempted before an association is marked as "inaccessible." The default value is 10. The range is 1-20. The value of this parameter must be larger than the value in the PATH MAX RETRANS field.
15	The PATH MAX RETRANSMISSIONS field specifies the maximum number of retransmissions that will be attempted before a path in an association is marked as "inactive." The default value is 5. The range is 1-9.

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Table 7-119 Form 12.2: SCTP ASSOCIATION FORM field description (continued)

Field	Description
16	The MAX INIT RETRANSMISSIONS field specifies the maximum number of times an INIT is retransmitted from the endpoint which is attempting to set up an association. Valid range: 8-10 Default value: 8
17	The HEARTBEAT INTERVAL field specifies the amount of time between HEARTBEAT transmissions by the endpoint. Valid range: 1-300 seconds Default value: 30 seconds
18	The T1 INIT TIMER field identifies the amount of time the endpoint waits for an INIT ACK after sending an INIT. Valid range: 20-99000 milliseconds Default value: 3000 milliseconds
19	The T1 COOKIE TIMER field specifies the amount of time the endpoint waits for a COOKIE ACK after the COOKIE ECHO is sent. Valid range: 1-99 seconds Default value (recommended): 4 seconds
20	The ASSOCIATION MODE field defines whether an association initiates the SCTP handshake (acts as a client). Default value: CLIENT Valid values: CLIENT, SERVER **Note:** The ASSO_MODE field must be CLIENT for treatment M3UA.
21	The FIXED PRIMARY field specifies whether this association is configured to have fixed primary path. An association with a fixed primary path ensure that traffic uses the primary path as long as that path is available. Default value: F (FALSE). **Note:** To ensure a fixed primary path, set the default to T (TRUE).
22	The SACK TIMER field specifies the maximum amount of time that can be delayed before the SACK(Selective Acknowledgement) will be sent after receiving a data chunk. The range for this parameter is [40,500] milliseconds and in increments of 20 milliseconds.

7.162.6 Example

NODE IDX	ASP INDEX
0	1
1	2

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NODE IDX	ASP INDEX
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	11
11	12
12	13
13	14
14	15
15	16
16	17
17	18
18	19
19	20
20	21
21	22
22	23
23	24
24	25
25	26
26	27
27	28
28	29
29	30
30	31
31	32

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7.163 Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM

7.163.1 Overview

Use Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM to provision the application server process (ASP) data.

Note: Field 1 to 4 cannot be updated. For updating field 5, the ASP should be DOWN or INACTIVE.

7.163.2 Illustration

Figure 7-120 Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM

```
Record 1/1
Screen 1 of 1
       M3UA APPLICATION SERVER PROCESS (ASP) FORM
*>  1. ASP INDEX                  1
    2. LOCAL PORT NUMBER          2905
    3. LOCAL SCTP HOST INDEX      1
    4. NETWORK ASP INDEX          3
    5. ASP IS SERVER              N


Enter Review, Next, Former, Change-insert, Validate, or Print:
```

7.163.3 Supported platforms

All

7.163.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.163.5 Description of fields

The following table defines the fields in the M3UA APPLICATION SERVER PROCESS (ASP) FORM.

Table 7-120 Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM field description

Field	Description
1	The value for the ASP INDEX (key). Valid values: 1 - 16
2	The LOCAL PORT NUMBER field specifies the port number of the local SCTP ASP connection. Valid range: 1025-32767

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Table 7-120 Form 12.3: M3UA APPLICATION SERVER PROCESS (ASP) FORM field description (continued)

Field	Description
3	The value in the LOCAL SCTP HOST INDEX field identifies the SCTP association data. Valid range: 1-99
4	Use the NETWORK ASP INDEX field to provision the ASP ID sent in M3UA messages. Valid range: 1-4294967295
5	Provide the status of ASP IS SERVER in this field. Valid values: Y, N

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7.164 Form 12.4: M3UA SIGNALING GATEWAY PROCESS (SGP) FORM

7.164.1 Overview

Use this form to provision signaling gateway process (SGP) data. This form supports only add and delete operation.

7.164.2 Illustration

Figure 7-121 M3UA SIGNALING GATEWAY PROCESS (SGP) FORM

```
Screen 1 of 1
      M3UA SIGNALING GATEWAY PROCESS (SGP) FORM

*>  1. SGP INDEX          __
  2. REMOTE PORT NUMBER   ____
  3. REMOTE SCTP HOST INDEX ____
  4. ROUTING CONTEXT      ____
```

7.164.3 Supported platforms

All

7.164.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.164.5 Description of fields

The following table defines the fields in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM.

Table 7-121 Form 12.4: M3UA SIGNALING GATEWAY PROCESS (SGP) FORM field description

Field	Description
1	The value in the SGP INDEX field ties SGP data to the signaling gateway data. Valid values: 1 - 20
2	The REMOTE PORT NUMBER field identifies the port number of the remote SGP. Valid range: 1025-65535
3	Use the value in the REMOTE SCTP HOST INDEX field to correlate the SCTP association data to this SGP. Valid range: 1-99

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Table 7-121 Form 12.4: M3UA SIGNALING GATEWAY PROCESS (SGP) FORM field description (continued)

Field	Description
4	The Routing Context field specifies the context used for routing. Valid range: 0-4294967293, NONE

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7.165 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU)

7.165.1 Overview

Use Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU) to provision Signaling Gateway (SG) data. All the ASPs interacting with the SG should be DOWN or INACTIVE when updating fields of the form.

Note: The form cannot be updated in cluster configuration.

7.165.2 Illustration

Figure 7-122 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU)

```
Screen 1 of 1
       M3UA SIGNALING GATEWAY (SG) FORM

*>  1. SG INDEX            __________
   2. SG CLLI             ___________
   3. SG TRAFFIC DISTRIBUTION MODE  ________________
   4. PRIMARY SGP INDEX       _____________
   5. SECONDARY SGP INDEX      _____________
   6. POINT CODE           __________

SG INDEX. Enter a value 1 to 10.
```

7.165.3 Supported platforms

All

7.165.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.165.5 Description of fields

Table 7-122 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU) field description

Field	Description
1	The SG INDEX (key) field identifies the signaling gateway. Valid values: 1-10

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Table 7-122 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ITU) field description (continued)

Field	Description
2	The SG CLLI field specifies the common language location identifier for the signaling gateway. The string must be exactly 11 characters, using the "xxxxyyzzwww" format, where xxxx = city, town, or locality code. yy= state or province code. zz= building code. www= traffic unit identifier code.
3	The SG TRAFFIC DISTRIBUTION MODE field specifies the SG traffic distribution mode. Valid values: O (override), L (load sharing) Default value: O
4	The PRIMARY SGP INDEX field identifies the primary SGP. The value must be provisioned in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. Valid values: 1-20
5	The SECONDARY SGP INDEX field identifies the secondary SGP. The value must be provisioned in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. Valid range: 0-20. 0 (zero) in the field indicates null.
6	The POINT CODE field specifies the ITU point code.

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7.166 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ANSI)

7.166.1 Overview

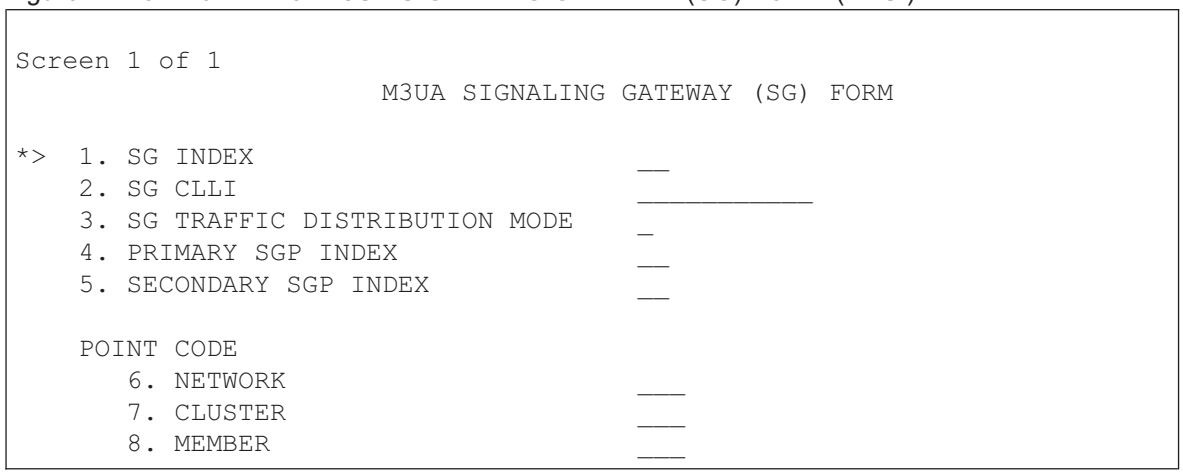
Use this form to provision Signaling Gateway (SG) data. All the ASPs interacting with this SG should be DOWN or INACTIVE when updating fields of this form. This form cannot be updated in cluster configuration.

7.166.2 Supported platforms

All

7.166.3 Illustration

Figure 7-123 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (ANSI)



7.166.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.166.5 Description of fields

Table 7-123 Form 12.5: M3UA SIGNALING GATEWAY FORM (ANSI) field description

Field	Description
1	The SG INDEX (key) field identifies the signaling gateway. Valid values: 1 - 10

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Table 7-123 Form 12.5: M3UA SIGNALING GATEWAY FORM (ANSI) field description (continued)

Field	Description
2	The SG CLLI field specifies the common language location identifier for the signaling gateway. The string must be exactly 11 characters, using the "xxxxyyzzwww" format, where xxxx = city, town, or locality code. yy= state or province code. zz= building code. www= traffic unit identifier code.
3	The SG TRAFFIC DISTRIBUTION MODE field specifies the SG traffic distribution mode. Valid values: O (override), L (load sharing) Default value: O
4	The PRIMARY SGP INDEX field identifies the primary SGP. This value must be provisioned in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. Valid values: 1 -20
5	The SECONDARY SGP INDEX field identifies the secondary SGP. This value must be provisioned in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. Valid range: 0-20. 0 (zero) in the field indicates null
6	NETWORK field contains the SS7 network ID number for the point code, which is logically connected to the platform system through the M3UA signaling gateway. Valid range: 0-255 **Note:** Ensure that NETWORK ID, CLUSTER ID, and MEMBER ID are all not set to zero (that is 0-0-0).
7	CLUSTER field contains the SS7 cluster ID number for the point code, which is logically connected to the platform system through the M3UA signaling gateway. Valid range: 0-255 **Note:** Ensure that NETWORK ID, CLUSTER ID, and MEMBER ID are all not set to zero (that is 0-0-0).
8	MEMBER field contains the SS7 member ID number for the point code, which is logically connected to the platform system through the M3UA signaling gateway. Valid range: 0-255 **Note:** Ensure that NETWORK ID, CLUSTER ID, and MEMBER ID are all not set to zero (that is 0-0-0).

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7.167 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN)

7.167.1 Overview

Use Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN) to provision Signaling Gateway (SG) data. All the ASPs interacting with this SG should be DOWN or INACTIVE when updating fields of this form.

Note: The form cannot be updated in cluster configuration.

7.167.2 Supported platforms

All

7.167.3 Illustration

Figure 7-124 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN)

```
Screen 1 of 1
                  M3UA SIGNALING GATEWAY (SG) FORM

*>  1. SG INDEX                          __
    2. SG CLLI                          ____________
    3. SG TRAFFIC DISTRIBUTION MODE     _
    4. PRIMARY SGP INDEX                __
    5. SECONDARY SGP INDEX              __

    POINT CODE
       6. MAIN AREA                     ___
       7. SUB AREA                      ___
       8. POINT                         ___
```

7.167.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.167.5 Description of fields

Table 7-124 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN) field description

Field	Description
1	The SG INDEX (key) field identifies the signaling gateway. Valid values: 1 - 10

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Table 7-124 Form 12.5: M3UA SIGNALING GATEWAY (SG) FORM (CHN) field description (continued)

Field	Description
2	The SG CLLI field specifies the common language location identifier for the signaling gateway. The string must be exactly 11 characters, using the "xxxxyyzzwww" format, where xxxx = city, town, or locality code. yy= state or province code. zz= building code. www= traffic unit identifier code.
3	The SG TRAFFIC DISTRIBUTION MODE field specifies the SG traffic distribution mode. Valid values: O (override), L (load sharing) Default value: O
4	The PRIMARY SGP INDEX field identifies the primary SGP. This value must be provisioned in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. Valid values: 1-20
5	The SECONDARY SGP INDEX field identifies the secondary SGP. This value must be provisioned in the M3UA SIGNALING GATEWAY PROCESS (SGP) FORM. Valid range: 0-20. 0 (zero) in the field indicates null.
6	The MAIN AREA ID field specifies the main signaling area ID for the SG point code. Valid range: 0-255 **Note:** Ensure that the MAIN AREA ID, SUB-AREA ID, and POINT ID are all not set to zero (that is 0-0-0).
7	The SUB_AREA ID field contains the SS7 cluster ID number for the SG point code. Valid range: 0-255 **Note:** Ensure that the MAIN AREA ID, SUB-AREA ID, and POINT ID are all not set to zero (that is 0-0-0).
8	The POINT ID field contains the SS7 member ID number for SG the point code. Valid range: 0-255 **Note:** Ensure that the MAIN AREA ID, SUB-AREA ID, and POINT ID are all not set to zero (that is 0-0-0).

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7.168 Form 12.6: M3UA APPLICATION SERVER (AS) FORM

7.168.1 Overview

Use Form 12.6: M3UA APPLICATION SERVER (AS) FORM to provision data for the application server (AS). Field 1, 3, 4 and 5 cannot be updated. The AS should be DOWN or INACTIVE when updating other fields of this form.

Note: The form cannot be updated in cluster configuration.

7.168.2 Illustration

Figure 7-125 Form 12.6: M3UA APPLICATION SERVER (AS) FORM

```
                                        Record 1/1
Screen 1 of 2
        M3UA APPLICATION SERVER (AS) FORM


*> 1. AS INDEX                  1__        3. ROUTING KEY TYPE   RKD
   2. APPLICATION SERVER MODE   0          4. POINT CODE TYPE    ____
   5. NETWORK APPEARANCE       NONE
   6. ASP INDEX 1     __     20. ASP INDEX 15  0    34. ASP INDEX 29  0
   7. ASP INDEX 2      0     21. ASP INDEX 16  0    35. ASP INDEX 30  0
   8. ASP INDEX 3      0     22. ASP INDEX 17  0    36. ASP INDEX 31  0
   9. ASP INDEX 4      0     23. ASP INDEX 18  0    37. ASP INDEX 32  0
  10. ASP INDEX 5      0     24. ASP INDEX 19  0    38. RSP INDEX 1    __
  11. ASP INDEX 6      0     25. ASP INDEX 20  0    39. RSP INDEX 2    0
  12. ASP INDEX 7      0     26. ASP INDEX 21  0    40. RSP INDEX 3    0
  13. ASP INDEX 8      0     27. ASP INDEX 22  0    41. RSP INDEX 4    0
  14. ASP INDEX 9      0     28. ASP INDEX 23  0    42. RSP INDEX 5    0
  15. ASP INDEX 10     0     29. ASP INDEX 24  0    43. RSP INDEX 6    0
  16. ASP INDEX 11     0     30. ASP INDEX 25  0    44. RSP INDEX 7    0
  17. ASP INDEX 12     0     31. ASP INDEX 26  0    45. RSP INDEX 8    0
  18. ASP INDEX 13     0     32. ASP INDEX 27  0    46. RSP INDEX 9    0
  19. ASP INDEX 14     0     33. ASP INDEX 28  0    47. RSP INDEX 10   0



AS INDEX. Enter 1-16 for stand alone config and 1 for cluster config
```


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```
Screen 2 of 2
                M3UA APPLICATION SERVER (AS) FORM


    48. RSP INDEX 11  0
    49. RSP INDEX 12  0
    50. RSP INDEX 13  0
    51. RSP INDEX 14  0
    52. RSP INDEX 15  0
    53. RSP INDEX 16  0
    54. RSP INDEX 17  0
    55. RSP INDEX 18  0
    56. RSP INDEX 19  0
    57. RSP INDEX 20  0
```

7.168.3 Supported platforms

All

7.168.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.168.5 Description of fields

Table 7-125 Form 12.6: M3UA APPLICATION SERVER (AS) FORM field description

Field	Description
1	The AS INDEX (key) field specifies the application server ID number, which must be set to 1.
2	The AS TRAFFIC MODE field defines the way the application server distributes traffic. Valid values: O (override), L (load sharing) Default value: O
3	The AS ROUTING KEY TYPE field identifies what the signaling gateway uses to route to the application server. Valid values: RKD (routing key of DPC)
4	The AS POINTCODE TYPE field specifies either TPC (true point code) or APC (alias point code). Currently, this field is set only to TPC.

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Table 7-125 Form 12.6: M3UA APPLICATION SERVER (AS) FORM field description (continued)

Field	Description
5	The NETWORK APPEARANCE field specifies the network appearance value for the AS. Valid values: 0-4294967294, NONE Default value: NONE When you use the network appearance, configure the **M3UA APPLICATION SERVER (AS) FORM** before **M3UA SIGNALING GATEWAY (SG) FORM** .
6	The ASP INDEX 1 field specifies an INDEX logically included in this AS. Valid values: 1-16
7-21	The ASP INDEX 2 – ASP INDEX 16 fields provide indexes to the ASP data. Valid values: 0-16
22	The RSP INDEX 1 field specifies the RSP INDEX that identifies one of the signaling gateway processes. Valid values: 1-20
23-40	The RSP INDEX 2 - RSP INDEX 20 fields provide indexes that identify the second signaling gateway processes. Valid values: 0-20

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7.169 Form 12.7: M3UA POINT CODE FORM (ITU)

7.169.1 Overview

Use this form to add new SS7 point code, or to display, or delete existing point code. This form supports only add and delete operation.

7.169.2 Illustration

Figure 7-126 M3UA POINT CODE FORM (ITU)

```
Screen 1 of 1
                              M3UA POINT CODE FORM

*>   1. NETWORK ID                        230
*    2. CLUSTER ID                        35
*    3. MEMBER ID                         12
*    4. NETWORK APPEARANCE                2
     5. NORMAL SG INDEX                   1
     6. FIRST ALTERNATE SG INDEX          0
     7. SECOND ALTERNATE SG INDEX         0
     8. TRAFFIC DISTRIBUTION MODE         0
```

7.169.3 Supported platforms

All

7.169.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.169.5 Description of fields

The following table defines the fields in the M3UA POINT CODE FORM (ITU).

Table 7-126 Form 12.7: M3UA POINT CODE FORM (ITU) field description

Field	Description
1	The Network ID
2	The Cluster ID
3	The Member ID
4	The NETWORK APPEARANCE is an optional M3UA local reference that together with the Point Code uniquely identify an SS7 node. Default value: NONE Valid range: 0-4294967294, NONE

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Table 7-126 Form 12.7: M3UA POINT CODE FORM (ITU) field description (continued)

Field	Description
5	The NORMAL SG INDEX field identifies the primary signaling gateway ID that is used for reaching the pointcode. Valid values: 1-10
6	The FIRST ALTERNATE SG INDEX field identifies the secondary signaling gateway ID that is used for reaching the pointcode. Valid range: 0-10
7	The SECOND ALTERNATE SG INDEX field identifies the secondary signaling gateway ID that is used for reaching the pointcode. Valid range: 0-10
8	The TRAFFIC DISTRIBUTION MODE field identifies the outgoing traffic distribution mode. Valid values: O (Overload), L (Loadshare) Default value: O If L is used, the outgoing traffic is loadshared among all the active SGs (NORMAL SG, FIRST ALTERNATIVE AND SECOND ALTERNATIVE). If O is used, the outgoing traffic that is sent to the first available SGs in the sequence of NORMAL SG, FIRST ALTERNATIVE and SECOND ALTERNATIVE SG. **Note:** a maximum of 256 PCs can be assigned to any SG (primary or alternate).

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7.170 Form 12.7: M3UA POINT CODE FORM (ANSI)

7.170.1 Overview

Use this form to add new SS7 point code, or to display, or delete existing point code. This form supports only add and delete operation.

7.170.2 Illustration

Figure 7-127 Form 12.7: M3UA POINT CODE FORM (ANSI)

```
Screen 1 of 1
         M3UA POINT CODE FORM

*> 1. NETWORK ID                        ----
*  2. CLUSTER ID                        ----
*  3. MEMBER ID                         ----
*  4. NETWORK APPEARANCE                ----
   5. NORMAL SG INDEX                   ----
   6. FIRST ALTERNATE SG INDEX          ----
   7. SECOND ALTERNATE SG INDEX         ----
   8. TRAFFIC DISTRIBUTION MODE         ----


NETWORK ID. Enter a value between 0 and 255.
```

7.170.3 Supported platforms

All

7.170.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.170.5 Description of fields

The following table defines the fields in the M3UA POINT CODE FORM (ANSI).

Table 7-127 Form 12.7: M3UA POINT CODE FORM (ANSI) field description

Field	Description
1	The NETWORK ID field contains the SS7 network ID number for the point code, which is logically connected to the platform through the M3UA signaling gateway. Valid range: 0-255 **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID must not all be set to zero (that is 0-0-0).

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Table 7-127 Form 12.7: M3UA POINT CODE FORM (ANSI) field description (continued)

Field	Description
2	The CLUSTER ID field contains the SS7 cluster ID number for the point code, which is logically connected to the through the M3UA signaling gateway. Valid range: 0-255 **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID must not all be set to zero (that is 0-0-0).
3	The MEMBER ID field contains the SS7 member ID number for the point code, which is logically connected to the platform through the M3UA signaling gateway. Valid range: 0-255 **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID must not all be set to zero (that is 0-0-0).
4	The NETWORK APPEARANCE is an optional M3UA local reference that together with the Point Code uniquely identify an SS7 node. Valid range: 0-4294967294, NONE Default value: NONE
5	The NORMAL SG INDEX field identifies the primary signaling gateway ID that is used for reaching the pointcode. Default value: 1-10
6	The FIRST ALTERNATE SG INDEX field identifies the first signaling gateway ID that is used for reaching the point code. Valid values: 1-10
7	The SECOND ALTERNATE SG INDEX field identifies the second alternative signaling gateway ID that is used for reaching the point code. Valid range: 0-10
8	The TRAFFIC DISTRIBUTION MODE field identifies the outgoing traffic distribution mode. Valid values: O (Overload), L (Loadshare) Default value: O . If L is used, the outgoing traffic is loadshared among all the active SGs (NORMAL SG, FIRST ALTERNATIVE AND SECOND ALTERNATIVE). If O is used, the outgoing traffic is sent to the first available SGs in the sequence of NORMAL SG, FIRST ALTERNATIVE and SECOND ALTERNATIVE SG **Note:** a maximum of 256 PCs can be assigned to any SG (primary or alternate).

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7.171 Form 12.7: M3UA POINT CODE FORM (CHN)

7.171.1 Overview

Use this form to add new SS7 point code, or to display, or delete existing point code. This form supports only add and delete operation.

7.171.2 Illustration

Figure 7-128 M3UA POINT CODE FORM (CHN)

```
Screen 1 of 1
         M3UA POINT CODE FORM


*> 1. MAIN AREA ID                    ----
*  2. SUB AREA ID                     ----
*  3. POINT ID                        ----
*  4. NETWORK APPEARANCE              ----
   5. NORMAL SG INDEX                 ----
   6. FIRST ALTERNATE SG INDEX        ----
   7. SECOND ALTERNATE SG INDEX       ----
   8. TRAFFIC DISTRIBUTION MODE       ----
```

7.171.3 Supported platforms

All

7.171.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.171.5 Description of fields

The following table defines the fields in the M3UA POINT CODE FORM (CHN).

Table 7-128 M3UA POINT CODE FORM (CHN) field description

Field	Description
1	The MAIN AREA ID field specifies the main signaling area ID for the point code, which is logically connected to the platform through the M3UA signaling gateway. Valid range: 0-255 **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID must not all be set to zero (that is 0-0-0).

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Table 7-128 M3UA POINT CODE FORM (CHN) field description (continued)

Field	Description
2	The SUB-AREA ID field specifies the sub-signaling area ID for the point code, which is logically connected to the platform through the M3UA signaling gateway. Valid range: 0-255 **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID must not all be set to zero (that is 0-0-0).
3	The POINT ID field specifies the signaling point ID for the point code, which is logically connected to the platform through the M3UA signaling gateway. Valid range: 0-255 **Note:** The MAIN AREA ID, SUB-AREA ID, and POINT ID must not all be set to zero (that is 0-0-0).
4	The NETWORK APPEARANCE is an optional M3UA local reference that together with the Point Code uniquely identify an SS7 node. Default value: NONE Valid range: 0-4294967294, NONE
5	The NORMAL SG INDEX field identifies the primary signaling gateway ID that is used for reaching the pointcode. Valid values: 1-10
6	The FIRST ALTERNATE SG INDEX field identifies the first signaling gateway ID that is used for reaching the point code. Valid values: 1-10
7	The SECOND ALTERNATE SG INDEX field identifies the second alternative signaling gateway ID that is used for reaching the point code. Valid values: 1-10
8	The TRAFFIC DISTRIBUTION MODE field identifies the outgoing traffic distribution mode. Valid values: O Overload), L (Loadshare) Default value: O If L is used, the outgoing traffic is loadshared among all the active SGs (NORMAL SG, FIRST ALTERNATIVE AND SECOND ALTERNATIVE). If O is used, the outgoing traffic is sent to the first available SGs in the sequence of NORMAL SG, FIRST ALTERNATIVE and SECOND ALTERNATIVE SG. **Note:** a maximum of 256 PCs can be assigned to any SG (primary or alternate).

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7.172 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (ANSI)

7.172.1 Overview

Use this form to provision Remote Application Server. Field 1 and field 4 cannot be updated. Remote AS should be DOWN or INACTIVE when updating other fields of this form.

7.172.2 Illustration

Figure 7-129 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM

```
Screen 1 of 1
            M3UA REMOTE APPLICATION SERVER (RAS) FORM

*>  1. REMOTE AS INDEX                    1
    2. REMOTE AS CLLI                     THIS_RAS_01
    3. REMOTE APPLICATION SERVER MODE     O
    4. ROUTING CONTEXT                    1
    POINT CODE
    5. NETWORK                           230
    6. CLUSTER                          30
    7. MEMBER                           12


Enter Review,Next,Former,Change-insert,Validate,or Print:
```

7.172.3 Supported platforms

All

7.172.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.172.5 Description of fields

Table 7-129 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM field description

Field	Description
1	The REMOTE AS INDEX field specifies the application server index number. Valid range: 1-20
2	The REMOTE AS CLLI field specifies the common language location identifier for the application server.

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Table 7-129 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM field description (continued)

Field	Description
3	The REMOTE APPLICATION SERVER MODE field specifies the traffic mode of the remote application server. The value L is for load share and the value O is for override. Default value: O
4	The ROUTING CONTEXT field specifies the context used for routing. Valid range: 0-4294967293, NONE
5	The POINT CODE is the label. NETWORK field contains the SS7 network ID number for the point code, which is logically connected to the platform system through the M3UA signaling gateway. Valid range: 0-255 **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID must not all be set to zero (that is 0-0-0)
6	CLUSTER field contains the SS7 cluster ID number for the point code, which is logically connected to the platform system through the M3UA signaling gateway. Valid range: 0-255 **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID must not all be set to zero (that is 0-0-0)
7	MEMBER field contains the SS7 member ID number for the point code, which is logically connected to the platform system through the M3UA signaling gateway. Valid range: 0-255 **Note:** The NETWORK ID, CLUSTER ID, and MEMBER ID must not all be set to zero (that is 0-0-0)

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7.173 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (ITU)

7.173.1 Oveview

Use this form to provision Remote Application Server. Field 1 and field 4 cannot be updated. The remote AS should be DOWN or INACTIVE when updating other fields of this form.

7.173.2 Illustration

Figure 7-130 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (ITU)

```
Screen 1 of 1
        M3UA REMOTE APPLICATION SERVER (RAS) FORM

*>  1. REMOTE AS INDEX                    ____________
    2. REMOTE AS CLLI                     ____________
    3. REMOTE APPLICATION SERVER MODE     ____________
    4. ROUTING CONTEXT                    ____________
    5. POINT CODE                         ____________


REMOTE AS INDEX. Enter a value 1 to 20.
```

7.173.3 Supported platforms

All

7.173.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.173.5 Description of fields

The following table defines the fields in the M3UA REMOTE APPLICATION SERVER (RAS) FORM.

Table 7-130 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (ITU) field description

Field	Description
1	The REMOTE AS INDEX field specifies the application server index number. Valid values: 1-20
2	The REMOTE AS CLLI field specifies the common language location identifier for the application server.

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Table 7-130 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (ITU) field description (continued)

Field	Description
3	The REMOTE APPLICATION SERVER MODE field specifies the traffic mode of the remote application server. The value L is for load share and the value O is for override.
4	The ROUTING CONTEXT field specifies the context used for routing. Valid values: 0-4294967293, NONE
5	The POINT CODE is the label.

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7.174 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (CHN)

7.174.1 Overview

Use this form to provision Remote Application Server. Field 1 and field 4 cannot be updated. The remote AS should be DOWN or INACTIVE when updating other fields of this form.

7.174.2 Illustration

Figure 7-131 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (CHN)

```
Screen 1 of 1
       M3UA REMOTE APPLICATION SERVER (RAS) FORM

*>  1. REMOTE AS INDEX                    ____________
    2. REMOTE AS CLLI                     ____________
    3. REMOTE APPLICATION SERVER MODE     ____________
    4. ROUTING CONTEXT                    ____________
    POINT CODE
    5. MAIN AREA                     _________________
    6. SUB AREA                      _________________
    7. POINT                         _________________


REMOTE AS INDEX. Enter a value 1-20.
```

7.174.3 Supported platforms

All

7.174.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.174.5 Description of fields

Table 7-131 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (CHN) field description

Field	Description
1	The REMOTE AS INDEX field specifies the application server index number. Valid values: 1-128
2	The REMOTE AS CLLI field specifies the common language location identifier for the application server.

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Table 7-131 Form 12.8: M3UA REMOTE APPLICATION SERVER (RAS) FORM (CHN) field description (continued)

Field	Description
3	The REMOTE APPLICATION SERVER MODE field specifies the traffic mode of the remote application server. The value L is for load share and the value O is for override.
4	The ROUTING CONTEXT field specifies the context used for routing. Valid values: 0-4294967293, NONE
5	The POINT CODE is the label.

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7.175 Form 12.9: M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM

7.175.1 Overview

Use this form to provision Remote Application Server Process. Field 1, 2, 3, 6 and 7 cannot be updated. The remote ASP should be DOWN or INACTIVE when updating other fields of this form.

7.175.2 Illustration

Figure 7-132 Form 12.9: M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM

```
Screen 1 of 1
          M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM

*>  1. REMOTE ASP INDEX           2
    2. REMOTE PORT NUMBER         8001
    3. REMOTE SCTP HOST INDEX     3
    4. NETWORK ASP INDEX          2
    5. INITIALIZATION METHOD      SE
    6. REMOTE AS INDEX            1
    7. ROUTING CONTEXT           2


REMOTE ASP INDEX. Enter a value between 1 and 20.
```

7.175.3 Supported platforms

All

7.175.4 Form dependencies

Refer to the 7.159.5 “Form dependencies” (p. 1148) section for information on inter-form checks.

7.175.5 Description of fields

Table 7-132 Form 12.9: M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM field description

Field	Description
1	The REMOTE ASP INDEX field specifies the index value of ASP. Valid values: 1-20
2	The REMOTE PORT NUMBER field specifies the port number in the ASP. Valid values: 1025, 65535

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Table 7-132 Form 12.9: M3UA REMOTE APPLICATION SERVER PROCESS (RASP) FORM field description (continued)

Field	Description
3	The REMOTE SCTP HOST INDEX field specifies the value of SCTP host index which must have been defined in Form 12.1 SCTP HOST CONFIGURATION FORM. Valid values: 1-99
4	The NETWORK ASP INDEX field specifies the value of ASP index in the network. Valid values: 1-4294967295
5	The INITIALIZATION METHOD field specifies the method used for initialization. Valid values: SE for Single Exchange mode, DE for Double Exchange mode
6	The REMOTE AS INDEX field specifies the value of AS index which must have been defined in Form 12.8 M3UA REMOTE APPLICATION SERVER FORM. Valid values: 1-20
7	The ROUTING CONTEXT field specifies the context used for routing. Valid values: 0-4294967293, NONE

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7.176 Form12.10: SIGTRAN M3UA PARAMETERS FORM

7.176.1 Overview

Use this form to view and update M3UA parameters. This form is not allowed to insert and delete.

7.176.2 Illustration

Figure 7-133 Form12.10: SIGTRAN M3UA PARAMETERS FORM

```
                                Record 1/1
Screen 1 of 1
                      SIGTRAN M3UA PARAMETERS FORM

*>1. MAX DPC CONFIG          _______
  2. MAX DPC/DAUD            ________
```

7.176.3 Supported platforms

All

7.176.4 Form dependencies

No

7.176.5 Description of fields

Table 7-133 Form12.10: SIGTRAN M3UA PARAMETERS FORM field description

Field	Description
1	The MAX DPC CONFIG field specifies maximum number of point codes that can be supported per node/cluster. Valid values: 1-1024 Default value: 128 This field is not allowed for updating in the form. If the field is changed directly in the database it will only be effective after re-initializing STSCH process. Additionally for Linux, the maximum point codes per SG supported is 256. To fully utilize the maximum number of Point Codes, multiple SGs must be supported. **Note:** A maximum of 256 PCs can be assigned to any SG (primary or alternate).

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Table 7-133 Form12.10: SIGTRAN M3UA PARAMETERS FORM field description (continued)

Field	Description
2	The MAX DPC/DAUD field specifies maximum number of point codes that can be sent in a DAUD message. The field can be updated. Valid values: 1-32 Default value: 15

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MUX service circuit handler

7.177 Overview

7.177.1 Purpose

This section provides the description of the MUX Service Circuit Handler Submenu and its forms that are used for provisioning parameters required by MUXSCH process.

7.177.2 Contents

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7.178 Submenu 16: MUX SERVICE CIRCUIT HANDLER SUBMENU

7.178.1 Purpose

The MUX SERVICE CIRCUIT HANDLER SUBMENU is the starting point for provisioning:

- MUX local host IP and port number parameters
- MUX local subsystem number parameters

Before you begin any procedure, ensure that you are familiar with the concepts and methods for using RC/V menus and forms.

7.178.2 Illustration

Figure 7-134 Submenu 16: MUX SERVICE CIRCUIT HANDLER SUBMENU

```
Screen 1 of 1
         MUX SERVICE CIRCUIT HANDLER SUBMENU

Selection  Category
[ 1]    MUX LOCAL IP CONFIGURATION FORM
[ 2]    MUX SSN CONFIGURATION FORM
```

7.178.3 Available forms

The MUX SERVICE CIRCUIT HANDLER SUBMENU contains the following forms:

- Form 16.1: MUX LOCAL HOST IP CONFIGURATION FORM
- Form 16.2: MUX SSN CONFIGURATION FORM

Note:

- Both forms support the view, insert, delete and update operations.
- A form update must be followed by level 1 initialization of MUXSCH process in order for the updated parameters to take effect.

7.178.4 Form dependencies

The following inter-form check is necessary:

- LOCAL SUBSYSTEM NUMBER 1 to 15 in the Form 16.2: MUX SSN CONFIGURATION FORM must first exist as LOCAL SUBSYSTEM NUMBER in Form 3.3.1:SUBSYSTEM NUMBER FORM of the SS7 SERVICE CIRCUIT HANDLER SUBMENU.

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7.179 Form 16.1: MUX LOCAL HOST IP CONFIGURATION FORM

7.179.1 Purpose

Use this form to provision the local host IP address, host-id, port number, Used by MUX2SCH and MUXSCH process ID parameters required by MUXSCH(s) or MUX2SCH.

7.179.2 Illustration

Figure 7-135 Form 16.1 MUX LOCAL HOST IP CONFIGURATION FORM

```
Screen 1 of 1
                      MUX LOCAL IP CONFIGURATION FORM

*> 1. LOCAL HOST IP
       169.254.192.1
*> 2. PORT NUMBER                      9000
    3. HOST ID                         0-0-1
    4. USED BY MUX2SCH                 F
    5. MUXSCH ID                       0

   WARNING: Level 1 initialization of MUXSCH(and/or MUX2SCH)
            is required for each form change to take effect.
```

7.179.3 Form dependencies

No inter-form check for this form.

7.179.4 Description of fields

Table 7-134 Form 16.1: MUX LOCAL HOST IP CONFIGURATION FORM field description

Field	Description
1	The LOCAL HOST IP field identifies the IP address of the local host. Valid values: Only valid addresses of IPv4 format are supported Default value: 0.0.0.0. Update from a valid one to 0.0.0.0 disables MUXSCH (or MUX2SCH) functionality.
2	The PORT NUMBER field identifies the local port MUXSCH (or MUX2SCH) process listens for connection requests by Java agents. Valid range: 0-65535 Default value: 0 Update to port 0 disables the MUXSCH (or MUX2SCH) functionality.
3	The HOST ID field identifies the host by an ID in the format of R-C-S (R=0 to 4, C is 0-9, S is 0-14).

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Table 7-134 Form 16.1: MUX LOCAL HOST IP CONFIGURATION FORM field description (continued)

Field	Description
4	The USED BY MUX2SCH field identifies whether this record is used by MUXSCH or MUX2SCH processes. Valid values: T(True), F (False) Default value: F
5	The MUXSCH ID field identifies the MUXSCH process ID (0 to 3). For example, MUXSCH0 process ID is 0, MUXSCH1 process ID is 1, MUXSCH2 process ID is 2, MUXSCH3 process ID is 3. If the system does not configure multiple MUXSCH processes, then ensure to populate this field with a 0.

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7.180 Form 16.2: MUX SSN CONFIGURATION FORM

7.180.1 Purpose

Use this form to provision host-id, MUXSCH process ID and up to 15 local subsystem numbers for MUXSCH(s) for each node on which MUXSCH(s) is running.

7.180.2 Illustration

Figure 7-136 Form 16.2: MUX SSN CONFIGURATION FORM

```
Screen 1 of 1
                        MUX SSN CONFIGURATION FORM
*>  1. HOST ID                          0-0-1
*>  2. MUXSCH ID                        0
    3. LOCAL SUBSYSTEM NUMBER 1         250
    4. LOCAL SUBSYSTEM NUMBER 2         0
    5. LOCAL SUBSYSTEM NUMBER 3         0
    6. LOCAL SUBSYSTEM NUMBER 4         0
    7. LOCAL SUBSYSTEM NUMBER 5         0
    8. LOCAL SUBSYSTEM NUMBER 6         0
    9. LOCAL SUBSYSTEM NUMBER 7         0
   10. LOCAL SUBSYSTEM NUMBER 8         0
   11. LOCAL SUBSYSTEM NUMBER 9         0
   12. LOCAL SUBSYSTEM NUMBER 10        0
   13. LOCAL SUBSYSTEM NUMBER 11        0
   14. LOCAL SUBSYSTEM NUMBER 12        0
   15. LOCAL SUBSYSTEM NUMBER 13        0
   16. LOCAL SUBSYSTEM NUMBER 14        0
   17. LOCAL SUBSYSTEM NUMBER 15        0

WARNING: MUXSCH level 1 init is needed for the
form change to take effect.

HOST ID in R-C-S format.
Valid values R: 0-3, C: 0-9, S: 0-14 (0 for RMS)
```

7.180.3 Form dependencies

No inter-form check for this form.

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7.180.4 Description of fields

Table 7-135 Form 16.2:MUX SSN CONFIGURATION FORM field description

Field	Description
1	The HOST ID field identifies the host by an ID in the format of R-C-S (R=0 to 4, C is 0-9, S is 0-14).
2	The MUXSCH ID field identifies the MUXSCH process ID (0 to 3). For example, MUXSCH0 process ID is 0, MUXSCH1 process ID is 1, MUXSCH2 process ID is 2, MUXSCH3 process ID is 3. If the system does not configure multiple MUXSCH processes, then ensure to populate this field with 0.
3-17	The LOCAL SUBSYSTEM NUMBER 1 through 15 fields are used to provision up to 15 local SSNs that can be used to route to MUXSCH. Valid range: 0-255 (Up to three digits) Default: 0 The entry 0 indicates that the MUX SSN is not supported.

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8 Maintenance

8.1 Overview

8.1.1 Purpose

This chapter describes the maintenance related procedures for OSPSCH.

8.1.2 Contents

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OSPSCH procedures

8.2 Overview

8.2.1 Purpose

Note: This OSPSCH section applies only to OSP.

This section describes the procedures for OSPSCH services.

8.2.2 Contents

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8.3 Procedure to turn ON/OFF the OSP level traces for OSPSCH services

8.3.1 Before you begin

Before turning ON the traces check the user and groups (linus:in) of the directories below. If not, then update as below:

```
OSPS101root#chown linus:in /vendorpackages/OSPOAM
OSPS101root#chown linus:in /vendorpackages/OSPSCH
```

8.3.2 Steps

1

Run the following commands to turn ON the traces:

```
OSPS101 linus> cd /vendorpackages/OSPSCH
OSPS101 linus> flg
```

2

Check the below debug file at the same path:

```
OSPS101 linus> ls -l /vendorpackages/OSPSCH/debug.flg
-rw-rw---- 1 linus in 20 May 23 08:25 /vendorpackages/OSPSCH/debug.flg
```

3

Run the following commands to turn OFF the traces:

```
OSPS101 linus> cd /vendorpackages/OSPSCH
OSPS101 linus> rmflg
```

4

Run the following command to check the location of traces directory:

```
OSPS101 linus> cdt OR cd /osp/local/var/trace
/osp/local/var/trace/OSPSCHXX.tra
```

END OF STEPS

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Isolating faults

8.4 Overview

8.4.1 Purpose

This section describes the procedures for isolating faults.

8.4.2 Contents

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8.6 OOS SCTP association problem isolation	1205

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8.5 Inaccessible signaling transfer point problem isolation

8.5.1 Overview

Follow the steps in this procedure to isolate problems for an inaccessible Signal Transfer Point (STP). The STP is inaccessible if all the links to the STP are down, or if the STP is OOS.

1

Enter the following input message

OP:SLK=EQP

2

Is there any link activity state INACTIVE or ACT/REST?

If	Then
Yes	Enter the following input message: **RST:SLK=a-b-c** for at least one local link. Go to .Step 3
No	Perform the steps in the section *OOS SS7 link problem isolation*

3

Enter the following input message

OP:STATUS,ASSOC

Go to Step 4

4

Is there any DESTINATION IP ADDR that is not 0.0.0.0 with STAT OOS?

If	Then
Yes	perform the procedure in section *OOS SCTP association problem isolation*.
No	go to Step 5.

5

Are all the links BLK?

If	Then
Yes	Enter the following input message: **CHG:SLK=a-b-c,UBLK** for at least one local link. Go to Step 8.
No	Go to Step 6.

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6

Are all the links EQUIP?

If	Then
Yes	Populate the Point Code Form to make SS7 links available. Refer to *MiLife Application Server System Administration Guide* section on the Point Code Form, the Link Set Form, the Interface Controller Board Form and the MTP2 Link Form. Then go to Step7.
No	Seek the next level of technical assistance.

7

Restore the link by entering the following input message: **`RST:SLK=a-b-c`**.

8

Does the STP become active?

If	Then
Yes	This procedure is complete.
No	Perform procedure in the section *OOS SCTP association problem isolation*

END OF STEPS

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8.6 OOS SCTP association problem isolation

8.6.1 Overview

Follow the steps in this procedure if the SCTP is OOS.

1

Is the Ethernet cable physically plugged in?

If	Then
Yes	Go to Step 3.
No	Connect the cable. Go to Step 2.

2

Does the association become active?

If	Then
Yes	This procedure is complete.
No	Go to Step 3

3

Verify both that the HDC Ethernet driver and the SCTP driver are correctly installed by executing the following command: **`ps -ef | grep sctpd`**. If the sctpd daemon is running, the drivers are correctly installed.

If	Then
Yes	Go to Step 5.
No	Enter **`RstS7Drivers tsuco-89`** to load the drivers. After verifying that the drivers are correctly installed, go to Step 4

4

Does the association become active?

If	Then
Yes	This procedure is complete.
No	Go to Step 5.

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5

Verify that the intended network interface is correctly provisioned by executing the following command: **`ifconfig -a interface_name`**

If	Then
Yes	Go to Step 7
No	Go to the directory */usr/net/Adax/hdc* and execute the shell script: *hdc_cfgether.sh*. Then follow the instructions to provision the network interfaces. After answering all questions, the script will create one or multiple new files called *hdc_cfg.**. One hdc-cfg.* file matches to one network interface provisioned. The (*) is the same as the HDC netwrok interface label. For example, if the network interface is hdc0, the (*) is 0. Verifying the interded networkd interface is UP by executing the following command: **`Ifconfig -a interface_name`**. Go to Step 6.

6

Does the association become active?

If	Then
Yes	This procedure is complete.
No	Then go to Step 7

7

Is the SCTP Host Form and SCTP Association Form populated correctly? Refer to the *System Administration Guide* section on the SCTP Host Form and SCTP Association Form

If	Then
Yes	Go to Step 9.
No	Populate the SCT Host and Association Forms. Then go the Step 8.

8

Does the link become active?

If	Then
Yes	This procedure is complete.
No	Go to Step 9.

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9

Look for an assert in the OMlog indicating the problem, and perform the corrective action for that problem. Refer to the *User Reference Guide*. If the problem persists, seek the next level of technical assistance.

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Backup and recovery

8.7 Overview

8.7.1 Purpose

This section describes the procedures for backup and recovery.

8.7.2 Contents

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8.8 Backup overview

8.8.1 Purpose

Perform backup procedures on a regular basis to ensure you can recover software that has been lost or corrupted. The 8.11 “Recovery overview” (p. 1212) section describes how to recover backed-up software in the event of failure.

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8.9 Performing a Full Backup to Directory

8.9.1 Purpose

Use the following procedure to back up platform application, along with the PostgreSQL databases to a target directory.

8.9.2 Procedure

To backup the current Enterprise Installed MCAS, assuming backup directory is located at */osp/backup* and the MCAS software is installed at */osp/3rdpty/MCASsoftware*

1

```
cd /osp/3rdpty
```

2

```
tar -zcf /osp/backup/MCASsoftware.tgz MCASsoftware
```

END OF STEPS

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8.10 Performing a Backup of PostgreSQL to Directory

8.10.1 Purpose

Use the following procedure to back up the PostgreSQL database to disk.

8.10.2 Procedure

Assuming your */BACKUP* exists or is a link to */osp/backup*

1

Run the platform PostgreSQL backup tool to backup PostgreSQL

/opt/config/bin/platdbadm -a backup

Example output:

```
mab7:/root-# /opt/config/bin/platdbadm -a backup
7897: old priority 0, new priority 5
platdbadm: NOTE: BEGIN
platdbadm: NOTE: 11:52:47 Executed by uid=0(root)
platdbadm: NOTE: 11:52:47 Backup platdb calling pg_dumpall
platdbadm: tar current configuration to /BACKUP/platdb/config.tar
platdbadm: START to backup data to /BACKUP/platdb.tgz
platdbadm: /bin/tar cfz /BACKUP/platdb.tgz  /osp/3rdpty/MASsoftware/
platdb /platdb /cs/snsps /BACKUP/platdb/platdb_backup.sql /BACKUP/platdb/config.
tar
/bin/tar: Removing leading `/' from member names
/bin/tar: Removing leading `/' from hard link targets
platdbadm: tar data to /BACKUP/platdb.tgz completed
platdbadm: NOTE: 11:53:01 Backup platdb completed
platdbadm: NOTE: COMPLETE with SUCCESS
```

```
mab7:/root-#
mab7:/root-# cd /BACKUP
mab7:/BACKUP-# ls -ltr
total 39332
-rw-r--r--. 1 root root 40275749 Mar  3 11:53 platdb.tgz
mab7:/BACKUP-#
```

END OF STEPS

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8.11 Recovery overview

8.11.1 Purpose

This section describes how to recover backed-up platform application and postgreSQL database.

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8.12 Performing a Full Recovery:

8.12.1 Purpose

Use the following procedure to recover a backuped-up platform application, along with the PostgreSQL databases.

8.12.2 Procedure

1

For OSP only.

a.) **`su - linus`**

b.) **`sepman -d stop`**

c.) **`sepman -t masinit-$HOSTNAME`**

where $HOSTNAME is the hostname of the OSP server.

Wait for sepman -t to finish stopping platform INIT.

After sepman -t is done, make sure MCAS is not running anymore.

d.) **`exit`** (exit as linus and back to root user)

2

Note: Ensure that the host is not going to restart MCAS and then perform the following:

Shutdown the MCAS platform manually in case it is still running:

`/sn/init/init.sh stop`

3

Delete the currently installed MCAS software (assuming it is installed in /osp/3rdpty/MASsoftware) and then unpack the previously backed up version from the MAS software.tgz file:

The commands to restart the platform:

a.) **`cd /osp/3rdpty`**

b.) **`ls -d MASsoftware`**

c.) **`rm -rf MASsoftware`**

d.) **`tar -xvf /osp/backup/MASsoftware.tgz`**

4

Start up MCAS:

a.) **`/sn/init/init.sh start`**

Wait for MCAS to start up and monitor the PRMlogs

b.) **`tailer PRM`**

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5

When MCAS is up, check the MCbaAS processes and make sure they are in RUNNING state:

a.) **`subshl`**

b.) **`op:init`**

c.) **`quit`**

6

Note: For OSP only.

Start up the OSP sepmand:

a.) **`su - linus`**

b.) **`sepman -d start`**

c.) **`exit`**

END OF STEPS

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8.13 Performing recovery of PostgreSQL database

8.13.1 Purpose

Use the following procedure to recover the PostgreSQL database from disk.

8.13.2 Procedure

1

Note: For OSP only.

Stop OSP Defence sepmand and stop the MCAS init SEP.

a.) **su - linus**

b.) **sepman -d stop**

c.) **sepman -t masinit-$HOSTNAME**

Where $HOSTNAME is the hostname of the OSP server

Wait for sepman -t to finish stopping MCAS INIT

After sepman -t is done, make sure platform is not running anymore

d.) **exit** (exit as linus and back to root user)

2

Note: Make sure the host is not going to restart MCAS and then perform the following:

Shutdown the MCAS platform manually in case it is still running.

/sn/init/init.sh stop

3

Restore PostgreSQL from backup

Start up PostgreSQL

a.) **. /u/ainet/.profile**

export PATH=/platdb/bin:$PATH

(This will define the necessary shell environment variables)

b.) **pgstart**

(This will start up MCAS PostgreSQL)

c.) **SNdropTable**

(This will delete all default tables/data in PostgreSQL)

Repopulate PostgreSQL from backup (assuming the backup dir is /osp/backup)

d.) **. /u/ainet/.profile**

export PATH=/platdb/bin :$PATH

e.) **cd /**

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From the platdb.tgz file, extract the platdb_backup.sql file

f.) **tar -xf /BACKUP/platdb.tgz BACKUP/platdb/platdb_backup.sql**

g.) **su -postgres**

h.) **. /u/ainet/.profile**

i.) **cd /BACKUP/platdb**

j.) **$PGHOME/bin/psql < platdb_backup.sql**

k.) **exit** (exit as postgres user and back to root user)

4

Start up the platform

a.) **/sn/init/init.sh start**

Wait for MCAS to start up and monitor the PRMlogs

b.) **tailer PRM**

5

When the platform is up, check the platform processes and make sure they are in RUNNING state

a.) **subshl**

b.) **op:init**

c.) **quit**

6

Note: For OSP only.

Start up the OSP sepmand

a.) **su - linus**

b.) **sepman -d start**

c.) **exit**

END OF STEPS

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9 Dummy chapter

9.1 description topic

9.1.1

Do not use this chapter.

This chapter is created as the topic references of MCAS documents were not working in MAB/OSP document created due to effectivity and to avoid errors.

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9.2 Form 2.20: Automatic External File Transfer Form

9.2.1 Overview

Use this form to define the target remote host(s)

9.2.2 Illustration

The following illustrates Form 2.20: Automatic External File Transfer Form

Figure 9-1 Form 2.20: Automatic External File Transfer Form

```
Screen 1 of 2
                  AUTOMATIC FILE TRANSFER FORM

*>  1. REMOTE SYSTEM INDEX          1 <= [1..10]
    2. DISTRIBUTION METHOD          PR <= [PR = priority, RR = round_robin]
    3. PROTOCOL                      SCP  <= [SFTP, SCP]
    4. NUMBER OF RETRIES              1  <= [0..3]
    5. RETRY INTERVAL                 10 <= [5..300] minutes
    6. BACKUP FILE RETENTION INTERVAL 7 <= [1..7] days
    7. REMOTE HOST LOGIN               scncraft

PRIORITY  REMOTE HOST NAME
    1)   8._____________________________________________
    2)   9._____________________________________________
    3)  10._____________________________________________
    4)  11._____________________________________________
    5)  12._____________________________________________
    6)  13._____________________________________________


Enter Review, Next, Former, Change-insert, Validate, screen#, or Print:
```

9.2.3 Parameters

The Automatic External File Transfer Form supports the following parameters:

- Remote System Index: an index 1-10 to identify a set of remote systems
- Distribution Method: either PR (priority) or RR (round robin)
- Protocol: SFTP, SCP
- Number of Retries: a maximum of three retry attempts are allowed to transfer files, range 0-3
- Retry Interval: interval before platform retry, in minutes, range 5-300
- Backup File Retention Interval: days to store successfully sent files attempts, range 1-7
- Remote Host Login: login used for all Hosts associated with this index

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Priority will be designated by Host ordering. RCV will automatically number the Hosts from 1-16, which will indicate the priority.

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9.3 Form 2.21 USL NODE INFORMATION TABLE FORM

9.3.1 Overview

Use this form to complete the following tasks:

- Create a profile of the node to be used by upstream network management system.

9.3.2 Illustration

Figure 9-2 Form 2.21 USL NODE INFORMATION TABLE FORM

```
Screen 1 of 1           USL NODE INFORMATION TABLE FORM

*>  1. NODE ID                      ___
    2. VENDOR NAME                  _____________________________
    3. COMPANY NAME                 _____________________________
    4. SUBNET WORK                  __________
    5. IRP AGENT                    __________
    6. LOCAL SUBNET                 __________
    7. MANAGEMENT NODE NAME         _________________________
    8. MANAGEMENT ELEMENT NAME      _________________________
```

9.3.3 Description of fields for USL NODE INFORMATION TABLE FORM

The following table defines the fields in the USL NODE INFORMATION TABLE FORM. Refer to Figure 9-2, “Form 2.21 USL NODE INFORMATION TABLE FORM” (p. 1220) for an illustration.

Note: Only ONE (1) USL NODE INFORMATION TABLE can exists.

Table 9-1 Form 2.21 USL NODE INFORMATION TABLE FORM field descriptions

Field	Description
2	VENDOR NAME - Name of the manufacture of the node. Character string of 30.
3	COMPANY NAME – Name of the company that owns the node. Character string of 30.
4	SUBNET WORK – The subnet that the node is in. Character string of 10.
5	IRP AGENT – The IRP agent. Character string of 10.
6	LOCAL SUBNET – The local subnet that the node is on. Character string of 10
7	MANAGEMENT NODE NAME – The node name. Character string of 25.
8	MANAGEMENT ELEMENT NAME – The element name. Character string of 25.

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For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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9.4 Form 2.22 USL NODE EQUIPMENT TABLE FORM

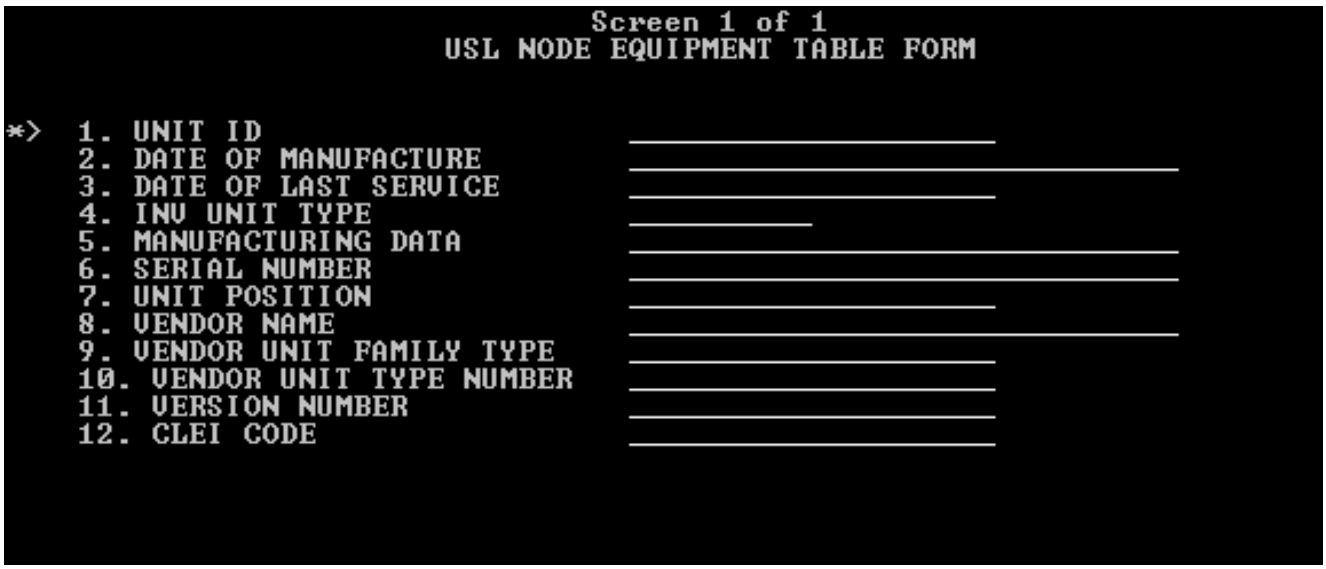
9.4.1 Overview

Use this form to complete the following tasks:

- Create a profile and track inventory information on a given node.

9.4.2 Illustration

Figure 9-3 Form 2.22 USL NODE EQUIPMENT TABLE FORM



9.4.3 Description of fields for USL NODE EQUIPMENT TABLE FORM

The following table defines the fields in the USL NODE EQUIPMENT TABLE FORM. Refer to Figure 9-3, “Form 2.22 USL NODE EQUIPMENT TABLE FORM” (p. 1222) for an illustration.

Table 9-2 Form 2.22 USL NODE EQUIPMENT TABLE FORM field descriptions

Field	Description
1	UNIT ID – Name+value can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing(parent) object instance. Character string of 20.
2	DATE OF MANUFACTURE – Date of manufacture of inventory unit. Character string of 20.
3	DATE OF LAST SERVICE –Date of last service or repair of inventory unit. Character string of 20.

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Table 9-2 Form 2.22 USL NODE EQUIPMENT TABLE FORM field descriptions (continued)

Field	Description
4	INV UNIT TYPE – Type of inventory unit(HW,FW). Character string of 10.
5	MANUFACTURING DATA –Manufacture specific data of inventory unit. Character string of 30.
6	SERIAL NUMBER – The serial number of inventory unit. Character string of 30.
7	UNIT POSITION –Position of inventory unit(Rack, shelf, slot). Character string of 20.
8	VENDOR NAME –Name of inventory unit vendor. Character string of 30.
9	VENDOR UNIT FAMILY TYPE – Mnemonic of inventory unit family type(e.g. Fan, PSU) assigned by vendor. Character string of 20.
10	VENDOR UNIT TYPE NUMBER – A vendor/manufacturer defined and assigned number which uniquely identifies the unit type and version(used for replacing HW units, spares) Character string of 20.
11	VERSION NUMBER – The version number of the unit. Character string of 20.
12	CLEI CODE – The CLEI code of the equipment. Character string of 20.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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9.5 Form 2.23: UNIQUE ALARM CODE FORM

9.5.1 Overview

Use this form to complete one or more of the following tasks:

- provision the leading digit to be used for platform-generated unique alarm codes.
- provision the leading digit to be used for application-generated alarm codes for each application on the platform.

Any alphanumeric character can be entered for the leading digit. The default value for the leading digit for platform-generated unique alarm codes is "9".

Note: This form cannot be provisioned using SNMP.

9.5.2 Illustration

Figure 9-4 Form 2.23: UNIQUE ALARM CODE FORM

```
                        Record 1/1
Screen 1 of 1       UNIQUE ALARM CODE FORM

*>  1. ALARM SOURCE       ____________________
    2. LEADING CHARACTER _
```

9.5.3 Description of fields for UNIQUE ALARM CODE FORM

The following table defines the fields in the UNIQUE ALARM CODE FORM. Refer to Figure 9-4, “Form 2.23: UNIQUE ALARM CODE FORM” (p. 1224) for an illustration of the form.

Table 9-3 Form 2.23: UNIQUE ALARM CODE FORM Field Descriptions

Field	Description
1	The ALARM SOURCE field identifies the source of the alarm. The value can be 'PLATFORM' or the name of an installed application. To provision the leading character of application-generated alarm codes, this field should be the name of the application (case-sensitive).
2	The LEADING CHARACTER field defines the leading character of the alarm codes for the alarms from this source. The value can be any alphanumeric character (case-sensitive), but it must not be one that is already used.

9.5.4 Related information

Refer to the for more information on unique alarm codes.

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9.6 Form 2.12. JSLEE PROPERTIES FORM

9.6.1 Overview

Use this form to add, modify or delete a JSLEE property. Properties are used to provide configuration information to the JSLEE.

9.6.2 Illustration

Figure 9-5 Form 2.12 JSLEE PROPERTIES FORM

```
Screen 1 of 1
                              JSLEE PROPERTIES FORM


* 1. NAME
packetin.weblogic.url
_____________________________________________________________________________
  3. VALUE
t3://localhost:7003
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
7. DESCRIPTION
Weblogic server Url
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
```

9.6.3 Description of fields for JSLEE PROPERTIES FORM

The following table describes the fields for the JSLEE PROPERTIES FORM:

Table 9-4 JSLEE PROPERTIES FORM field descriptions

Field	Description
1	The NAME field gives the name of a JSLEE property.
2	The VALUE field defines the value of a JSLEE property.
3	The DESCRIPTION field gives the description of the JSLEE property.

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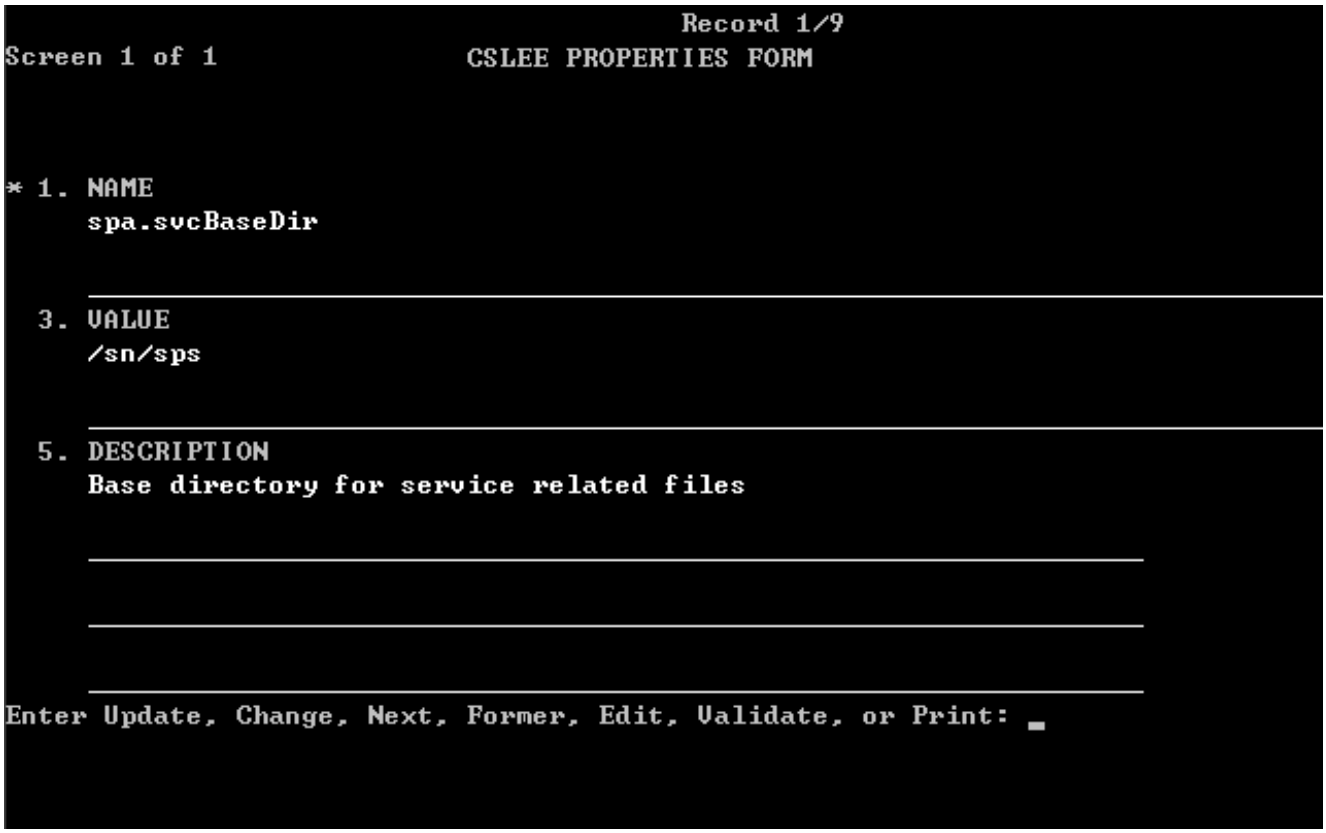
9.7 Form 2.13. CSLEE PROPERTIES FORM

9.7.1 Overview

Use this form to add, modify or delete a CSLEE property. Properties are used to provide configuration information to CSLEE library.

9.7.2 Illustration

Figure 9-6 Form 2.13 CSLEE PROPERTIES FORM



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```
Screen 1 of 1              CSLEE PROPERTIES FORM


* 1. NAME
_____________________________________________________________________________

_____________________________________________________________________________
  3. VALUE
_____________________________________________________________________________

_____________________________________________________________________________
  5. DESCRIPTION
_____________________________________________________________________


     _____________________________________________________________________

     _____________________________________________________________________

     _____________________________________________________________________
```

9.7.3 Description of fields for CSLEE PROPERTIES FORM

The following table describes the fields for the CSLEE PROPERTIES FORM:

Table 9-5 CSLEE PROPERTIES FORM field descriptions

Field	Description
1	The NAME field gives the name of a CSLEE property.
2	The VALUE field defines the value of a CSLEE property.
3	The DESCRIPTION field gives the description of the CSLEE property.

9.7.4 Description of fields for CSLEE PROPERTIES FORM

The following table describes each default CSLEE properties

Table 9-6 CSLEE PROPERTIES FORM field descriptions

Name	VALUE	Description
spa.svcBaseDir	/sn/sps	base directory for service related files
spa.datamodelDir	datamodel	directory name for datamodel files
cslee.baseDir	/sn/cslee/release	Base directory for cslee related files
cslee.configDir	config	directory name for configuration files

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Table 9-6 CSLEE PROPERTIES FORM field descriptions (continued)

Name	VALUE	Description
meas.svc.xmlfile	measurement.xml	XML file name of service measurements
meas.sub.xmlfile	SubscriberMeas.xml	XML file name of subscriber measurements
meas.sub. svcDataXmlfile	SvcData.xml	XML file name of service data populated by eSAE
meas.sub. measRecsBaseDir	/SMS	Base dir for Subscriber meas records
meas.sub. measRecsDir	subrecs	Dir for Subscriber meas records
meas.agr.interval	5	Peg message report interval in second
meas.svc.maxentry	1024	Maximum entries in a string column table

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9.8 Form 2.14. PLATFORM LOCATION FORM

9.8.1 Overview

Use this form to view or modify the office location parameters used in SNMP MIBs.

9.8.2 Illustration

Figure 9-7 Form 2.14 PLATFORM LOCATION FORM

```
Screen 1 of 1            PLATFORM LOCATION FORM

    2. SYSTEM LOCATION   loc
    3. SERVER RACK SLOT  0
    SYSTEM DESCRIPTION 4.AHE
                       5._____________________________________________________
    6. SYSTEM CONTACT    No Contact



Enter Review, Validate, or Print
```

9.8.3 Description of fields for PLATFORM LOCATION FORM

The following table describes the fields for the PLATFORM LOCATION FORM:

Table 9-7 PLATFORM LOCATION FORM field descriptions

Field	Description
1	The SYSTEM LOCATION field is used to locate the system for craft.
2	The SERVER RACK SLOT field defines the slot number in the rack.
3	The SYSTEM DESCRIPTION field describes the system used in customer network.
4	The SYSTEM CONTACT field defines the contact information for system owner.

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9.9 Form 2.15 PERFORMANCE DISPLAY INTERVAL FORM

9.9.1 Overview

Use this form to update specific Performance Display timer intervals.

The Performance Display capability allows platform display of performance data using html-based graphical display. This form allows the customer to configure the interval for the platform to collect or summarize the performance data. The interval range may be set from 1 minute to 60 minutes in minute increment. Values outside this range will not be accepted. The default will be 5 minutes. The DAILY SUMMARY TIME defines the time of the day to make the daily summary report. The WEEKLY SUMMARY DAY defines the day in a week to make the weekly summary report. If COLLECTION INHIBITED is set to Y, then the collection of data will be turned off.

9.9.2 Illustration

Figure 9-8 Form 2.15 PERFORMANCE DISPLAY INTERVAL FORM

```
Screen 1 of 1
                     PERFORMANCE DISPLAY INTERVAL FORM

>  2. DATA COLLECTION INTERVAL        5
    3. DAILY SUMMARY TIME              0200
    4. WEEKLY SUMMARY DAY              6
    5. COLLECTION INHIBITED            Y

Enter Update, Change, Edit, Validate, or Print:
```

Important! The fields on this form start with the number two (2).

9.9.3 Description of fields for PERFORMANCE DISPLAY INTERVAL FORM

The following table describes the fields for the PERFORMANCE DISPLAY INTERVAL FORM.

Table 9-8 PERFORMANCE DISPLAY INTERVAL FORM field descriptions

Field	Description
2	The DATA COLLECTION INTERVAL field specifies the interval for Performance Display monitor process PERFMON to collect related indicators. Values are from 1 to 60. Default value is 5.
3	The DAILY SUMMARY TIME field specifies the daily summary time to calculate the values for all indicators. Values are 4 digits in HHMM format, where HH is 00 to 23 for hours, and MM is 00 to 59 for minutes. Default value is 0200.

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Table 9-8 PERFORMANCE DISPLAY INTERVAL FORM field descriptions (continued)

Field	Description
4	The WEEKLY SUMMARY DAY field specifies the daily summary time to calculate the values for all indicators. Values are 1 digits in which 0 is Sunday, 1 is Monday, and so forth. Default value is 0 for Sunday.
5	The COLLECTION INHIBITED field allows the customer to inhibit the collection and report the configured indicators. Values of Y will inhibit the data collection and reporting, and values of N allow the collection and reporting. Default value is Y.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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9.10 Form 2.16 PERFORMANCE DISPLAY THRESHOLD FORM

9.10.1 Overview

Use this form to update specific Performance Display threshold for indicators.

The Performance Display capability allows platform display of performance data using html-based graphical display. This form allows the customer to change the major and minor warning threshold values for each indicator on the HTML display page. If the current value for an indicator is below MINOR THRESHOLD, the color is green. If the current value is between MINOR and MAJOR THRESHOLD, the color is shown as yellow for warning. If the current value is higher than the MAJOR THRESHOLD, then the color is shown as red to alarm the customer.

These thresholds are configurable on a per indicator basis. Defaults for the indicators are as follows:

Indicator	Yellow Threshold	Red Threshold
CPU Usage	80%	95%
Page Out rate	900	1000
Scan rate	900	1000
SPA Memory Usage	0	0[1]
Bandwidth Usage	0	0

Notes:

1. A value of 0 indicates the thresholding is turned off.

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9.10.2 Illustration

Figure 9-9 Form 2.16 PERFORMANCE DISPLAY THRESHOLD FORM

```
Screen 1 of 1
                      PERFORMANCE DISPLAY THRESHOLD FORM

*>  1. INDICATOR   CPU_USAGE
    2. MINOR THRESHOLD                 80
    3. MAJOR THRESHOLD                 95
    4. INHIBITED   N

Enter Update, Change, Next, Former, Edit, Validate, or Print:
```

9.10.3 Description of fields for PERFORMANCE DISPLAY THRESHOLD FORM

The following table describes the fields for the PERFORMANCE DISPLAY THRESHOLD FORM.

Table 9-9 PERFORMANCE DISPLAY THRESHOLD FORM field descriptions

Field	Description
1	The INDICATOR field specifies the name of the indicator following field applies to the interval for Performance Display monitor process PERFMON to collect at the defined schedule. Values are 20-character string for the name of the indicator, Current supported values are CPU_USAGE, PAGE_OUT_RATE, SCAN_RATE, BANDWIDTH_USAGE, and SPA_MEMORY_USAGE.
2	The MINOR THRESHOLD field specifies the number or percentage value when exceeded with change of the indicator color from green to yellow. Values are in unit of number or percentage depending on the indicator's unit.
3	The MAJOR THRESHOLD field specifies the number or percentage value when exceeded with change of the indicator color from yellow to red. Values are in unit of number or percentage depending on the indicator's unit.
4	The INHIBITED field allows the customer to inhibit the thresholding. The display color is black and white when INHIBITED is Y.

These thresholds are configurable on a per indicator basis. Defaults of the indicators are as follows:

Table 9-10 Performance display indicator range and threshold

Indicator	Range	Minor	Major	Unit
CPU Usage	0-100%	80%	95%	%
Page Out Rate	0-2147483647	900	1000	pages per second

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Table 9-10 Performance display indicator range and threshold (continued)

Indicator	Range	Minor	Major	Unit
Scan Rate	0-2147483647	900	1000	pages per second
SPA Memory Usage	0-2147483647	0	0[1]	Megabytes
Bandwidth Usage	0-2147483647	0	0[1]	Kilobytes

Notes:

1. A value of 0 in the Minor or Major Threshold indicates that the thresholding function is turned off and it remains as black and white all the time. The value of Major Threshold must be greater or equal to the Minor Threshold.

For detailed explanation of CPU Usage, Page Out Rate, and Scan Rate, see document under the chapter on "System Performance and Measurement".

The SPA Memory Usage counts the total dynamically allocated memory used by the SLL SPA only. C++ SPA is not covered in the count. The Bandwidth Usage counts the total Network Kilobytes used.

For database operations procedures, refer to the 7.11 “Database Operations” (p. 843) section.

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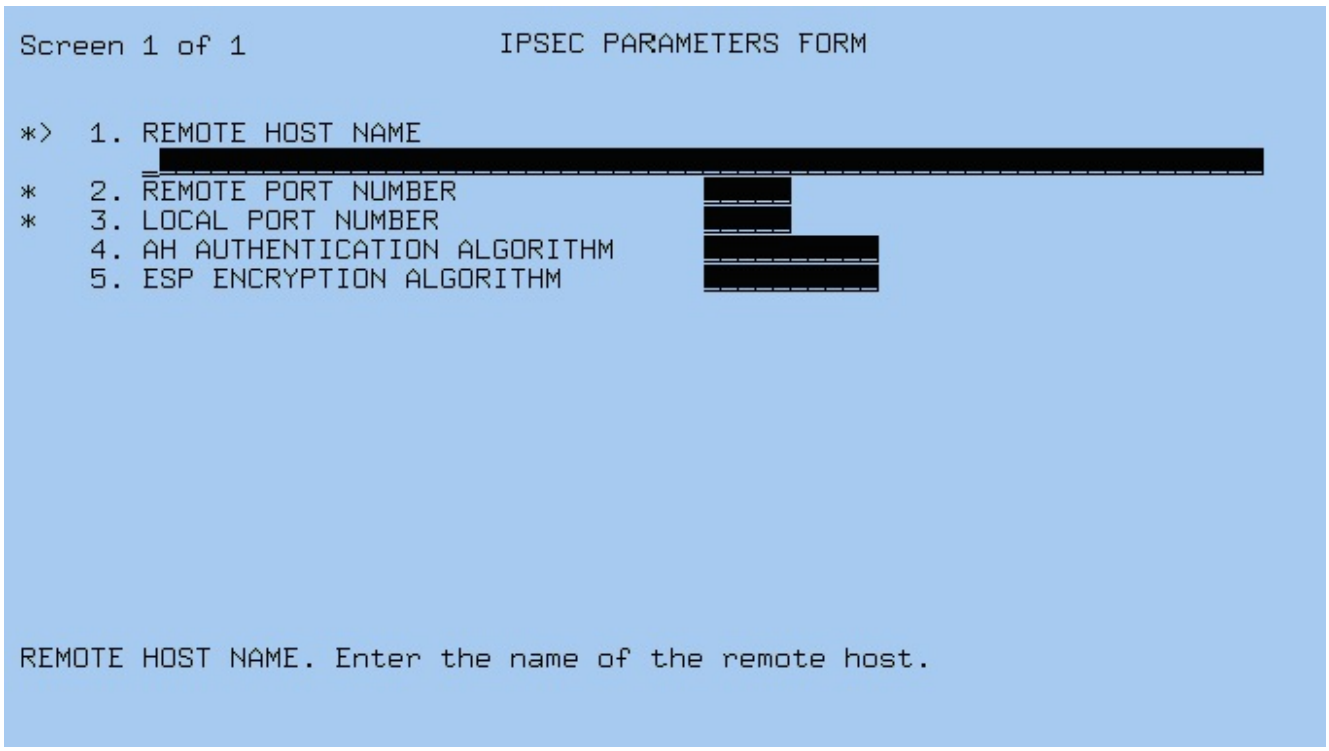
9.11 Form 2.17: IPSEC PARAMETERS FORM

9.11.1

Use this form to provision the IPsec parameters including the remote host name, remote port number, local port number, AH (Authentication Header) authentication algorithm and ESP (Encapsulating Security Payload) encryption algorithm.

Note: Synchronize the keys with the key entries in the ipseckeys file.

9.11.2 Illustration



9.11.3 Form Dependencies

AH AUTHENTICATION ALGORITHM and ESP ENCRYPTION ALGORITHM cannot both be NONE.

9.11.4 Description of fields for Form 2.17: IPSEC PARAMETERS FORM:

1	The REMOTE HOST NAME field defines the host name of the remote end of a security association. In Active-Active configuration, it should include the remote host names that connects to either lead side or active host side.

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2	The REMOTE PORT NUMBER defines the remote host's port number on which to establish an IPsec security association. Up to 5 digits, range: 1-65535 or 0 if policy applies regardless of remote port number.
3	The LOCAL PORT NUMBER defines the local port number on to establish an IPsec security association. Up to 5 digits, range: 1-65535 or 0 if policy applies regardless of remote port number.
4	The AH AUTHENTICATION ALGORITHM defines AH authentication algorithm. Valid values are NONE, MD5 or SHA-1.
5	The ESP ENCRYPTION ALGORITHM defines the ESP encryption algorithm. Valid values are NONE, DES, 3DES, BLOWFISH or AES.

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9.12 Form 2.17: IPSEC PARAMETERS FORM

9.12.1 Overview

Use this form to provision the IPsec parameters including the remote host name, remote port number, local port number, AH (Authentication Header) authentication algorithm and ESP (Encapsulating Security Payload) encryption algorithm.

Note: Synchronize the keys with the key entries in the ipseckeys file.

9.12.2 Illustration

```
Screen 1 of 1
                          IPSEC PARAMETERS FORM

*>  1. REMOTE HOST NAME
    ____________________________________________________________
*   2. REMOTE PORT NUMBER                 _____
*   3. LOCAL PORT NUMBER                  _____
    4. AH AUTHENTICATION ALGORITHM        __________
    5. ESP ENCRYPTION ALGORITHM           __________
```

9.12.3 Form Dependencies

AH AUTHENTICATION ALGORITHM and ESP ENCRYPTION ALGORITHM cannot both be NONE.

9.12.4 Description of fields for Form 2.17: IPSEC PARAMETERS FORM:

1	The REMOTE HOST NAME field defines the host name of the remote end of a security association. In Active-Active configuration, it should include the remote host names that connect to either lead side or active host side.
2	The REMOTE PORT NUMBER defines the remote host's port number on which to establish an IPsec security association. Up to 5 digits, range: 1-65535 or 0 if policy applies regardless of remote port number.
3	The LOCAL PORT NUMBER defines the local port number on to establish an IPsec security association. Up to 5 digits, range: 1-65535 or 0 if policy applies regardless of remote port number.
4	The AH AUTHENTICATION ALGORITHM defines AH authentication algorithm. Valid values are NONE, MD5 or SHA-1.
5	The ESP ENCRYPTION ALGORITHM defines the ESP encryption algorithm. Valid values are NONE, DES, 3DES, BLOWFISH or AES.

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9.13 Form2.18: USL X733 OUTPUT MESSAGE REPORT FORM

9.13.1 Overview

This form is use to turn on or off the X733 reporting of alarms in the log files. This form can only be updated. The default is off.

9.13.2 Illustration

Figure 9-10 Form 2.18: USL X733 OUTPUT MESSAGE REPORT FORM

```
Screen 1 of 1           USL X733 OUTPUT MESSAGE REPORT FORM

*>  2. TURN ON/OFF X733 REPORTING ON
```

9.13.3 Form Dependencies

You can only review/update this form

9.13.4 Description of fields for FORM 2.18 USL X733 OUTPUT MESSAGE REPORT

Table 9-11 USL X733 OUTPUT MESSAGE REPORT FORM field descriptions

Field	Description
1	To turn on/off the x733 logging in the OMlog files

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9.14 Form2.19: USL X733 OUTPUT MESSAGE DEFINITION FORM

9.14.1 Overview

This form is use to set the X733 fields being display in the log files. This form can change/delete/ insert X733 values

9.14.2 Illustration

Figure 9-11 Form 2.19: USL X733 OUTPUT MESSAGE DEFINITION FORM

```
Screen 1 of 1        USL X733 OUTPUT MESSAGE DEFINITION FORM

*>  1. OUTPUT MESSAGE NAME   _______
    2. PROBABLE CAUSE
    ____________________________________________________________________
    3. ALARM TYPE
    ____________________________________________________________________
    4. OBJECT NAME
    ____________________________
    5. SPECIFIC PROBLEM
    ____________________________________________________________________
    6. ADDITION TEXT
    ____________________________________________________________________
```

9.14.3 Form Dependencies

The output message name must be in form 2.3

9.14.4 Description of fields for Form 2.19: USL X733 OUTPUT MESSAGE DEFINITION

Table 9-12 Form 2.19: USL X733 OUTPUT MESSAGE DEFINITION field descriptions

Field	Description
1	The OMDB key for the OM
2	see the X733 probable cause definition only these values can be enter in this field
3	see the X733 alarm type definition only these values can be enter in this field
4	a object name such as the hardware unit that cause the alarm ex. ARU Any text can be enter in this field
5	a more specific name for the alarm. Any text can be enter in this field
6	any addition text. Any text can be enter in this field

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9.15 Setting SIGTRAN environment

9.15.1 Purpose

This section describes the procedure to set up SIGTRAN environment before the SIGTRAN configuration.

Perform the following steps for setting the SIGTRAN environment:

9.15.2 1. Setup SIGTRAN license keys

See 3.62 “Setting SIGTRAN license file” (p. 223) in the chapter *Administering SIGTRAN Protocols* for more details on setting up the SIGTRAN license keys.

9.15.3 2. Install the appropriate drivers

The purpose of this procedure is to setup the correct TS0 option to install the appropriate drivers (that is, SCTP and M2PA) using "RstS7Drivers" utility.

2.1. Choose the correct ts0

User needs to choose correct ts0 options based on needs to install the appropriate SIGTRAN drivers. If user is changing the ts0 option, then first the user needs to change ts0 to 0, run **`RstS7Drivers`** to remove all the drivers. Then change ts0 to your target ts0 option, repeat **`RstS7Drivers`** to make the proper driver installation.

There has been the change on the arrangement of ts0 options with the new development.

In R29 and later releases, the SIGTRAN related ts0 options are 89,90,91,92, 95, and 96. In Linux, only 89,90 are supported.

- ts0=89: boardless sctp only
- ts0=90: boardless sctp + m2pa
- ts0=91: ITU: sctp + E1
- ts0=92: ANSI: sctp + T1
- ts0=95: ITU: sctp + m2pa + E1
- ts0=96: ANSI: sctp + m2pa + T1

Command to change ts0 option

The **`ChangeConfigDb`** command can be used to change the ts0 option

Example:

To check the value of ts0:

```
n440sa41:/-# DisplayConfigDb|grep ts0

ts0             0     Telecom Server 0 uses option 0
```

To change ts0 option:

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```
n440sa41:/-# ChangeConfigDb ts0=89
```

2.2. RstS7Drivers

2.2.1. Before "RstS7Drivers"

After setup correct TS0 option, if "SCTPSCH[0-3]" or "S7TSSCH[0-3]" process is running, need to bring them down with below CEP command or STOP the MCAS platform. In live machine, you may prefer the CEP instead of stopping the MCAS platform to minimize downtime or run Astop on the system. In the live machine, you may prefer the CEP instead of "Astop" to minimize impact.

Example:

```
Subshl>inh:restart,proc=SCTPSCH,ucl
Subshl>init:proc=SCTPSCH,level=1,ucl
Subshl>inh:restart,proc=S7TSSCH,ucl
Subshl>init:proc=S7TSSCH,level=1
```

or run

```
n440sa41:/-# /etc/Astop
```

If you prefer to STOP the MCAS platform, then go to the OSP to shutdown the MCAS platform by running the following commands:

1. **su - linus**
2. **sepman -d stop**
3. **sepman -t masinit-$HOSTNAME**

   where $HOSTNAME is the hostname of the OSP server.

   Wait for the sepman -t to finishing stopping platform INIT After sepman -t is done, ensure MCAS is not running anymore.
4. **exit** (exit as linus and back to root user)
5. **/sn/init/init.sh stop**
6. **ps -afe**

   There should be no Platform processing running like MSGH, MHRORIC, DBMON, DBNI, CSOP and so on.

2.2.2. Start "RstS7Drivers"

```
n440sa41:/-#RstS7Drivers
```

2.2.3 After "RstS7Drivers"

After "RstS7Drivers" complete successfully and if it is a Linux system, then the STSCH[0-3] and SCTPSCH[0-3] process has to be bought up as:

a) Enable SCTPSCH[0-3] and STSCH[3] from */sn/init/initlist* file.

Example:

```
#ChangeInitlist enable STSCH
#ChangeInitlist enable SCTPSCH
```


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b) subshl> set:runlvl=100;

You need to recover the processes if you used a CEP to bring them down before "RstS7Drivers".

Subshl>set:runlvl=100; (You may have other unwanted processes brought up, then you have to bring them down).

Or you can recover the system with the following command if */etc/Astop* was issued:

n440sa41:/-# /etc/Astart

Drivers list

The following are the list of drivers the user may observe after running the above commands.

at002s01c09h0:/sn/log-# lsmod|grep streams

```
streams_sctp         1296888  0
streams_strmip         78768  0
ipv6                  410017  84 streams_strmip
streams_a_m2pa        123584  0
streams              1170012  9
streams_sctp,streams_strmip,streams_a_m2pa
```

Or you can recover the system with the following command if the OSP was asked to STOP the MCAS software:

Go to OSP to start up the MCAS again after the shutdown and run the following commands:

1. **su - linus**
2. **sepman -d start**
3. **exit**

At this point, wait for the platform to start up by monitoring the OMlogs.

9.15.4 3. Setup the appropriate IP address and IP route for SIGTRAN traffic

Static route setup

Configure static route via the */etc/sysconfig/network-scripts/route-e** file.

Sample static route setup:

Example:

If "10.1.1.0/24" is far end, "10.241.1.94" is the gateway IP and "eth0.31" is the local IP interface

/etc/sysconfig/network-scripts/route-eth0.31:
10.1.1.0/24 via 10.241.1.94 dev eth0.31

If multi-homing is used, the provisioning of static route for eth1.32 interface is required. Eth0.31 interface will be used as the primary path and eth1.32 interface is used as the secondary path.

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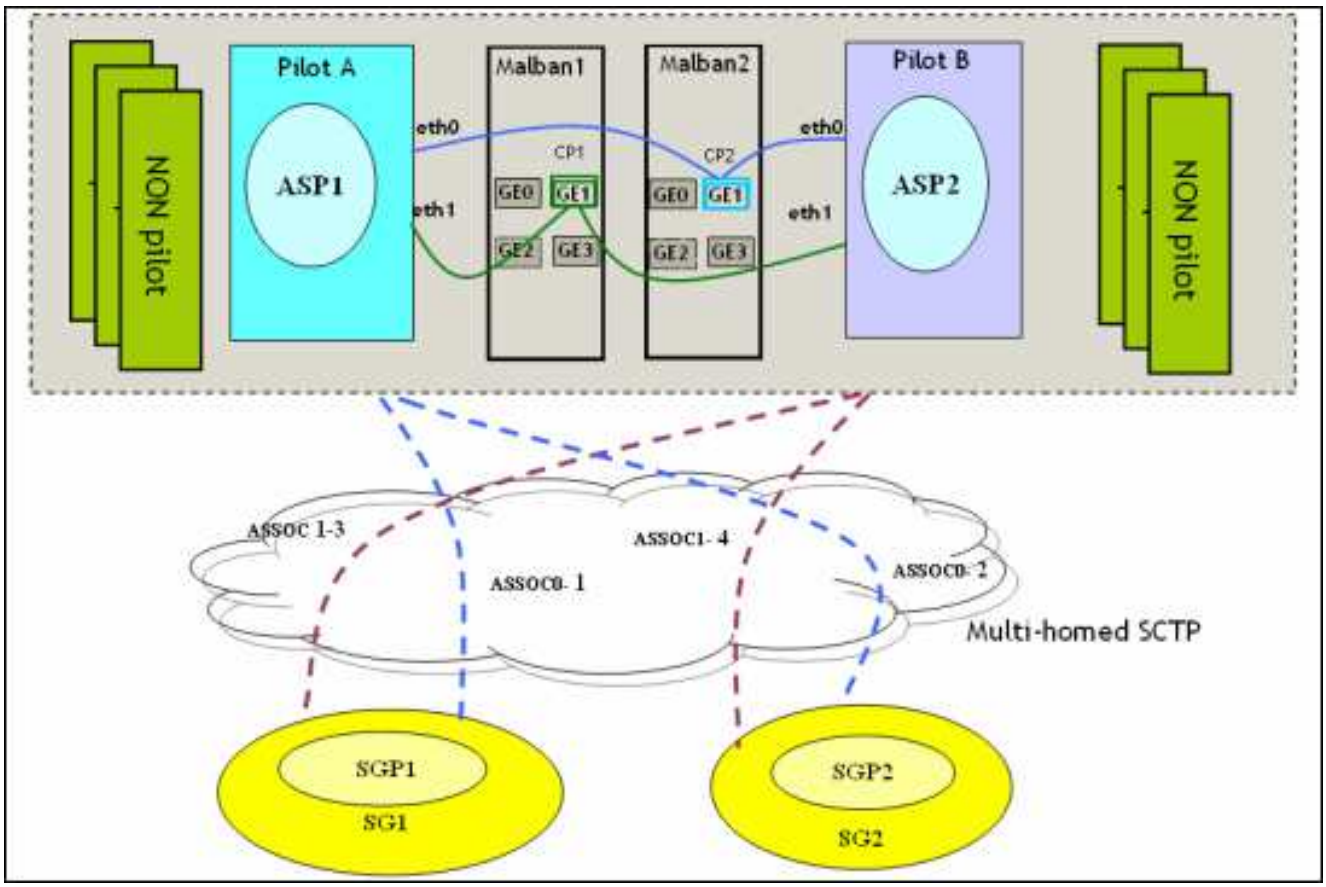
9.15.5 SIGTRAN M3UA network setup

For platform, the SIGTRAN network configuration in the Figure 3-14, “SIGTRAN M3UA network setup” (p. 215) is tested and verified.

Figure 9-12 SIGTRAN M3UA network setup



9.15.6 SIGTRAN M2PA network setup

For platform, the SIGTRAN network configuration in the Figure 3-15, “SIGTRAN M2PA network setup” (p. 216) is tested and verified.

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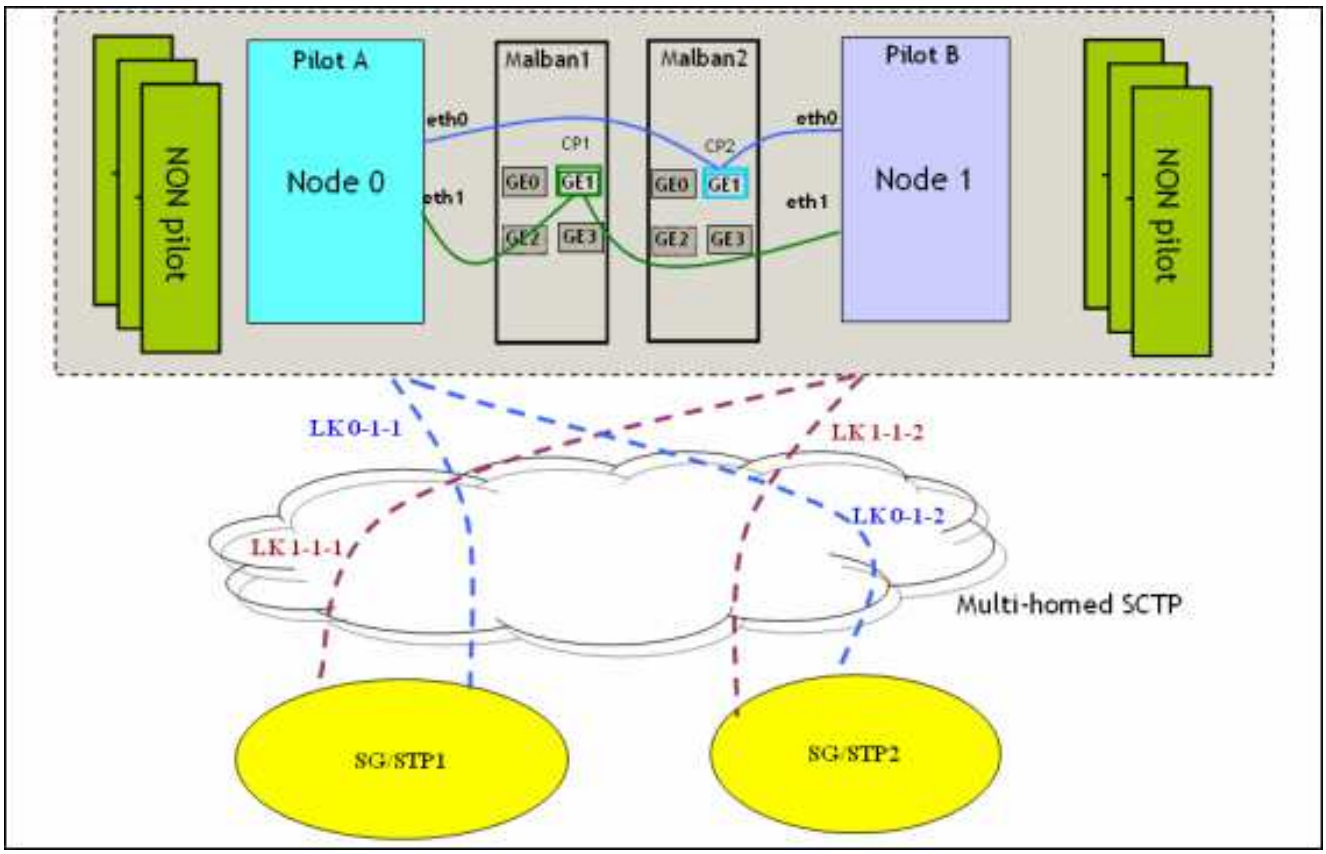
Figure 9-13 SIGTRAN M2PA network setup



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9.16 Submenu 6.2: SERVICE MANAGEMENT INTERFACE SUBMENU

9.16.1 Overview

SERVICE MANAGEMENT INTERFACE SUBMENU is the starting point for performing the following tasks:

- Configuring Service Management Interface (SMI)
- Configuring SMI for services that handle provisioning requests (self-commit applications).
- Configuring Provisioning Function (PF)

9.16.2 Illustration

Figure 9-14 Submenu 6.2: SERVICE MANAGEMENT INTERFACE SUBMENU

```
Screen 1 of 1
                            SERVICE MANAGEMENT INTERFACE SUBMENU

Selection    Category
[  1]        SMI FORM
[  2]        SMI SPA PARAMETERS FORM
[  3]        SMI CORBA PARAMETERS FORM
[  4]        SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM
```

9.16.3 Available forms

The SERVICE MANAGEMENT INTERFACE SUBMENU contains the following forms

- 7.137 “Form 6.2.1: SMI FORM” (p. 1117)
- 7.138 “Form 6.2.2: SMI SPA PARAMETERS FORM” (p. 1118)
- 7.139 “Form 6.2.3: SMI CORBA PARAMETERS FORM” (p. 1120)
- 7.140 “Form 6.2.4 SMI SSLIOP SUPPORT TYPE CONFIGURATION FORM” (p. 1121)

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9.17 Form 6.2.1: SMI FORM

9.17.1 Overview

Use Form 6.2.1 SMI form to configure SMI and provides the additional information required to support SMI-specific transactions and logical connections.

9.17.2 Illustration

Figure 9-15 Form 6.2.1: SMI FORM

```
Screen 1 of 1
                                        SMI FORM
* 1) LOGICAL NAME
  2) LOCAL PORT
  3) USER NAME
  4) PASSWORD
  5) PROVIDER URL
                    ____________________________________
  6) HTTP STRING
                  GET /SessionManager.ref HTTP/1.0
```

9.17.3 Form Dependencies

The composite key Logical_Name/Protocol must pre-exist in the Form 10.1.1.TCP/IP Services Form, where Protocol is SMI.

9.17.4 Description of fields

Table 9-13 Form 6.2.1: SMI FORM field description

Field	Description
1	Logical name of the Group member.
2	The local port number for which SMI connections are allowed.
3	The user name, if the connection requires a name and password.
4	The password if the connection requires a name/password.
5	PROVIDER URL is application server provider URL.
6	HTTP STRING is used during initial connection establishment with the enhanced Service Manager (eSM).

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9.18 Form 6.2.2: SMI SPA PARAMETERS FORM

9.18.1 Overview

Use the Form 6.2.2 SMI SPA PARAMETERS form to configure SMI for services that handle provisioning requests (self-commit applications).

9.18.2 Illustration

Figure 9-16 Form 6.2.2: SMI SPA PARAMETERS FORM

```
Screen 1 of 1
                            SMI SPA PARAMETERS FORM

* 1) SERVICE_NAME      _____________________________
  2) SELF_COMMIT       _
  3) TIME_OUT          ___
  4) PROV_RETRIES      ___
  5) MONITOR_CORC      _
```

9.18.3 Description of fields

Table 9-14 Form 6.2.2: SMI SPA PARAMETERS FORM field description

Field	Description
SERVICE_ NAME	SERVICE_NAME is the name of the service.
SELF_COMMIT	SELF_COMMIT signals the intention to submit a provisioning request to the service. Default: yes (y).
TIME_OUT	TIME_OUT defines time (in seconds) that SMI waits for a response from the service after submitting a provisioning request. Required only if the Self Commit field is set to y. Default: 1

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Table 9-14 Form 6.2.2: SMI SPA PARAMETERS FORM field description (continued)

Field	Description
PROV_ RETRIES	PROV_RETRIES is the number of provision failures for self-commit SPAs before the MCAS sends a "switchover request" to eSM. "Switchover requests" request the eSM to send subsequent provisioning to the mate. **For example** If the MCAS cannot communicate with the SPA to whom a provisioning request is directed (perhaps the SPA is not currently running), and results a failure. If the PROV_RETRIES field value is N, SMI sends a switchover error every Nth time it gets a failure when communicating with the SPA. Otherwise, it sends a "normal" failure back to eSM (that is, it does not request a switchover).
MONITOR_ CORC	MONITOR_CORC indicates if the service needs the platform to monitor CORC data changes. If the value is ,Y™, platform fetches the changes and send them to eSM. If the value is ,N™, platform does not monitor and fetch CORC changes. It is the service™s responsibility to monitor changes.

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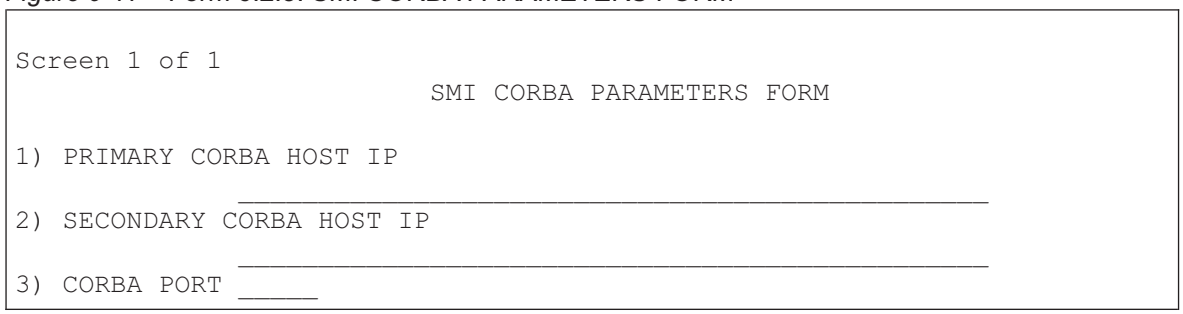
9.19 Form 6.2.3: SMI CORBA PARAMETERS FORM

9.19.1 Overview

Use this form to configure the SMI CORBA interface to listen for requests on specific endpoints. If this form is not populated, the default Primary IP Address of the MCAS host and the default Primary Port of 26435 is used. After updating this form, ensure ro reinitialize the SMI process.

9.19.2 Illustration

Figure 9-17 Form 6.2.3: SMI CORBA PARAMETERS FORM



9.19.3 Description of fields

Table 9-15 Form 6.2.3: SMI CORBA PARAMETERS FORM field description

Field	Description
PRIMARY CORBA HOST IP	PRIMARY CORBA HOST IP is the IP address of the primary CORBA interface. The field is a primary IP address on which the SMI CORBA servant is listening for requests. Valid formats: IPv4, IPv6
SECONDARY CORBA HOST IP	SECONDARY CORBA HOST IP is the IP address of the secondary CORBA interface, nnn.nnn.nnn.nnn. If specified, the CORBA servant listens on both the primary and secondary interfaces. Valid formats: IPv4, IPv6
CORBA PORT	CORBA PORT is the port number on which the SMI CORBA servant is listening (for both the primary and secondary, if specified).

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9.20 Form 6.2.4: PROVISIONING FUNCTION CONFIGURATION DATA FORM

9.20.1 Overview

Use this form to configure the PROVISIONING FUNCTION.

9.20.2 Illustration

Figure 9-18 Form 6.2.4: PROVISIONING FUNCTION CONFIGURATION DATA FORM

```
Screen 1 of 1
     PROVISIONING FUNCTION CONFIGURATION DATA FORM

   *>  1. NAME  ____________________
       2. VALUE  ____________________
       3. COMMENT ____________________
_____________________________________________________


Enter name of the configuration data.
```

9.20.3 Description of fields

Table 9-16 Form 6.2.4: PROVISIONING FUNCTION CONFIGURATION DATA FORM field description

Field	Description
NAME	The NAME of the Provisioning function to be configured.
VALUE	The VALUE of the particular Provisioning function that is used for configuration.
COMMENT	Enter any comments that are needed.

The various NAME, VALUE and COMMENT for all the PF Configuration parameters are listed here:

SOAP_HTTP_PORT	18083	Web Service HTTP Listening Port
SOAP_HTTP_THREADS	32	PF thread pool size
SOAP_MAX_KEEPALIVE_ REQUESTS	500	Maximum number of requests served on a keep-alive connection
SOAP_HTTP_BACKLOG	100	Queue size on incoming connection requests

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SOAP_KEEPALIVE_RECV_ TIMEOUT	120	Maximum idle time, in seconds, on a keep-alive connection
SOAP_KEEPALIVE_SEND_ TIMEOUT	1	Time, in seconds, PF waits for a client to acknowledge
SOAP_NUM_RETRIES_ON_ BUSY	20	Number of attempts to dispatch a new request
SOAP_RETRY_DELAY	50	Time, in milliseconds, between retries to dispatch a request
UPSTREAM_LOG_ROOT_DIR	/snlog	Directory where the PF user log file is located
UPSTREAM_LOG_ROOT_ NAME	PFHUserLog	PF user log file prefix
NUM_UPSTREAM_LOG_ FILES	5	Maximum number of PF user log files
UPSTREAM_LOG_FILE_MB_ SIZE	5	Size of each PF user log file
TCL_PACKAGE_NAME	PFH	TCL Package Name containing all scripts
TCL_PACKAGE_VERSION	1.0	TCL package version
XML_MAPPING_FILE	PFMapping.xml	Mapping file name that includes all mapping information
NUM_DATABASE_ CONNECTIONS	12	Number of database connections
USER_NAME	pfProv	User name for login
USER_PASSWORD		User password for login
USE_USER_LOGIN	false	Boolean indication of whether user sessions are in effect or not
USER_SESSION_ INACTIVITY_TIMEOUT	15	Inactivity timeout, in minutes, on user sessions
SMI_IP	127.0.0.1	IP address used when connecting to SMI
SMI_GETIOR_PORT	8001	Port used to initially connect with SMI
SMI_LOGIN	esm	Login used when connecting to SMI

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SMI_PASSWORD		Password used when connecting to SMI
SMI_SESSION_RETRY_ INTERVAL	30	Interval, in seconds, between attempts to connect to SMI
SMI_RESPONSE_TIMEOUT_ SEC	15	Timeout, in seconds, waiting for SMI asynchronous responses
PROV_SVC_NAME	HDF610	SPA name of service
CORBA_RESPONSE_ THREADS	4	Number of threads for handling responses from SMI
MAX_RETRIEVED_RECORDS	100	Maximum number of records in a table to retrieve on a query request
SPA_ROOT	/sn/sps/	Directory where SPAs are located
CLIENT_IP_1	127.0.0.1	Allowed client IP address - example
SHOW_RESPONSE_DATA	false	Boolean indication of whether ReadTable response data is logged
CHECK_THROTTLE_STATE_ SECONDS	300	Interval, in seconds, between querying the throttling state from SMI
IGNORE_THROTTLING	false	Boolean indication of whether to ignore all requests to throttle for all SPAs
BYPASS_ALL_VALIDATION	false	Boolean indication of whether validation for table-based interface is in effect or not
RELOAD_TCL_LIBRARIES	false	Boolean indication of whether TCL Libraries is loaded in each table-based interface request
TIMESTEN_DB_NAME	ttCsODBC	Timesten database name used in MAS
ORACLE_DB_NAME	oracledbODBC	Oracle database name used in MAS
POSTGRESQL_DB_NAME	postgresdbODBC	PostgreSQL database name used in MAS

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USE_MAS_TRACE	true	Boolean indication of whether the trace is logged in debuglog or PFHLog. If the value is true, the trace is logged in */snlog/debuglog*. Otherwise, it is logged in the */snlog/PFHLog*.
SOAP_HTTPS_PORT	18093	Web Service HTTPS Listening Port.
USE_HTTPS	false	Boolean indication of whether https is used or not.
USE_HTTP	true	Boolean indication of whether http is used or not.
USE_HTTP_BASIC_ AUTHENTICATION	false	Boolean indication of whether http basic authentication is used or not.
SOAP_USE_CLIENT_ AUTHENTICATION	false	Boolean indication of whether soap uses client authentication.
RP_MAX_RETRIEVE_RECS	1000	Maximum number of records PF using Rp interface retrieves using a single SQL query.
PF_CONFIG_RP	true	Boolean indication of whether PF is configured to provide Rp Service or not.
PF_LOG_RP_DATA	false	Boolean indication of whether the logging of New Data is enabled.
MAX_PROCESSING_ TIME_RP	300	The maximum processing time for Rp request: 0 to 3600, in sec.
INFO_CERT_EXPIRATION_ RANGE	30	The number of days for the expiration of digital cert for INFO ALARM.
MINOR_CERT_EXPIRATION_ RANGE	15	The number of days for the expiration of digital cert for MINOR ALARM.
MAJOR_CERT_EXPIRATION_ RANGE	10	The number of days for the expiration of digital cert for MAJOR ALARM.

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CRITICAL_CERT_ EXPIRATION_RANGE	5	The number of days for the expiration of digital cert for CRITICAL ALARM.
MAJOR_CERT_EXPIRATION_ RANGE	10	The number of days for the expiration of digital cert for MAJOR ALARM.
PASSWORD_OF_SERVER_ CERT_KEY	pf123	The password of server certificate key.

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9.21 Form 6.4.1 SNMP MANAGER CONFIGURATION FORM

9.21.1 Overview

Use this form to add a new manager configuration station.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also . The provisioned manager is also for ASR JMXGateway. SNMPMON is responsible for changing the associated configuration file for ASR JMXGateway, and restart them then.

9.21.2 Illustration

Figure 9-19 Form 6.4.1 SNMP MANAGER CONFIGURATION FORM

```
Screen 1 of 1
                        SNMP MANAGER CONFIGURATION FORM

* 1) HOST NAME        ____________________________________
* 2) IP ADDRESS       ____________________________________
* 3) PORT             _____
  4) NOTIFY TYPE      _



Enter the hostname upto 58  characters.
```

9.21.3 Description of fields

Table 9-17 Form 6.4.1 SNMP MANAGER CONFIGURATION FORM field description

Field	Description
1	HOST NAME is the host name of the node you want to designate as the SNMP Manager.
2	IP ADDRESS is the IP address of the host. Valid format: IPv4, IPv6
3	PORT is the destination port of the manager node that you want to send INFORMS/TRAPS.
4	NOTIFY TYPE are I for INFORM, T for TRAPs.

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9.22 Form 6.4.2 SNMP TREE CONFIGURATION FORM

9.22.1 Overview

Use this form to provision a new SNMP view subtree for view-based access control.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also . This form is used to define several different views separately for platform, ASR MIBs. For platform view, it will include MIBII and host resources MIB by default.

When SNMPMON is configured to start up proxy netsnmp daemon, field "VIEW NAME" cannot be set to 'masview', 'mib2view'. The two values used are reserved for internal use.

9.22.2 Illustration

Figure 9-20 Form 6.4.2 SNMP TREE CONFIGURATION FORM

```
Screen 1 of 1
                          SNMP TREE CONFIGURATION FORM

* 1) VIEW NAME _____________________
  2) OID       ____________________________________________________
  3) OID       ____________________________________________________


Unique View name upto 20 characters.
```

9.22.3 Description of fields

Table 9-18 Form 6.4.2 SNMP TREE CONFIGURATION FORM field description

Field	Description
1	VIEW NAME is a human readable string representing the name of this family of view subtree.
2, 3	OID (OBJECT IDENTIFIER) identifies a sub tree of the MIB.

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9.23 Form 6.4.3 SNMP GROUP CONFIGURATION FORM

9.23.1 Overview

Use this form to add a new SNMP Group.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also . This form is used to generate the group and access control definition in proxy netsnmp daemon configuration file.

When SNMPMON is configured to start up proxy netsnmp daemon, the provisioning constraints are as follows:

1. Field "GROUP NAME" cannot be set to 'masgrp', 'mib2grp'. The two values are reserved for internal use.
2. If field "SECURITY MODEL" is equal to 'usm', the field "SECURITY LEVEL" should be 'm'/'M'/'h'/'H'.

9.23.2 Illustration

Figure 9-21 Form 6.4.3 SNMP GROUP CONFIGURATION FORM

```
Screen 1 of 1
                        SNMP GROUP CONFIGURATION FORM

* 1) GROUP NAME       _____________________
  2) CONTEXT NAME     _____________________
  3) READ VIEWNAME    _____________________
  4) WRITE VIEWNAME   _____________________
  5) NOTIFY VIEWNAME  _____________________
  6) SECURITY MODEL   _____________________
  7) SECURITY LEVEL   _



Any Unique Group name upto 20 characters
```

9.23.3 Description of fields

Table 9-19 Form 6.4.3 SNMP GROUP CONFIGURATION FORM field description

Field	Description
1	GROUP NAME
2	For the current release only the Context Name of ems is supported.

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Table 9-19 Form 6.4.3 SNMP GROUP CONFIGURATION FORM field description (continued)

Field	Description
3	READ VIEWNAME is the subtree provisioned through the SNMP View Tree Configuration form which would allow SNMP Get/GetNext and GetBulk operations on that subtree.
4	WRITE VIEWNAME is the subtree provisioned through the SNMP View Tree Configuration form which would allow SNMP Set operations on that subtree.
5	NOTIFY VIEWNAME is the subtree provisioned through the SNMP View Tree Configuration form which would allow SNMP TRAPS/INFORM operations on that subtree.
6	Valid options: snmpv2c, usm
7	Valid options: L for low security, M for medium, and H for High Security

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9.24 Form 6.4.4 SNMP USER CONFIGURATION FORM

9.24.1 Overview

Use this form to add a new SNMP User.

Note: When the SNMPMON is configured, the form is used to start up and configure the proxy netsnmp daemon on mCAS IAS platform (see also *MAS/mCAS IAS System Administration, 270-700-167/270-700-270*). This form is used to generate the proxy lines in proxy netsnmpd configuration file.

When SNMPMON is configured to start up proxy netsnmp daemon, the provisioning constraints are as follows:

1. Field "USER NAME" cannot be set to 'mas', 'mib2mas', the two values are reserved for internal use.
2. If field "PRIVACY_TOKEN" is not set to '-', ensure that the length is more than 8.
3. If field "AUTH_TOKEN" is not set to '-', ensure that the length is more than 8.

9.24.2 Illustration

Figure 9-22 Form 6.4.4 SNMP USER CONFIGURATION FORM

```
Screen 1 of 1
                        SNMP USER CONFIGURATION FORM

* 1) USER NAME _____________________
* 2) HOST NAME _____________________________________________________
  3) PRIVACY TOKEN _____________________
  4) AUTH TOKEN    _____________________
  5) GROUP NAME _____________________



Enter Username, Upto 20 characters.
```

9.24.3 Description of fields

Table 9-20 SNMP USER CONFIGURATION FORM field description

Field	Description
1	User name
2	HOST NAME is the name of the manager configured using the SNMP Manager Configuration Form.

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Table 9-20 SNMP USER CONFIGURATION FORM field description (continued)

Field	Description
3	PRIVACY TOKEN is required if the group that the user is being added to belongs to HIGH Security Level. If Not a "-"l can be entered for NULL privacy token. If a privacy token, other than NULL, is entered for LOW or MEDIUM Security level, it is ignored.
4	AUTH TOKEN is required if the group that the user is being added to belongs to MEDIUM & HIGH Security Level. If Not a "-" can be entered for NULL Authentication token. If an Authentication token, other than NULL, is entered for LOW Security level, it is ignored.
5	GROUP NAME is the name of the Group configured using the SNMP Group Configuration Form.

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9.25 Form 6.4.5 X733 ALARM PROPERTIES FORM

9.25.1 Overview

Use the Form 6.4.5 X733 ALARM PROPERTIES form to view or modify the alarm properties.

9.25.2 Illustration

Figure 9-23 Form 6.4.5 X733 ALARM PROPERTIES FORM

```
Screen 1 of 1
                          X733 ALARM PROPERTIES FORM

* 1) CLIENT ID             1
  2) TABLE SIZE            10240
  3) NOTIFICATION LEVEL    3
  4) NOTIFICATION INTERVAL 0
  5) NOTIFICATION COUNT    5
```

Warning: Execute the subshl command **`upd:almtable`** when TABLE SIZE is changed to a different value.

9.25.3 Description of fields

Table 9-21 Form 6.4.5 X733 ALARM PROPERTIES FORM field description

Field	Description
1	CLIENT ID to receive Alarm Messages from the table because the table was full. Read-only
2	TABLE SIZE is the number of alarms that can be stored in the alarm table. The valid range is between 64 and 40960 entries.
3	NOTIFICATION LEVEL is the minimum severity of an alarm or alarm clears that is a candidate for sending to the management station. Valid range: 1-4. 1 for critical alarms only, 2 for Critical and Major Alarms, 3 for Critical, Major and Minor Alarms, and 4 for No Alarms.
4	The NOTIFICATION INTERVAL field is the length of the notification cycle in seconds. Valid range: 0 - 120
5	The NOTIFICATION COUNT field determines the maximum number of notifications that will be sent during a notification interval. The Valid range is between 1 and 2147483647.

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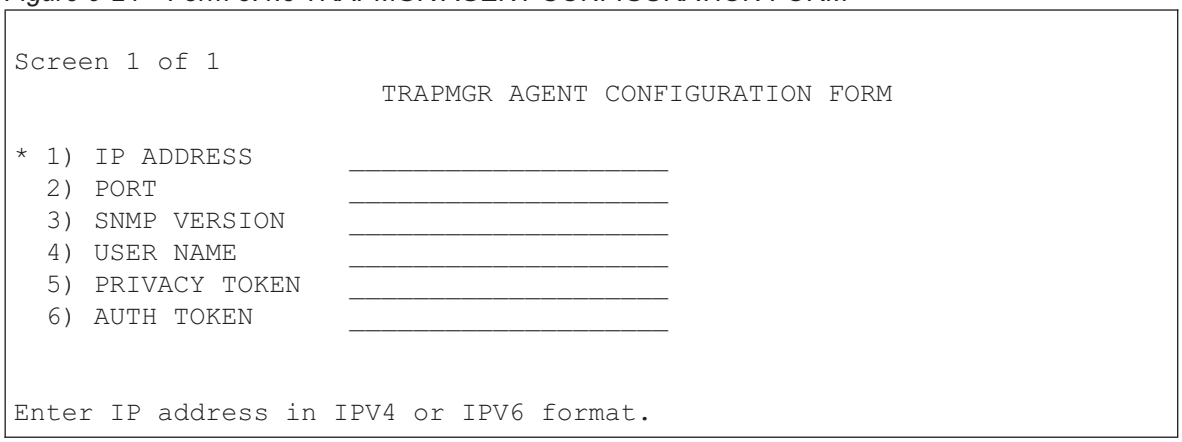
9.26 Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM

9.26.1 Overview

Use this form to add a new TRAPMGR agent.

9.26.2 Illustration

Figure 9-24 Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM



9.26.3 Description of fields

Table 9-22 Form 6.4.6 TRAPMGR AGENT CONFIGURATION FORM field description

Field	Description
1	IP ADDRESS is the IP address of the agent which is connected to the TRAPMGR. Valid format: IPv4, IPv6
2	PORT is the destination port of the agent node that you want to send GETs/SETs.
3	SNMP VERSION is the SNMP version used. Valid options: snmpv1, snmpv2c, and usm
4	USER NAME is the user name of the agent.
5	PRIVACY TOKEN is the privacy password.
6	AUTH TOKEN is the authentication password.

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9.27 Form 6.4.7: TRAPGW LISTENING PORT FORM

9.27.1 Overview

Use this form to view or modify the listening port for TRAPGW.

Note: The default value is 8011.
The value range is 1024-65535.

9.27.2 Illustration

Figure 9-25 Form 6.4.7: TRAPGW Listening Port Form

```
Screen 1 of 1
                          TRAPGW LISTENING PORT FORM

    2) LISTENING_PORT    8011
```

9.27.3 Description of fields

Table 9-23 Form 6.4.7: TRAPGW Listening Port Form field description

Field	Description
2	The LISTENING PORT field is the listening port of TRAPGW to receive ASR alarm. The valid range is 1024 to 65535 and the default is 8011.

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9.28 Form 6.4.8 TRAPGW MODULE ID CONFIGURATION FORM

9.28.1 Overview

Use this form to add a new TRAPGW module ID and name.

Note: The key value is 6 by default; it must be in range 1-255. Users can Insert/Delete/Update this form when ASR service is installed or uninstalled correspondingly. Users must ensure that the configured module name and its identifier must be consistent with the one in file */opt/proxy/mibs/smiV2/moduleName*.

9.28.2 Illustration

Figure 9-26 Form 6.4.8 TRAPGW Module ID Configuration Form

```
Screen 1 of 1
                    TRAPGW ASR MODULE ID CONFIGURATION FORM

  * 1) MODULE_ID          ___
    2) MODULE_NAME        ________________


Enter the module name upto 16 characters.
```

9.28.3 Description of fields

Table 9-24 Form 6.4.8 TRAPGW Module ID Configuration Form field description

Field	Description
1	MODULE ID field is used to match ASR trap OID when TRAPGW parse it. Each time when a new ASR service is installed, if it has MIB files defined, a new entry must be added to this form manually so that TRAPGW can convert alarms from this service.
2	MODULE NAME field must be consistent with the one in file */opt/proxy/mibs/smiV2/moduleName*. It is used by TRAPGW as “alAlarmSource” when mapping ASR alarm to platform alarm.

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9.29 Form 6.4.9 TRAPGW ALARM SEVERITY MAPPING FORM

9.29.1 Overview

Use this form to view or modify alarm severity mapping from ASR to Platform.

9.29.2 Illustration

Figure 9-27 Form 6.4.9 TRAPGW Alarm Severity Mapping Form

```
Screen 1 of 1
                    TRAPGW ASR ALARM SEVERITY MAPPING FORM

    2) INFORMATIONAL(0)   1
    3) WARNING(1)         5
    4) MAJOR(2)           6


Enter Review, Validate, or Print:
```

9.29.3 Description of fields

Table 9-25 Form 6.4.9 TRAPGW Alarm Severity Mapping Form field description

Field	Description
2	INFORMATIONAL field stands for the severity level of the platform alarm that the ASR informational alarm be mapped to by TRAPGW.
3	WARNING field stands for the severity level of the platform alarm that the ASR warning alarm be mapped to by TRAPGW.
4	MAJOR field stands for the severity level of the platform alarm that the ASR major alarm be mapped to by TRAPGW.

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