Show Commands

SYSTEM COMMANDS

connections

Syntax	**connections** [**address** *ip-address* [**interface** *interface-name*]] [**port** *port-number*] [**detail**]
Context	show>system
Description	This command displays UDP and TCP connection information. If no command line options are specified, a summary of the TCP and UDP connections displays.
Parameters	*ip-address* — Displays only the connection information for the specified IP address.

Values	ipv4-address:	a.b.c.d (host bits must be 0)
	ipv6-address:	x:x:x:x:x:x:x:x[-interface]
		x:x:x:x:x:x:d.d.d.d[-interface]
	x:	[0 — FFFF]H
	d:	[0 — 255]D
		interface: 32 characters maximum, mandatory for link local addresses

port-number — Displays only the connection information for the specified port number.

Values	0 — 65535

detail — Appends TCP statistics to the display output.

Output   **Standard Connection Output —** The following table describes the system connections output fields.

Label	Description
Proto	Displays the socket protocol, either TCP or UDP.
RecvQ	Displays the number of input packets received by the protocol.
TxmtQ	Displays the number of output packets sent by the application.
Local Address	Displays the local address of the socket. The socket port is separated by a period.
Remote Address	Displays the remote address of the socket. The socket port is separated by a period.
State	Listen − The protocol state is in the listen mode.
	Established − The protocol state is established.

Sample Output

```
A:ALA-12# show system connections
===============================================================================
Connections :
===============================================================================
Proto    RecvQ    TxmtQ Local Address        Remote Address        State
-------------------------------------------------------------------------------
TCP         0        0 0.0.0.0.21            0.0.0.0.0             LISTEN
TCP         0        0 0.0.0.0.23            0.0.0.0.0             LISTEN
TCP         0        0 0.0.0.0.179           0.0.0.0.0             LISTEN
TCP         0        0 10.0.0.xxx.51138      10.0.0.104.179        SYN_SENT
TCP         0        0 10.0.0.xxx.51139      10.0.0.91.179         SYN_SENT
TCP         0        0 10.10.10.xxx.646      0.0.0.0.0             LISTEN
TCP         0        0 10.10.10.xxx.646      10.10.10.104.49406    ESTABLISHED
TCP         0        0 11.1.0.1.51140        11.1.0.2.179          SYN_SENT
TCP         0      993 192.168.x.xxx.23      192.168.x.xx.xxxx     ESTABLISHED
UDP         0        0 0.0.0.0.123           0.0.0.0.0              ---
UDP         0        0 0.0.0.0.646           0.0.0.0.0              ---
UDP         0        0 0.0.0.0.17185         0.0.0.0.0              ---
UDP         0        0 10.10.10.xxx.646      0.0.0.0.0              ---
UDP         0        0 127.0.0.1.50130       127.0.0.1.17185       ---
-------------------------------------------------------------------------------
No. of Connections: 14
===============================================================================
A:ALA-12#
```

Sample Detailed Output

```
A:ALA-12# show system connections detail
-------------------------------------------------------------------------------
 TCP Statistics
-------------------------------------------------------------------------------
packets sent                          : 659635
data packets                          : 338982 (7435146 bytes)
data packet retransmitted             : 73 (1368 bytes)
ack-only packets                      : 320548 (140960 delayed)
URG only packet                       : 0
window probe packet                   : 0
window update packet                  : 0
control packets                       : 32
packets received                      : 658893
acks                                  : 338738 for (7435123 bytes)
duplicate acks                        : 23
ack for unsent data                   : 0
packets received in-sequence          : 334705 (5568368 bytes)
completely duplicate packet           : 2 (36 bytes)
packet with some dup. data            : 0 (0 bytes)
out-of-order packets                  : 20 (0 bytes)
packet of data after window           : 0 (0 bytes)
window probe                          : 0
window update packet                  : 3
packets received after close          : 0
discarded for bad checksum            : 0
discarded for bad header offset field : 0
discarded because packet too short    : 0
```

```
connection request                        : 4
connection accept                         : 24
connections established (including accepts) : 27
connections closed                        : 26 (including 2 drops)
embryonic connections dropped             : 0
segments updated rtt                      : 338742 (of 338747 attempts)
retransmit timeouts                       : 75
connections dropped by rexmit timeout     : 0
persist timeouts                          : 0
keepalive timeouts                        : 26
keepalive probes sent                     : 0
connections dropped by keepalive          : 1
pcb cache lookups failed                  : 0
===============================================================================
A:ALA-12#
```

cpu

Syntax	**cpu** [**sample-period** *seconds*]
Context	show>system
Description	This command displays CPU utilization per task over a sample period.
Parameters	**sample-period** *seconds* — The number of seconds over which to sample CPU task utilization.

Default 1

Values 1 — 5

Output **System CPU Output —** The following table describes the system CPU output fields.

Label	Description
CPU Utilization	The total amount of CPU time.
Name	The process or protocol name.
CPU Time (uSec)	The CPU time each process or protocol has used in the specified time.
CPU Usage	The sum of CPU usage of all the processes and protocols.
Capacity Usage	Displays the level the specified service is being utilized. When this number hits 100%, this part of the system is busied out. There may be extra CPU cycles still left for other processes, but this service is running at capacity. This column does not reflect the true CPU utilization value; that data is still available in the **CPU Usage** column. This column is the **busiest** task in each group, where **busiest** is defined as either actually running or blocked attempting to acquire a lock.

Sample Output

```
*A:cses-E11# show system cpu sample-period 2
===============================================================================
CPU Utilization (Sample period: 2 seconds)
===============================================================================
Name                           CPU Time         CPU Usage        Capacity
                                 (uSec)                             Usage
-------------------------------------------------------------------------------
BFD                                  10           ~0.00%           ~0.00%
BGP                                   0            0.00%            0.00%
CFLOWD                               61           ~0.00%           ~0.00%
Cards & Ports                     8,332            0.41%            0.08%
DHCP Server                          79           ~0.00%           ~0.00%
ICC                                 408            0.02%            0.01%
IGMP/MLD                          1,768            0.08%            0.08%
IOM                              17,197            0.85%            0.31%
IP Stack                          4,080            0.20%            0.09%
IS-IS                             1,213            0.06%            0.06%
ISA                               2,496            0.12%            0.07%
LDP                                   0            0.00%            0.00%
Logging                              32           ~0.00%           ~0.00%
MPLS/RSVP                         2,380            0.11%            0.08%
MSDP                                  0            0.00%            0.00%
Management                        5,969            0.29%            0.15%
OAM                                 907            0.04%            0.02%
OSPF                                 25           ~0.00%           ~0.00%
PIM                               5,600            0.27%            0.27%
RIP                                   0            0.00%            0.00%
RTM/Policies                          0            0.00%            0.00%
Redundancy                        3,635            0.18%            0.13%
SIM                               1,462            0.07%            0.04%
SNMP Daemon                           0            0.00%            0.00%
Services                          2,241            0.11%            0.05%
Stats                                 0            0.00%            0.00%
Subscriber Mgmt                   2,129            0.10%            0.04%
System                            8,802            0.43%            0.17%
Traffic Eng                           0            0.00%            0.00%
VRRP                                697            0.03%            0.02%
WEB Redirect                        125           ~0.00%           ~0.00%
-------------------------------------------------------------------------------
Total                         2,014,761          100.00%
   Idle                       1,945,113           96.54%
   Usage                         69,648            3.45%
Busiest Core Utilization          69,648            3.45%
===============================================================================
*A:cses-E11#
```

cron

Syntax	**cron**
Context	show>cron
Description	This command enters the show CRON context.

action

Syntax   **action** [*action-name*] [**owner** *action-owner*] **run-history** *run-state*

Context   show>cron#

Description   This command displays cron action parameters.

Parameters   **action** *action-name* — Specifies the action name.

   Values   maximum 32 characters

   owner *action-owner* — Specifies the owner name.

   Default   TiMOS CLI

   run-history *run-state* — Specifies the state of the test to be run.

   Values   executing, initializing, terminated

Output   The following table describes the show cron action output fields.

Label	Description
Action	Displays the name of the action.
Action owner	The name of the action owner.
Administrative status	`Enabled` — Administrative status is enabled
	`Disabled` — Administrative status is disabled
Script	The name of the script
Script owner	The name of the script owner.
Script source location	Displays the location of scheduled script.
Max running allowed	Displays the maximum number of allowed sessions.
Max completed run histories	Displays the maximum number of sessions previously run.
Max lifetime allowed	Displays the maximum amount of time the script may run.
Completed run histories	Displays the number of completed sessions.
Executing run histories	Displays the number of sessions in the process of executing.
Initializing run histories	Displays the number of sessions ready to run/queued but not executed.
Max time run history saved	Displays the maximum amount of time to keep the results from a script run.

Label	Description (Continued)
Last change	Displays the system time a change was made to the configuration.

Sample Output

```
*A:Redundancy# show cron action run-history terminated
===============================================================================
CRON Action Run History
===============================================================================
Action "test"
Owner "TiMOS CLI"
-------------------------------------------------------------------------------
Script Run #17
-------------------------------------------------------------------------------
Start time   : 2006/11/06 20:30:09    End time      : 2006/11/06 20:35:24
Elapsed time : 0d 00:05:15            Lifetime      : 0d 00:00:00
State        : terminated             Run exit code : noError
Result time  : 2006/11/06 20:35:24    Keep history  : 0d 00:49:57
Error time   : never
Results file : ftp://*:*@192.168.15.18/home/testlab_bgp/cron/_20061106-203008.
               out
Run exit     : Success
-------------------------------------------------------------------------------
Script Run #18
-------------------------------------------------------------------------------
Start time   : 2006/11/06 20:35:24    End time      : 2006/11/06 20:40:40
Elapsed time : 0d 00:05:16            Lifetime      : 0d 00:00:00
State        : terminated             Run exit code : noError
Result time  : 2006/11/06 20:40:40    Keep history  : 0d 00:55:13
Error time   : never
Results file : ftp://*:*@192.168.15.18/home/testlab_bgp/cron/_20061106-203523.
               out
Run exit     : Success
-------------------------------------------------------------------------------
*A:Redundancy#


*A:Redundancy# show cron action run-history executing
===============================================================================
CRON Action Run History
===============================================================================
Action "test"
Owner "TiMOS CLI"
-------------------------------------------------------------------------------
Script Run #20
-------------------------------------------------------------------------------
Start time   : 2006/11/06 20:46:00    End time      : never
Elapsed time : 0d 00:00:56            Lifetime      : 0d 00:59:04
State        : executing              Run exit code : noError
Result time  : never                  Keep history  : 0d 01:00:00
Error time   : never
Results file : ftp://*:*@192.168.15.18/home/testlab_bgp/cron/_20061106-204559.
               out
===============================================================================
*A:Redundancy#
```

```
*A:Redundancy# show cron action run-history initializing
===============================================================================
CRON Action Run History
===============================================================================
Action "test"
Owner "TiMOS CLI"
-------------------------------------------------------------------------------
Script Run #21
-------------------------------------------------------------------------------
Start time   : never                   End time     : never
Elapsed time : 0d 00:00:00             Lifetime     : 0d 01:00:00
State        : initializing            Run exit code : noError
Result time  : never                   Keep history : 0d 01:00:00
Error time   : never
Results file : none
-------------------------------------------------------------------------------
Script Run #22
-------------------------------------------------------------------------------
Start time   : never                   End time     : never
Elapsed time : 0d 00:00:00             Lifetime     : 0d 01:00:00
State        : initializing            Run exit code : noError
Result time  : never                   Keep history : 0d 01:00:00
Error time   : never
Results file : none
-------------------------------------------------------------------------------
Script Run #23
-------------------------------------------------------------------------------
Start time   : never                   End time     : never
Elapsed time : 0d 00:00:00             Lifetime     : 0d 01:00:00
State        : initializing            Run exit code : noError
Result time  : never                   Keep history : 0d 01:00:00
Error time   : never
Results file : none
===============================================================================
*A:Redundancy#
```

schedule

Syntax   **schedule** [*schedule-name*] [**owner** *schedule-owner*]

Context   show>cron#

Description   This command displays cron schedule parameters.

Parameters   *schedule-name —* Displays information for the specified scheduler name.

   owner *schedule-owner* **—** Displays information for the specified scheduler owner.

Output   The following table describes the show cron schedule output fields.

Label	Description
Schedule name	Displays the schedule name.
Schedule owner	Displays the owner name of the action.
Description	Displays the schedule's description.
Administrative status	Enabled — The administrative status is enabled.
	Disabled — Administratively disabled.
Operational status	Enabled — The operational status is enabled.
	Disabled — Operationally disabled.
Action	Displays the action name
Action owner	Displays the name of action owner.
Script	Displays the name of the script.
Script owner	Displays the name of the script.
Script owner	Displays the name of the of script owner.
Script source location	Displays the location of scheduled script.
Script results location	Displays the location where the script results have been sent.
Schedule type	Periodic — Displays a schedule which ran at a given interval.
	Calendar — Displays a schedule which ran based on a calendar.
	Oneshot — Displays a schedule which ran one time only.
Interval	Displays the interval between runs of an event.
Next scheduled run	Displays the time for the next scheduled run.
Weekday	Displays the configured weekday.
Month	Displays the configured month.
Day of Month	Displays the configured day of month.
Hour	Displays the configured hour.
Minute	Displays the configured minute.
Number of scheduled runs	Displays the number of scheduled sessions.
Last scheduled run	Displays the last scheduled session.

Label	Description (Continued)
Number of sched- uled failures	Displays the number of scheduled sessions that failed to execute.
Last scheduled failure	Displays the last scheduled session that failed to execute.
Last failure time	Displays the system time of the last failure.

```
A:sim1>show>cron schedule test
===============================================================================
CRON Schedule Information
===============================================================================
Schedule                  : test
Schedule owner            : TiMOS CLI
Description               : none
Administrative status     : enabled
Operational status        : enabled
Action                    : test
Action owner              : TiMOS CLI
Script                    : test
Script Owner              : TiMOS CLI
Script source location    : ftp://*****:******@192.168.15.1/home/testlab_bgp
                            /cron/test1.cfg
Script results location   : ftp://*****:******@192.168.15.1/home/testlab_bgp
                            /cron/res
Schedule type             : periodic
Interval                  : 0d 00:01:00 (60 seconds)
Next scheduled run        : 0d 00:00:42
Weekday                   : tuesday
Month                     : none
Day of month              : none
Hour                      : none
Minute                    : none
Number of schedule runs   : 10
Last schedule run         : 2008/01/01 17:20:52
Number of schedule failures : 0
Last schedule failure     : no error
Last failure time         : never
===============================================================================
A:sim1>show>cron
```

script

Syntax **script** [*script-name*] [**owner** *script-owner*]

Context show>cron#

Description This command displays cron script parameters.

Parameters *schedule-name* — Displays information for the specified script.

owner *schedule-owner* — Displays information for the specified script owner.

Output The following table describes the show cron script output fields.

Label	Description
Script	Displays the name of the script.
Script owner	Displays the owner name of script.
Administrative status	Enabled — Administrative status is enabled.
	Disabled — Administratively abled.
Operational status	Enabled — Operational status is enabled.
	Disabled — Operationally disabled.
Script source location	Displays the location of scheduled script.
Last script error	Displays the system time of the last error.
Last change	Displays the system time of the last change.

Sample Output

```
A:sim1>show>cron# script
===============================================================================
CRON Script Information
===============================================================================
Script                   : test
Owner name               : TiMOS CLI
Description              : asd
Administrative status    : enabled
Operational status       : enabled
Script source location   : ftp://*****:******@192.168.15.1/home/testlab_bgp
                           /cron/test1.cfg
Last script error        : none
Last change              : 2006/11/07 17:10:03
===============================================================================
A:sim1>show>cron#
```

information

Syntax **information**

Context show>system

Description This command displays general system information including basic system, SNMP server, last boot and DNS client information.

Output   **System Information Output —** The following table describes the system information output fields.

Label	Description
System Name	The configured system name.
System Contact	A text string that describes the system contact information.
System Location	A text string that describes the system location.
System Coordinates	A text string that describes the system coordinates.
System Up Time	The time since the last boot.
SNMP Port	The port number used by this node to receive SNMP request messages and to send replies.
SNMP Engine ID	The SNMP engineID to uniquely identify the SNMPv3 node.
SNMP Max Message Size	The maximum SNMP packet size generated by this node.
SNMP Admin State	Enabled — SNMP is administratively enabled and running. Disabled — SNMP is administratively shutdown and not running.
SNMP Oper State	Enabled — SNMP is operationally enabled. Disabled — SNMP is operationally disabled.
SNMP Index Boot Status	Persistent — System indexes are saved between reboots. Not Persistent — System indexes are not saved between reboots.
Telnet/SSH/FTP Admin	Displays the administrative state of the Telnet, SSH, and FTP sessions.
Telnet/SSH/FTP Oper	Displays the operational state of the Telnet, SSH, and FTP sessions.
BOF Source	The location of the BOF.
Image Source	Primary — Indicates that the directory location for runtime image file was loaded from the primary source. Secondary — Indicates that the directory location for runtime image file was loaded from the secondary source. Tertiary — Indicates that the directory location for runtime image file was loaded from the tertiary source.
Config Source	Primary — Indicates that the directory location for configuration file was loaded from the primary source. Secondary — Indicates that the directory location for configuration file was loaded from the secondary source. Tertiary — Indicates that the directory location for configuration file was loaded from the tertiary source.

Label	Description (Continued)
DNS Resolve Preference	`ipv4-only` — Dns-names are queried for A-records only. `ipv6-first` — Dns-server will be queried for AAAA-records first and a successful reply is not received, the dns-server is queried for A-records.
Last Booted Config File	The URL and filename of the last loaded configuration file.
Last Boot Cfg Version	The date and time of the last boot.
Last Boot Config Header	Displays header information such as image version, date built, date generated.
Last Boot Index Version	The version of the persistence index file read when this card was last rebooted.
Last Boot Index Header	The header of the persistence index file read when this card was last rebooted.
Last Saved Config	The location and filename of the last saved configuration file.
Time Last Saved	The date and time of the last time configuration file was saved.
Changes Since Last Save	`Yes` — There are unsaved configuration file changes. `No` — There are no unsaved configuration file changes.
Time Last Modified	The date and time of the last modification.
Max Cfg/BOF Backup Rev	The maximum number of backup revisions maintained for a configuration file. This value also applies to the number of revisions maintained for the BOF file.
Cfg-OK Script	`URL` — The location and name of the CLI script file executed following successful completion of the boot-up configuration file execution.
Cfg-OK Script Status	`Successful/Failed` — The results from the execution of the CLI script file specified in the Cfg-OK Script location. `Not used` — No CLI script file was executed.
Cfg-Fail Script	`URL` — The location and name of the CLI script file executed following a failed boot-up configuration file execution. `Not used` — No CLI script file was executed.
Cfg-Fail Script Status	`Successful/Failed` — The results from the execution of the CLI script file specified in the Cfg-Fail Script location. `Not used` — No CLI script file was executed.
Management IP Addr	The management IP address and mask.
DNS Server	The IP address of the DNS server.
DNS Domain	The DNS domain name of the node.

Label	Description (Continued)
BOF Static Routes	To — The static route destination.
	Next Hop — The next hop IP address used to reach the destination.
	Metric — Displays the priority of this static route versus other static routes.
	None — No static routes are configured.

Sample Output

```
A:Dut-F# show system information
===============================================================================
System Information
===============================================================================
System Name           : Dut-F
System Type           : 7750 SR-7 7450 ESS-7
System Version        : B-6.0.B1-6
System Contact        :
System Location       :
System Coordinates    :
System Active Slot    : A
System Up Time        : 0 days, 03:42:01.29 (hr:min:sec)

SNMP Port             : 161
SNMP Engine ID        : 0000197f00008c6cff000000
SNMP Max Message Size : 1500
SNMP Admin State      : Enabled
SNMP Oper State       : Enabled
SNMP Index Boot Status : Not Persistent
SNMP Sync State       : OK

Tel/Tel6/SSH/FTP Admin : Enabled/Disabled/Enabled/Enabled
Tel/Tel6/SSH/FTP Oper  : Up/Down/Up/Up

BOF Source            : ftp://test:test@xxx.xxx.xx.xxx/./images
Image Source          : primary
Config Source         : primary
Last Booted Config File: ftp://*:*@xxx.xxx.xx.xxx/./images/dut-f.cfg
Last Boot Cfg Version  : N/A
Last Boot Index Version: N/A
Last Saved Config      : N/A
Time Last Saved        : N/A
Changes Since Last Save: No
Max Cfg/BOF Backup Rev : 5
Cfg-OK Script          : ftp://*:*@[3000::8acb:466d]/./images/env.cfg
Cfg-OK Script Status   : failed
Cfg-Fail Script        : N/A
Cfg-Fail Script Status : not used
Management IP Addr     : xxx.xxx.xx.xxx/23
Primary DNS Server     : xxx.xxx.xx.xxx
Secondary DNS Server   : xxx.xxx.xx.xxx
Tertiary DNS Server    : N/A
DNS Domain             : sh.bel.alcatel.be
DNS Resolve Preference : ipv4-only
BOF Static Routes      :
```

```
   To                    Next Hop
   138.203.0.0/16        xxx.xxx.xx.xxx
   172.0.0.0/8           xxx.xxx.xx.xxx
ATM Location ID        : 01:00:00:00:00:00:00:00:00:00:00:00:00:00:00
ATM OAM Retry Up       : 2
ATM OAM Retry Down     : 4
ATM OAM Loopback Period: 10
===============================================================================
A:Dut-F#
```

lldp

Syntax	**lldp neighbor**
Context	show>system
Description	This command displays neighbor information for all configured ports without having to specify each individual port ID.
Parameters	**neighbor** — Displays LLDP neighbor information.

Sample Output

```
*A:Dut-C# show system lldp neighbor
Link Layer Discovery Protocol (LLDP) System Information
===============================================================================
NB = nearest-bridge   NTMPR = nearest-non-tpmr   NC = nearest-customer
===============================================================================
Port     Scope  Chassis ID         Index   Port ID    System Name
-------------------------------------------------------------------------------
1/1/1    NB     16:2f:ff:00:00:00  1       35717120   Dut-A
2/1/2    NB     16:34:ff:00:00:00  1       35782656   Dut-D
2/1/1    NB     16:36:ff:00:00:00  2       35684352   Dut-E
1/1/2    NB     16:30:ff:00:00:00  2       35749888   Dut-B
1/1/3    NB     16:30:ff:00:00:00  3       35782656   Dut-B
2/1/3    NB     16:30:ff:00:00:00  3       35815424   Dut-B
===============================================================================
Number of neighbors : 6
*A:Dut-C#


A:GHR-API# show system lldp neighbor
Link Layer Discovery Protocol (LLDP) System Information
===============================================================================
NB = nearest-bridge   NTMPR = nearest-non-tpmr   NC = nearest-customer
===============================================================================
Port     Scope  Chassis ID         Index   Port ID    System Name
-------------------------------------------------------------------------------
1/1/6    NTPMR  00:21:05:1b:bc:17  1       36044800   RXI-AMI
1/1/8    NTPMR  00:21:06:6d:bd:53  2       36110336   YOY-WOW
1/1/9    NTPMR  00:21:08:2b:ab:81  3       36143104   FRI-MON
===============================================================================
Number of neighbors : 3
```

load-balancing-alg

Syntax	**load-balancing-alg** [**detail**]
Context	show>system
Description	This command displays system load balancing settings.
Parameters	**detail** — Displays port settings.

Sample Output

```
*A:ALA-49>show>system# load-balancing-alg
===============================================================================
System-wide Load Balancing Algorithms
===============================================================================
L4  - Load Balance                     : exclude-L4
LSR - Load Balance                     : lbl-only
===============================================================================
*A:ALA-49>show>system#
```

memory-pools

Syntax	**memory-pools**
Context	show>system
Description	This command displays system memory status.
Output	**Memory Pools Output —** The following table describes memory pool output fields.

Label	Description
Name	The name of the system or process.
Max Allowed	Integer — The maximum allocated memory size.
	No Limit — No size limit.
Current Size	The current size of the memory pool.
Max So Far	The largest amount of memory pool used.
In Use	The current amount of the memory pool currently in use.
Current Total Size	The sum of the Current Size column.
Total In Use	The sum of the In Use column.
Available Memory	The amount of available memory.

Sample Output

```
A:ALA-1# show system memory-pools
===============================================================================
Memory Pools
===============================================================================
Name              Max Allowed   Current Size    Max So Far        In Use
-------------------------------------------------------------------------------
System              No limit     24,117,248     24,117,248     16,974,832
Icc                8,388,608      1,048,576      1,048,576         85,200
RTM/Policies        No limit      5,242,912      5,242,912      3,944,104
OSPF                No limit      3,145,728      3,145,728      2,617,384
MPLS/RSVP           No limit      9,769,480      9,769,480      8,173,760
LDP                 No limit              0              0              0
IS-IS               No limit              0              0              0
RIP                 No limit              0              0              0
VRRP                No limit      1,048,576      1,048,576             96
BGP                 No limit      2,097,152      2,097,152      1,624,800
Services            No limit      2,097,152      2,097,152      1,589,824
IOM                 No limit    205,226,800    205,226,800    202,962,744
SIM                 No limit      1,048,576      1,048,576            392
CFLOWD              No limit              0      1,048,576              0
IGMP                No limit              0              0              0
PIM                 No limit              0              0              0
ATM                 No limit      2,872,648      2,872,648      2,790,104
MMPI                No limit              0              0              0
MFIB                No limit              0              0              0
PIP                 No limit     79,943,024     79,943,024     78,895,248
MBUF               67,108,864     5,837,328      5,837,328      4,834,280
-------------------------------------------------------------------------------
Current Total Size :    343,495,200 bytes
Total In Use       :    324,492,768 bytes
Available Memory   :    640,178,652 bytes
===============================================================================
A:ALA-1#
```

ntp

Syntax **ntp**

Context show>system

Description This command displays NTP protocol configuration and state.

Output **Show NTP Output —** The following table describes NTP output fields.

Label	Description
Enabled	yes — NTP is enabled.
	no — NTP is disabled.
Admin Status	yes — Administrative state is enabled.

Label	Description (Continued)
	no — Administrative state is disabled.
NTP Server	Displays NTP server state of this node.
Stratum	Displays stratum level of this node.
Oper Status	yes — The operational state is enabled.
	no — The operational state is disabled.
Auth Check	Displays the authentication requirement
System Ref. ID	IP address of this node or a 4-character ASCII code showing the state.
Auth Error	Displays the number of authentication errors.
Auth Errors Ignored	Displays the number of authentication errors ignored.
Auth key ID Errors	Displays the number of key identification errors .
Auth Key Type Errors	Displays the number of authentication key type errors.
Reject	The peer is rejected and will not be used for synchronization. Rejection reasons could be the peer is unreachable, the peer is synchronized to this local server so synchronizing with it would create a sync loop, or the synchronization distance is too large. This is the normal startup state.
Invalid	The peer is not maintaining an accurate clock. This peer will not be used for synchronization.
Excess	The peer's synchronization distance is greater than ten other peers. This peer will not be used for synchronization.
Outlyer	The peer is discarded as an outlyer. This peer will not be used for synchronization.
Candidate	The peer is accepted as a possible source of synchronization.
Selected	The peer is an acceptable source of synchronization, but its synchronization distance is greater than six other peers.
Chosen	The peer is chosen as the source of synchronization.
ChosenPPS	The peer is chosen as the source of synchronization, but the actual synchronization is occurring from a pulse-per-second (PPS) signal.
Remote	The IP address of the remote NTP server or peer with which this local host is exchanging NTP packets.

Label	Description (Continued)
Reference ID	When stratum is between 0 and 15 this field shows the IP address of the remote NTP server or peer with which the remote is exchanging NTP packets. For reference clocks, this field shows the identification assigned to the clock, such as, ".GPS." For an NTP server or peer, if the client has not yet synchronized to a server/peer, the status cannot be determined and displays the following codes:
	Peer Codes:
	ACST — The association belongs to any cast server.
	AUTH — Server authentication failed. Please wait while the association is restarted.
	AUTO — Autokey sequence failed. Please wait while the association is restarted.
	BCST — The association belongs to a broadcast server.
	CRPT — Cryptographic authentication or identification failed. The details should be in the system log file or the cryptostats statistics file, if configured. No further messages will be sent to the server.
	DENY — Access denied by remote server. No further messages will be sent to the server.
	DROP — Lost peer in symmetric mode. Please wait while the association is restarted.
	RSTR — Access denied due to local policy. No further messages will be sent to the server.
	INIT — The association has not yet synchronized for the first time.
	MCST — The association belongs to a manycast server.
	NKEY — No key found. Either the key was never installed or is not trusted.
	RATE — Rate exceeded. The server has temporarily denied access because the client exceeded the rate threshold.
	RMOT — The association from a remote host running ntpdc has had unauthorized attempted access.
	STEP — A step change in system time has occurred, but the association has not yet resynchronized.
	System Codes
	INIT — The system clock has not yet synchronized for the first time.
	STEP — A step change in system time has occurred, but the system clock has not yet resynchronized.
St	Stratum level of this node.
Auth	yes — Authentication is enabled.
	no — Authentication is disabled.
Poll	Polling interval in seconds.
R	Yes — The NTP peer or server has been reached at least once in the last 8 polls.

Label	Description (Continued)
	No − The NTP peer or server has not been reached at least once in the last 8 polls.
Offset	The time between the local and remote UTC time, in milliseconds.

Sample Output

```
A:pc-40>config>system>time>ntp# show system ntp
===============================================================================
NTP Status
===============================================================================
Enabled          : Yes               Stratum           : 3
Admin Status     : up                Oper Status       : up
Server enabled   : No                Server keyId      : none
System Ref Id    : 192.168.15.221    Auth Check        : Yes
===============================================================================


A:Dut-A# show system ntp all
===============================================================================
NTP Status
===============================================================================
Configured       : Yes               Stratum           : 1
Admin Status     : up                Oper Status       : up
Server Enabled   : Yes               Server Authenticate  : No
Clock Source     : PTP
Auth Check       : Yes
Current Date & Time: 2013/03/19 20:18:50 UTC
===============================================================================
===============================================================================
NTP Active Associations
===============================================================================
State              Reference ID   St Type  A  Poll Reach    Offset(ms)
    Remote
-------------------------------------------------------------------------------
chosen             PTP            0  srvr  -  256  YYYYYYYY  0.000
    PTP
candidate          GPS            1  srvr  -  256  YYYYYYYY  -0.054
    138.120.193.198
===============================================================================
A:Dut-A#


A:pc-40>config>system>time>ntp# show system ntp detail
===============================================================================
NTP Status
===============================================================================
Enabled          : Yes               Stratum           : 3
Admin Status     : up                Oper Status       : up
Server enabled   : No                Server keyId      : none
System Ref Id    : 192.168.15.221    Auth Check        : Yes
Auth Errors      : 0                 Auth Errors Ignored  : 0
Auth Key Id Errors : 0               Auth Key Type Errors : 0
===============================================================================
```

```
NTP Configured Broadcast/Multicast Interfaces
===============================================================================
vRouter          Interface           Address          Type    Auth   Poll
-------------------------------------------------------------------------------
Base             i3/1/1              Host-ones        bcast   yes    off
management       management          224.0.1.1        mcast   no     off
Base             t2                                   bclnt   no     n/a
management       management          224.0.1.1        mclnt   no     n/a
===============================================================================
A:pc-40>config>system>time>ntp#


A:pc-40>config>system>time>ntp# show system ntp detail all
===============================================================================
NTP Status
===============================================================================
Enabled            : Yes              Stratum            : 3
Admin Status       : up               Oper Status        : up
Server enabled     : No               Server keyId       : none
System Ref Id      : 192.168.15.221   Auth Check         : Yes
Auth Errors        : 0                Auth Errors Ignored  : 0
Auth Key Id Errors : 0               Auth Key Type Errors : 0
===============================================================================
NTP Configured Broadcast/Multicast Interfaces
===============================================================================
vRouter          Interface           Address          Type    Auth   Poll
-------------------------------------------------------------------------------
Base             i3/1/1              Host-ones        bcast   yes    off
management       management          224.0.1.1        mcast   no     off
Base             t2                                   bclnt   no     n/a
management       management          224.0.1.1        mclnt   no     n/a
===============================================================================
NTP Active Associations
===============================================================================
State     Remote         Reference ID   St  Type   Auth  Poll  R  Offset
-------------------------------------------------------------------------------
reject    192.168.15.221 192.168.14.50   2  srvr   none  64    y  0.901
chosen    192.168.15.221 192.168.1.160   4  mclnt  none  64    y  1.101
===============================================================================
A:pc-40>config>system>time>ntp#
```

rollback

Syntax	**rollback**
Context	show>system
Description	This command displays rollback configuration and state.

Sample Output

```
A:dut-a_a># show system rollback
===============================================================================
Rollback Information
===============================================================================
```

```
Rollback Location          : cf1:/Rollback
Save
  Last Rollback Save Result  : In Progress, Successful or Failed
  Last Save Completion Time  : 10/15/2010 21:24:06
Revert
  In Progress                : Yes, No
  Last Revert Initiated Time : 10/15/2010 21:26:23
  Last Revert Initiated User : xyz
  Last Initiated Checkpoint  : cf1:/Rollback.rb.3
  Last Completed Revert Result : Successful or Failed
  Last Revert Completion  Time : 10/15/2010 21:27:19
===============================================================================
Rollback Files
===============================================================================
Idx     Suffix   Creation time       Release  User
          Comment
-------------------------------------------------------------------------------
latest  .rb      2010/10/15 21:24:02  9.0.R4   fred
          This checkpoint was saved after the 3 VPLS services were created
1       .rb.1    2010/10/15 21:23:58  9.0.R4   John
          John's checkpoint on Sunday
2       .rb.2    2010/10/15 21:23:52  9.0.R4   admin
          A long checkpoint comment that an operator is using to summarize
          various some of the changes that were made.   They may even have so
          much to say that they use the maximum comment size.   Notice that
          words are not chopped.
…
9       .rb.9    2010/10/14 22:00:01  9.0.R4   admin
          VPLS services 1000-2000 created
…
53      .rb.53   2010/10/14 22:10:10  9.0.R4   admin
-------------------------------------------------------------------------------
No. of Rollback Files: 10
===============================================================================
```

ptp

Syntax **ptp** [**peer** *ip-address* [**detail**] | **peers** [**detail**] | **unicast** | **statistics** | **standby**]

Context show>system

Description This command displays Precision Time Protocol (PTP) configuration and state.

Output **Show PTP Output —** The following table describes PTP output fields.

Label	Description
Pending	When the SR/ESS has initiated a request to a peer but has not yet received a response.
Granted	When the SR/ESS has initiated a request to a peer and it was granted OR a peer has made a request of the SR/ESS and it was granted.
Denied	When the SR/ESS has initiated a request to a peer but it was rejected.

Label	Description
Canceled	When a cancel message has been received from or transmitted toward a peer.
Expired	When a unicast session between the SR/ESS and the peer has expired without being renewed.

Sample Output

```
B:NS082761964# show system ptp
===============================================================================
IEEE 1588/PTP Clock Information
===============================================================================
-------------------------------------------------------------------------------
Local Clock
-------------------------------------------------------------------------------
Clock Type        : boundary         PTP Profile        : ieee1588-2008
Domain            : 0
Admin State       : up               Oper State         : up
Rx Announce Rate  : 1 pkt/2 s        Wait To Restore    : disabled
Clock Id          : 001af0fffeb2fead Clock Class        : 255 (slave-only)
Clock Accuracy    : 0xfe (unknown)   Clock Variance     : ffff (not computed)
Clock Priority1   : 128              Clock Priority2    : 128
PTP Recovery State: locked           Last Changed       : 08/24/2010 13:17:37
Frequency Offset  : +231.920 ppb
-------------------------------------------------------------------------------
Parent Clock
-------------------------------------------------------------------------------
IP Address        : 2.1.1.1
Parent Clock Id   : 001af0fffeab36ad  Remote PTP Port Number: 2
GM Clock Id       : 00b0aefffe011ca6  GM Clock Class    : 13
GM Clock Accuracy : 0xfe (unknown)    GM Clock Variance : 0x6400 (3.7E-09)
GM Clock Priority1: 128               GM Clock Priority2: 128
-------------------------------------------------------------------------------
Time Information
-------------------------------------------------------------------------------
Timescale         : PTP
Current Time      : 2013/02/11 23:05:26.6 (UTC)
Frequency Traceable : yes
Time Traceable    : yes
Time Source       : GPS
===============================================================================


B:NS082761964# show system ptp standby
===============================================================================
IEEE 1588/PTP Clock Information
===============================================================================
-------------------------------------------------------------------------------
Local Clock
-------------------------------------------------------------------------------
Clock Type        : ordinary,slave   PTP Profile        : ieee1588-2008
Domain            : 0
Admin State       : up               Oper State         : up
Clock Id          : 001af0fffeb2fead Clock Class        : 255 (slave-only)
Clock Accuracy    : 0xfe (unknown)   Clock Variance     : ffff (not computed)
```

```
Clock Priority1   : 128            Clock Priority2   : 128
PTP Port State    : listening      Last Changed      : 02/11/2013 18:09:58
PTP Recovery State: locked         Last Changed      : 08/24/2010 13:17:37
Frequency Offset  : +231.920 ppb
-------------------------------------------------------------------------------
Parent Clock
-------------------------------------------------------------------------------
IP Address        : 2.1.1.1
Parent Clock Id   : 001af0fffeab36ad  Remote PTP Port Number: 2
GM Clock Id       : 00b0aefffe011ca6  GM Clock Class    : 13
GM Clock Accuracy : 0xfe (unknown)    GM Clock Variance : 0x6400 (3.7E-09)
GM Clock Priority1: 128               GM Clock Priority2: 128
-------------------------------------------------------------------------------
Time Information
-------------------------------------------------------------------------------
Timescale         : PTP
Current Time      : 2011-08-30 15:31:42.99 UTC
Frequency Traceable : yes
Time Traceable    : yes
Time Source       : gps
===============================================================================


A:bksim1619# show system ptp statistics
===============================================================================
IEEE 1588/PTP Packet Statistics
===============================================================================

                                             Input            Output
-------------------------------------------------------------------------------
PTP Packets                                2910253           2393354
  Announce                                    9015             22682
  Sync                                      1153275            622585
  Follow Up                                      0                 0
  Delay Request                             594036           1153568
  Delay Response                           1153044            593614
  Signaling                                    883               905
    Request TLVs                             428               598
      Announce                               304               350
      Sync                                    62               124
      Delay Response                          62               124
    Grant TLVs (Granted)                     514               428
      Announce                               272               304
      Sync                                   121                62
      Delay Response                         121                62
    Grant TLVs (Rejected)                      0                 0
      Announce                                 0                 0
      Sync                                     0                 0
      Delay Response                           0                 0
    Cancel TLVs                                3                 0
      Announce                                 1                 0
      Sync                                     1                 0
      Delay Response                           1                 0
    Ack Cancel TLVs                            0                 3
      Announce                                 0                 1
      Sync                                     0                 1
      Delay Response                           0                 1
    Other TLVs                                 0                 0
  Other                                        0                 0
  Event Packets timestamped at port       215523            215371
```

```
 Event Packets timestamped in software                   0                0
 Discards                                                 0                0
   Bad domain value                                       0                0
   Alternate Master Flag Set                              0                0
   Other                                                  0                0
===============================================================================

===============================================================================
IEEE 1588/PTP Clock Recovery State Statistics
===============================================================================
State                                                             Seconds
-------------------------------------------------------------------------------
Initial                                                               136
Acquiring                                                               0
Phase-Tracking                                                          0
Locked                                                                  0
Hold-over                                                               0
===============================================================================

===============================================================================
IEEE 1588/PTP Clock Recovery Event Statistics
===============================================================================
Event                                                               Count
-------------------------------------------------------------------------------
Packet Loss                                                             0
Excessive Packet Loss                                                   0
Excessive Phase Shift Detected                                          0
Too Much Packet Delay Variation                                         0
===============================================================================

*B:Dut-B# show system ptp  statistics
===============================================================================
IEEE 1588/PTP Packet Statistics
===============================================================================
                                                      Input      Output
-------------------------------------------------------------------------------
PTP Packets                                           934483     934473
  Announce                                              2489       2507
  Sync                                                310598     310597
  Follow Up                                                0          0
  Delay Request                                      310596     310598
  Delay Response                                     310598     310596
  Signaling                                             202        175
    Request Unicast Transmission TLVs                   102        103
      Announce                                           34         37
      Sync                                               34         33
      Delay Response                                     34         33
    Grant Unicast Transmission (Accepted) TLVs         100        102
      Announce                                           34         34
      Sync                                               33         34
      Delay Response                                     33         34
    Grant Unicast Transmission (Denied) TLVs             0          0
      Announce                                            0          0
      Sync                                                0          0
      Delay Response                                      0          0
    Cancel Unicast Transmission TLVs                      0          3
      Announce                                            0          1
      Sync                                                0          1
      Delay Response                                      0          1
    Ack Cancel Unicast Transmission TLVs                  0          0
      Announce                                            0          0
```

```
        Sync                                                        0         0
          Delay Response                                            0         0
       Other TLVs                                                   0         0
     Other                                                          0         0
     Event Packets timestamped at port                         621194    621195
     Event Packets timestamped at cpm                               0         0
  Discards                                                          0         0
    Bad PTP domain                                                  0         0
    Alternate Master                                                0         0
    Other                                                           0         0
===============================================================================
IEEE 1588/PTP Clock Recovery State Statistics
===============================================================================
State                                                                   Seconds
-------------------------------------------------------------------------------
Initial                                                                     441
Acquiring                                                                   261
Phase-Tracking                                                                8
Locked                                                                     4268
Hold-over                                                                     0
===============================================================================
IEEE 1588/PTP Clock Recovery Event Statistics
===============================================================================
Event                                                     Sync Flow Delay Flow
-------------------------------------------------------------------------------
Packet Loss                                                       0         0
Excessive Packet Loss                                            0         0
Excessive Phase Shift Detected                                  0         0
Too Much Packet Delay Variation                                0         0
===============================================================================
*B:Dut-B#


A:bksim1620# show system ptp peers detail
===============================================================================
IEEE 1588/PTP Peer Information
===============================================================================
IP Address       : 3.1.1.1          Announce Direction : tx
Admin State      : n/a              G.8265.1 Priority  : n/a
Local PTP Port   : 3                PTP Port State     : master
Clock Id         : ac65fffffe000000 Remote PTP Port    : 1
Tx Timestamp Point: port            Rx Timestamp Point : port
Last Tx Port     : 1/1/1            Last Rx Port       : 1/1/1
-------------------------------------------------------------------------------
IP Address       : 5.1.1.2          Announce Direction : rx
Admin State      : up               G.8265.1 Priority  : n/a
Local PTP Port   : 1                PTP Port State     : slave
Clock Id         : ac5cfffffe000000 Remote PTP Port    : 1
GM Clock Id      : ac5cfffffe000000 GM Clock Class     : 13
GM Clock Accuracy : 0xfe (unknown)  GM Clock Variance  : ffff (not computed)
GM Clock Priority1: 128             GM Clock Priority2 : 128
Steps Removed    : 0                Parent Clock:      : yes
Tx Timestamp Point: cpm             Rx Timestamp Point : cpm
Last Tx Port     : 1/2/1            Last Rx Port       : 1/2/1
-------------------------------------------------------------------------------
IP Address       : 6.1.1.2          Announce Direction : rx+tx
Admin State      : up               G.8265.1 Priority  : n/a
Local PTP Port   : 2                PTP Port State     : passive
Clock Id         : ac5dfffffe000000 Remote PTP Port    : 2
GM Clock Id      : ac5cfffffe000000 GM Clock Class     : 13
```

```
GM Clock Accuracy : 0xfe (unknown)    GM Clock Variance  : ffff (not computed)
GM Clock Priority1: 128               GM Clock Priority2 : 128
Steps Removed     : 1                 Parent Clock       : no
Tx Timestamp Point: port              Rx Timestamp Point : port
Last Tx Port      : 3/2/1             Last Rx Port       : 3/2/1
-------------------------------------------------------------------------------
IP Address        : 11.1.1.2          Announce Direction : tx/rx
Admin State       : up                G.8265.1 Priority  : n/a
Local PTP Port    : 3                 PTP Port State     : master
Clock Id          : ac5dfffffe000000  Remote PTP Port    : 2
Alarms            :
Tx Timestamp Point: cpm               Rx Timestamp Point : cpm
Last Tx Port      : 7/2/5             Last Rx Port       : 6/2/3
===============================================================================


A:bksim1620# show system ptp peer 6.1.1.2
===============================================================================
IEEE 1588/PTP Peer Information
===============================================================================
IP Address        : 6.1.1.2           Announce Direction : rx+tx
Admin State       : up                G.8265.1 Priority  : n/a
Local PTP Port    : 2                 PTP Port State     : passive
Clock Id          : ac5dfffffe000000  Remote PTP Port    : 2
GM Clock Id       : ac5cfffffe000000  GM Clock Class     : 13
GM Clock Accuracy : 0xfe (unknown)    GM Clock Variance  : ffff (not computed)
GM Clock Priority1: 128               GM Clock Priority2 : 128
Steps Removed     : 1                 Parent Clock       : no
Tx Timestamp Point: port              Rx Timestamp Point : port
Last Tx Port      : 3/2/1             Last Rx Port       : 3/2/1
===============================================================================
```

sntp

Syntax	**sntp**
Context	show>system
Description	This command displays SNTP protocol configuration and state.
Output	**Show SNTP Output —** The following table describes SNTP output fields.

Label	Description
SNTP Server	The SNTP server address for SNTP unicast client mode.
Version	The SNTP version number, expressed as an integer.
Preference	Normal — When more than one time server is configured, one server can be configured to have preference over another.
	Preferred — Indicates that this server has preference over another.
Interval	The frequency, in seconds, that the server is queried.

Sample Output

```
A:ALA-1# show system sntp
===============================================================================
SNTP
===============================================================================
SNTP Server         Version          Preference       Interval
-------------------------------------------------------------------------------
10.10.20.253        3                Preferred        64
===============================================================================
A:ALA-1#
```

thresholds

Syntax   **thresholds**

Context   show>system

Description This command display system monitoring thresholds. The "Threshold Events Log" table will keep only the last 201 entries.

Output   **Thresholds Output —** following table describes system threshold output fields.

Label	Description
Variable	Displays the variable OID.
Alarm Id	Displays the numerical identifier for the alarm.
Last Value	Displays the last threshold value.
Rising Event Id	Displays the identifier of the RMON rising event.
Threshold	Displays the identifier of the RMON rising threshold.
Falling Event Id	Displays the identifier of the RMON falling event.
Threshold	Displays the identifier of the RMON falling threshold.
Sample Interval	Displays the polling interval, in seconds, over which the data is sampled and compared with the rising and falling thresholds.
Sample Type	Displays the method of sampling the selected variable and calculating the value to be compared against the thresholds.
Startup Alarm	Displays the alarm that may be sent when this alarm is first created.
Owner	Displays the owner of this alarm.
Description	Displays the event cause.
Event Id	Displays the identifier of the threshold event.
Last Sent	Displays the date and time the alarm was sent.

Label	Description (Continued)
Action Type	log — An entry is made in the RMON-MIB log table for each event occurrence. This does not create a TiMOS logger entry. The RMON-MIB log table entries can be viewed using the **show>system>thresholds** CLI command. trap — A TiMOS logger event is generated. The TiMOS logger utility then distributes the notification of this event to its configured log destinations which may be CONSOLE, telnet session, memory log, cflash file, syslog, or SNMP trap destinations logs. both — Both a entry in the RMON-MIB logTable and a TiMOS logger event are generated. none — No action is taken
Owner	Displays the owner of the event.

Sample Output

```
A:ALA-48# show system thresholds
===================================================================
Threshold Alarms
===================================================================
Variable: tmnxCpmFlashUsed.1.11.1
Alarm Id        : 1        Last Value : 835
Rising Event Id  : 1        Threshold  : 5000
Falling Event Id : 2        Threshold  : 2500
Sample Interval  : 2147483* SampleType : absolute
Startup Alarm    : either   Owner      : TiMOS CLI
Variable: tmnxCpmFlashUsed.1.11.1
Alarm Id        : 2        Last Value : 835
Rising Event Id  : 3        Threshold  : 10000
Falling Event Id : 4        Threshold  : 5000
Sample Interval  : 2147483* SampleType : absolute
Startup Alarm    : rising   Owner      : TiMOS CLI
Variable: sgiMemoryUsed.0
Alarm Id        : 3        Last Value : 42841056
Rising Event Id  : 5        Threshold  : 4000
Falling Event Id : 6        Threshold  : 2000
Sample Interval  : 2147836  SampleType : absolute
Startup Alarm    : either   Owner      : TiMOS CLI
===================================================================
* indicates that the corresponding row element may have been truncated.
===================================================================
Threshold Events
===================================================================
Description: TiMOS CLI - cflash capacity alarm rising event
Event Id        : 1        Last Sent  : 10/31/2006 08:47:59
Action Type     : both     Owner      : TiMOS CLI
Description: TiMOS CLI - cflash capacity alarm falling event
Event Id        : 2        Last Sent  : 10/31/2006 08:48:00
Action Type     : both     Owner      : TiMOS CLI
Description: TiMOS CLI - cflash capacity warning rising event
Event Id        : 3        Last Sent  : 10/31/2006 08:47:59
Action Type     : both     Owner      : TiMOS CLI
Description: TiMOS CLI - cflash capacity warning falling event
Event Id        : 4        Last Sent  : 10/31/2006 08:47:59
```

```
Action Type      : both    Owner      : TiMOS CLI
Description: TiMOS CLI - memory usage alarm rising event
Event Id         : 5        Last Sent  : 10/31/2006 08:48:00
Action Type      : both    Owner      : TiMOS CLI
Description: TiMOS CLI - memory usage alarm falling event
Event Id         : 6        Last Sent  : 10/31/2006 08:47:59
Action Type      : both    Owner      : TiMOS CLI
===============================================================
Threshold Events Log
===============================================================
Description      : TiMOS CLI - cflash capacity alarm falling eve
                   nt : value=835, <=2500 : alarm-index 1, event
                   -index 2 alarm-variable OID tmnxCpmFlashUsed.
                   1.11.1
Event Id         : 2        Time Sent  : 10/31/2006 08:48:00
Description      : TiMOS CLI - memory usage alarm rising event :
                    value=42841056, >=4000 : alarm-index 3, even
                   t-index 5 alarm-variable OID sgiMemoryUsed.0
Event Id         : 5        Time Sent  : 10/31/2006 08:48:00
===============================================================
A:ALA-48#
```

time

Syntax	**time**
Context	show>system
Description	This command displays the system time and zone configuration parameters.
Output	**System Time Output —** The following table describes system time output fields.

Label	Description
Date & Time	The system date and time using the current time zone.
DST Active	Yes — Daylight Savings Time is currently in effect.
	No — Daylight Savings Time is not currently in effect.
Zone	The zone names for the current zone, the non-DST zone, and the DST zone if configured.
Current Time Zone	Indicates the process currently controlling the system time. SNTP, NTP, PTP or NONE.
Zone type	Non-standard — The zone is user-defined.
	Standard — The zone is system defined.
Offset from UTC	The number of hours and minutes added to universal time for the zone, including the DST offset for a DST zone.

Label	Description (Continued)
`Offset from Non-DST`	The number of hours (always 0) and minutes (0—60) added to the time at the beginning of Daylight Saving Time and subtracted at the end Daylight Saving Time.
`Starts`	The date and time Daylight Saving Time begins.
`Ends`	The date and time Daylight Saving Time ends.

Sample Output

```
A:ALA-1# show system time
===============================================================================
Date & Time
===============================================================================
Current Date & Time : 2006/05/05 23:03:13    DST Active           : yes
Current Zone        : PDT                    Offset from UTC      : -7:00
-------------------------------------------------------------------------------
Non-DST Zone        : PST                    Offset from UTC      : -8:00
Zone type           : standard
-------------------------------------------------------------------------------
DST Zone            : PDT                    Offset from Non-DST  : 0:60
Starts              : first sunday in april 02:00
Ends                : last sunday in october 02:00
============================================================================
A:ALA-1#


A:ALA-1# show system time (with no DST zone configured)
===============================================================================
Date & Time
===============================================================================
Current Date & Time : 2006/05/12 11:12:05     DST Active     :     no
Current Zone    : APA      Offset from UTC :  -8:00
-------------------------------------------------------------------------------
Non-DST Zone    : APA      Offset from UTC :  -8:00
Zone Type           : non-standard
-------------------------------------------------------------------------------
No DST zone configured
===============================================================================
A:ALA-1#
```

time

Syntax   **time**

Context   show

Description   This command displays the current day, date, time and time zone.

The time is displayed either in the local time zone or in UTC depending on the setting of the root level **time-display** command for the console session.

Output   **Sample Output**

```
A:ALA-49# show time
Tue Oct 31 12:17:15 GMT 2006
```

tod-suite

Syntax   **tod-suite [detail]**
tod-suite associations
tod-suite failed-associations

Context   show>cron

Description   This command displays information on the configured time-of-day suite.

Output   **CRON TOD Suite Output —** The following table describes TOD suite output fields:

Label	Description
Associations	Shows which SAPs this tod-suite is associated with.
failed-associa-tions	Shows the SAPs or Multiservice sites where the TOD Suite could not be applied successfully.
Detail	Shows the details of this tod-suite.

Sample Output

```
A:kerckhot_4# show cron tod-suite suite_sixteen detail
===============================================================================
Cron tod-suite details
===============================================================================
Name      : suite_sixteen
Type / Id                       Time-range                    Prio  State
-------------------------------------------------------------------------------
Ingress Qos Policy
  1160                          day                           5     Inact
  1190                          night                         6     Activ
Ingress Scheduler Policy
  SchedPolCust1_Day             day                           5     Inact
  SchedPolCust1_Night           night                         6     Activ
Egress Qos Policy
  1160                          day                           5     Inact
  1190                          night                         6     Activ
Egress Scheduler Policy
  SchedPolCust1Egress_Day       day                           5     Inact
===============================================================================
A:kerckhot_4#
```

The following example shows output for TOD suite associations.

```
A:kerckhot_4# show cron tod-suite suite_sixteen associations
===============================================================================
Cron tod-suite associations for suite suite_sixteen
===============================================================================
Service associations
-------------------------------------------------------------------------------
Service Id  : 1                            Type   : VPLS
 SAP 1/1/1:1
 SAP 1/1/1:2
 SAP 1/1/1:3
 SAP 1/1/1:4
 SAP 1/1/1:5
 SAP 1/1/1:6
 SAP 1/1/1:20
-------------------------------------------------------------------------------
Number of SAP's : 7
Customer Multi-Service Site associations
-------------------------------------------------------------------------------
Multi Service Site: mss_1_1
-------------------------------------------------------------------------------
Number of MSS's: 1
===============================================================================
A:kerckhot_4#
```

The following example shows output for TOD suite failed-associations.

```
A:kerckhot_4# show cron tod-suite suite_sixteen failed-associations
===============================================================================
Cron tod-suite associations failed
===============================================================================
tod-suite suite_sixteen : failed association for SAP
-------------------------------------------------------------------------------
Service Id  : 1                            Type   : VPLS
  SAP 1/1/1:2
  SAP 1/1/1:3
  SAP 1/1/1:4
  SAP 1/1/1:5
  SAP 1/1/1:6
  SAP 1/1/1:20
-------------------------------------------------------------------------------
tod-suite suite_sixteen : failed association for Customer MSS
-------------------------------------------------------------------------------
None
-------------------------------------------------------------------------------
Number of tod-suites failed/total : 1/1
===============================================================================
A:kerckhot_4#
```

Zooming in on one of the failed SAPs, the assignments of QoS and scheduler policies are shown as not as intended:

```
A:kerckhot_4# show service id 1 sap 1/1/1:2
===============================================================================
Service Access Points(SAP)
===============================================================================
Service Id        : 1
```

```
SAP               : 1/1/1:2            Encap              : q-tag
Dot1Q Ethertype   : 0x8100             QinQ Ethertype     : 0x8100
Admin State       : Up                 Oper State         : Up
Flags             : None
Last Status Change : 10/05/2006 18:11:34
Last Mgmt Change   : 10/05/2006 22:27:48
Max Nbr of MAC Addr: No Limit          Total MAC Addr     : 0
Learned MAC Addr   : 0                 Static MAC Addr    : 0
Admin MTU         : 1518               Oper MTU           : 1518
Ingress qos-policy : 1130              Egress qos-policy : 1130
Intend Ing qos-pol*: 1190             Intend Egr qos-po*: 1190
Shared Q plcy     : n/a                Multipoint shared : Disabled
Ingr IP Fltr-Id   : n/a                Egr IP Fltr-Id     : n/a
Ingr Mac Fltr-Id  : n/a                Egr Mac Fltr-Id    : n/a
Ingr IPv6 Fltr-Id : n/a                Egr IPv6 Fltr-Id   : n/a
tod-suite         : suite_sixteen      qinq-pbit-marking  : both
Egr Agg Rate Limit : max
ARP Reply Agent   : Unknown            Host Conn Verify   : Disabled
Mac Learning      : Enabled            Discard Unkwn Srce : Disabled
Mac Aging         : Enabled            Mac Pinning        : Disabled
L2PT Termination  : Disabled           BPDU Translation   : Disabled

Multi Svc Site    : None
I. Sched Pol      : SchedPolCust1
Intend I Sched Pol : SchedPolCust1_Night
E. Sched Pol      : SchedPolCust1Egress
Intend E Sched Pol : SchedPolCust1Egress_Night
Acct. Pol         : None               Collect Stats      : Disabled
Anti Spoofing     : None               Nbr Static Hosts   : 0
===============================================================================
A:kerckhot_4#
```

If a time-range is specified for a filter entry, use the **show filter** command to view results:

```
A:kerckhot_4# show filter ip  10
===============================================================================
IP Filter
===============================================================================
Filter Id   : 10                       Applied      : No
Scope       : Template                 Def. Action  : Drop
Entries     : 2
-------------------------------------------------------------------------------
Filter Match Criteria : IP
-------------------------------------------------------------------------------
Entry       : 1010
time-range  : day                      Cur. Status  : Inactive
Log Id      : n/a
Src. IP     : 0.0.0.0/0                Src. Port    : None
Dest. IP    : 10.10.100.1/24           Dest. Port   : None
Protocol    : Undefined                Dscp         : Undefined
ICMP Type   : Undefined                ICMP Code    : Undefined
Fragment    : Off                      Option-present : Off
Sampling    : Off                      Int. Sampling  : On
IP-Option   : 0/0                      Multiple Option: Off
TCP-syn     : Off                      TCP-ack      : Off
Match action : Forward
Next Hop    : 138.203.228.28
Ing. Matches : 0                       Egr. Matches : 0
Entry       : 1020
```

```
time-range   : night                        Cur. Status   : Active
Log Id       : n/a
Src. IP      : 0.0.0.0/0                     Src. Port     : None
Dest. IP     : 10.10.1.1/16                  Dest. Port    : None
Protocol     : Undefined                     Dscp          : Undefined
ICMP Type    : Undefined                     ICMP Code     : Undefined
Fragment     : Off                           Option-present : Off
Sampling     : Off                           Int. Sampling  : On
IP-Option    : 0/0                           Multiple Option: Off
TCP-syn      : Off                           TCP-ack       : Off
Match action : Forward
Next Hop     : 172.22.184.101
Ing. Matches : 0                             Egr. Matches  : 0
===============================================================================
A:kerckhot_4#
```

If a filter is referred to in a TOD Suite assignment, use the show filter associations command to view the output:

```
A:kerckhot_4# show filter ip 160 associations
===============================================================================
IP Filter
===============================================================================
Filter Id    : 160                          Applied       : No
Scope        : Template                     Def. Action   : Drop
Entries      : 0
-------------------------------------------------------------------------------
Filter Association : IP
-------------------------------------------------------------------------------
Tod-suite "english_suite"
 - ingress, time-range "day" (priority 5)
===============================================================================
A:kerckhot_4#
```

redundancy

Syntax **redundancy**

Context show

Description This command enables the context to show redundancy information.

multi-chassis

Syntax **multi-chassis**

Context show>redundancy

Description This command enables the context to show multi-chassis redundancy information.

all

Syntax	**all** [**detail**]	
Context	show>redundancy>multi-chassis	
Description	This command displays brief multi-chassis redundancy information.	
Parameters	**detail** — Shows detailed multi-chassis redundancy information.	
Output	**Show Redundancy Multi-Chassis All Output —** The following table describes Redundancy Multi-Chassis All fields:	

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the MC peer.
Source IP Address	Displays the source address used to communicate with the MC peer.
Admin State	Displays the administrative state of the peer.

Sample Output

```
B:Dut-B# show redundancy multi-chassis all
===============================================================================
Multi-chassis Peer Table
===============================================================================
Peer
-------------------------------------------------------------------------------
Peer IP Address      : 10.10.10.2
Description          : Mc-Lag peer 10.10.10.2
Authentication       : Disabled
Source IP Address    : 0.0.0.0
Admin State          : Enabled
===============================================================================
B:Dut-B#


B:Dut-B# show lag detail
===============================================================================
LAG Details
===============================================================================
LAG 1
-------------------------------------------------------------------------------
Description: Description For LAG Number 1
-------------------------------------------------------------------------------
Details
-------------------------------------------------------------------------------
Lag-id              : 1                 Mode                : access
Adm                 : up                Opr                 : up
Thres. Exceeded Cnt : 9                 Port Threshold      : 0
Thres. Last Cleared : 05/20/2006 00:12:35  Threshold Action    : down
Dynamic Cost        : false             Encap Type          : null
```

```
Configured Address  : 1c:71:ff:00:01:41    Lag-IfIndex          : 1342177281
Hardware Address    : 1c:71:ff:00:01:41    Adapt Qos            : distribute
Hold-time Down      : 0.0 sec
LACP                : enabled              Mode                 : active
LACP Transmit Intvl : fast                 LACP xmit stdby      : enabled
Selection Criteria  : highest-count        Slave-to-partner     : disabled
Number of sub-groups: 1                    Forced               : -
System Id           : 1c:71:ff:00:00:00    System Priority      : 32768
Admin Key           : 32768                Oper Key             : 32666
Prtr System Id      : 20:f4:ff:00:00:00    Prtr System Priority : 32768
Prtr Oper Key       : 32768

MC Peer Address     : 10.10.10.2           MC Peer Lag-id       : 1
MC System Id        : 00:00:00:33:33:33    MC System Priority   : 32888
MC Admin Key        : 32666                MC Active/Standby    : active
MC Lacp ID in use   : true                 MC extended timeout  : false
MC Selection Logic  : peer decided
MC Config Mismatch  : no mismatch
-------------------------------------------------------------------------------
Port-id         Adm    Act/Stdby Opr    Primary  Sub-group      Forced  Prio
-------------------------------------------------------------------------------
331/2/1         up     active    up     yes      1              -       32768
331/2/2         up     active    up              1              -       32768
331/2/3         up     active    up              1              -       32768
331/2/4         up     active    up              1              -       32768
-------------------------------------------------------------------------------
Port-id         Role     Exp   Def   Dist  Col   Syn   Aggr  Timeout  Activity
-------------------------------------------------------------------------------
331/2/1         actor    No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/1         partner  No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/2         actor    No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/2         partner  No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/3         actor    No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/3         partner  No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/4         actor    No    No    Yes   Yes   Yes   Yes   Yes      Yes
331/2/4         partner  No    No    Yes   Yes   Yes   Yes   Yes      Yes
===============================================================================
B:Dut-B#
```

mc-endpoint

Syntax	**mc-endpoint statistics** **mc-endpoint peer** [*ip-address*] **statistics** **mc-endpoint endpoint** [*mcep-id*] **statistics** **mc-endpoint peer** [*ip-address*]
Context	show>redundancy>multi-chassis
Description	This command displays multi-chassis endpoint information.
Parameters	**statistics** — Displays the global statistics for the MC endpoint. **peer** *ip-address* — Specifies the IP address of multi-chassis end-point peer.

endpoint *mcep-id* — Specifies the nulti-chassis endpoint.

    Values   1 — 4294967295

Sample Output

```
*A:Dut-B# show redundancy multi-chassis mc-endpoint statistics
===============================================================================
Multi-Chassis Endpoint Global Statistics
===============================================================================
Packets Rx                                     : 533
Packets Rx Keepalive                           : 522
Packets Rx Config                              : 3
Packets Rx Peer Config                         : 1
Packets Rx State                               : 7
Packets Dropped Keep-Alive Task                : 7
Packets Dropped Too Short                       : 0
Packets Dropped Verify Failed                  : 0
Packets Dropped Tlv Invalid Size               : 0
Packets Dropped Out Of Seq                     : 0
Packets Dropped Unknown Tlv                    : 0
Packets Dropped Tlv Invalid MC-Endpoint Id     : 0
Packets Dropped MD5                            : 0
Packets Dropped Unknown Peer                   : 0
Packets Dropped MC Endpoint No Peer            : 0
Packets Tx                                     : 26099
Packets Tx Keepalive                           : 8221
Packets Tx Config                              : 2
Packets Tx Peer Config                         : 17872
Packets Tx State                               : 4
Packets Tx Failed                              : 0
===============================================================================
*A:Dut-B#

*A:Dut-B# show redundancy multi-chassis mc-endpoint peer 3.1.1.3 statistics
===============================================================================
Multi-Chassis MC-Endpoint Statistics
===============================================================================
Peer Addr                         : 3.1.1.3
-------------------------------------------------------------------------------
Packets Rx                        : 597
Packets Rx Keepalive              : 586
Packets Rx Config                 : 3
Packets Rx Peer Config            : 1
Packets Rx State                  : 7
Packets Dropped State Disabled    : 0
Packets Dropped Packets Too Short : 0
Packets Dropped Tlv Invalid Size  : 0
Packets Dropped Tlv Invalid LagId : 0
Packets Dropped Out of Seq        : 0
Packets Dropped Unknown Tlv       : 0
Packets Dropped MD5               : 0
Packets Tx                        : 636
Packets Tx Keepalive              : 600
Packets Tx Peer Config            : 30
Packets Tx Failed                 : 0
Packets Dropped No Peer           : 0
===============================================================================
```

```
*A:Dut-B#

*A:Dut-B# show redundancy multi-chassis mc-endpoint  endpoint 1 statistics
===============================================================================
Multi-Chassis Endpoint Statistics
===============================================================================
===============================================================================
MC-Endpoint Id 1
===============================================================================
Packets Rx Config             : 3
Packets Rx State              : 7
Packets Tx Config             : 2
Packets Tx State              : 4
Packets Tx Failed             : 0
===============================================================================
Number of Entries 1
===============================================================================
```

mc-lag

Syntax	**mc-lag** [**lag** *lag-id*]
Context	show>redundancy>multi-chassis
Description	This command displays multi-chassis LAG information.
Parameters	**lag** *lag-id* — Shows information for the specified LAG identifier.
	Values 1 — 20020064

mc-mobile

Syntax	**mc-mobile peer** {*ip-address*	*ip6-address*}
Context	show>redundancy>multi-chassis
Description	This command displays multi-chassis LAG information.
Parameters	*ip-address* — Shows information for the specified IPv4 peer.
	ipv6-address — Shows information for the specified IPv6 peer.

Sample Output

```
*A:Dut-A# show redundancy multi-chassis mc-mobile peer 10.90.1.2
===============================================================================
Multi-chassis Peer Mc-Mobile Table
===============================================================================
Peer               : 10.90.1.2
Last State Change  : 12/04/2012 23:23:43
Admin State        : Up/Down              Oper State       : Up/Down/ISSU
Peer Version       : 5.0Rx
Keep Alive         : 10 deci-sec      Hold On Nbr Fail    : 3
```

```
BFD Svc ID        : 0                BFD Interface Name  : mc_intloopback
-------------------------------------------------------------------------------
Gateway Id        : 2
-------------------------------------------------------------------------------
Admin Role        : Primary          Oper Role           : Master
Peer Admin Role   : Secondary        Peer Oper Role      : Slave
Admin State       : Up               Oper State          : Up
Last Time Peer Connected : 12/04/2012 23:23:43

Last State Change    : 12/04/2012 23:23:43
Last State Chg Reason: Traffic Evnt
Geo-Redundancy State : Hot

CPM               : 0                Geo Redundancy      : Hot
MSCP Group        : 1                Geo Redundancy      : Hot
===============================================================================
*A:Dut-A#
```

peer

Syntax	**peer** *ip-address* [**lag** *lag-id*]
Context	show>redundancy>multi-chassis>mc-lag
Description	This command enables the context to display mc-lag peer-related redundancy information.
Parameters	*ip-address —* Shows peer information about the specified IP address.
	lag *lag-id* **—** Shows information for the specified LAG identifier.
Values	1 — 20020064
Output	**Show Redundancy Multi-chassis MC-Lag Peer Output —** The following table describes show redundancy multi-chassis mc-lag peer output fields:

Label	Description
Last Changed	Displays date and time of the last mc-lag peer.
Admin State	Displays the administrative state of the mc-lag peer.
Oper State	Displays the operation state of the mc-lag peer.
KeepAlive	Displays the length of time to keep alive the mg-lag peer.
Hold On Ngbr Failure	Specifies how many "keepalive" intervals the standby SR will wait for packets from the active node before assuming a redundant-neighbor node failure.

Sample Output

```
A:subscr_mgt# show redundancy multi-chassis mc-lag peer 10.10.10.30
===============================================================================
Multi-Chassis MC-Lag Peer 10.10.10.30
```

```
===============================================================================
Last Changed    : 01/23/2007 18:20:13
Admin State     : Up                    Oper State          : Up
KeepAlive       : 10 deci-seconds       Hold On Ngbr Failure : 3
-------------------------------------------------------------------------------
Lag Id Lacp Key Remote Lag Id System Id          Sys Prio Last Changed
-------------------------------------------------------------------------------
1      1        1            00:00:00:00:00:01  1        01/23/2007 18:20:13
2      2        2            00:00:00:00:00:02  2        01/24/2007 08:53:48
-------------------------------------------------------------------------------
Number of LAGs : 2
===============================================================================
A:subscr_mgt#


A:subscr_mgt# show redundancy multi-chassis mc-lag peer 10.10.10.30 lag 1
===============================================================================
Multi-Chassis MC-Lag Peer 10.10.10.30
===============================================================================
Last Changed    : 01/23/2007 18:20:13
Admin State     : Up                    Oper State          : Up
KeepAlive       : 10 deci-seconds       Hold On Ngbr Failure : 3
-------------------------------------------------------------------------------
Lag Id Lacp Key Remote Lag Id System Id          Sys Prio Last Changed
-------------------------------------------------------------------------------
1      1        1            00:00:00:00:00:01  1        01/23/2007 18:20:13
-------------------------------------------------------------------------------
Number of LAGs : 1
===============================================================================
A:subscr_mgt#
```

statistics

Syntax	**statistics mc-lag** [**peer** *ip-address* [**lag** *lag-id*]]
Context	show>redundancy>multi-chassis>mc-lag
Description	This command displays multi-chassis statistics.
Parameters	**mc-lag** — Displays multi-chassis LAG statistics.
	peer *ip-address* — Shows the specified address of the multi-chassis peer.
	lag *lag-id* — Shows information for the specified LAG identifier.
	Values 1 — 20020064
Output	**Show Redundancy Multi-chassis MC-Lag Peer Statistics Output —** The following table describes show redundancy multi-chassis mc-lag peer output fields:

Label	Description
Packets Rx	Indicates the number of MC-Lag packets received from the peer.

Label	Description (Continued)
Packets Rx Keepalive	Indicates the number of MC-Lag keepalive packets received from the peer.
Packets Rx Config	Indicates the number of received MC-Lag configured packets from the peer.
Packets Rx Peer Config	Indicates the number of received MC-Lag packets configured by the peer.
Packets Rx State	Indicates the number of MC-Lag "lag" state packets received from the peer.
Packets Dropped State Disabled	Indicates the number of packets that were dropped because the peer was administratively disabled.
Packets Dropped Packets Too Short	Indicates the number of packets that were dropped because the packet was too short.
Packets Dropped Tlv Invalid Size	Indicates the number of packets that were dropped because the packet size was invalid.
Packets Dropped Tlv Invalid LagId	Indicates the number of packets that were dropped because the packet referred to an invalid or non multi-chassis lag.
Packets Dropped Out of Seq	Indicates the number of packets that were dropped because the packet size was out of sequence.
Packets Dropped Unknown Tlv	Indicates the number of packets that were dropped because the packet contained an unknown TLV.
Packets Dropped MD5	Indicates the number of packets that were dropped because the packet failed MD5 authentication.
Packets Tx	Indicates the number of packets transmitted from this system to the peer.
Packets Tx Keepalive	Indicates the number of keepalive packets transmitted from this system to the peer.
Packets Tx Peer Config	Indicates the number of configured packets transmitted from this system to the peer.
Packets Tx Failed	Indicates the number of packets that failed to be transmitted from this system to the peer.

Sample Output

```
A:subscr_mgt# show redundancy multi-chassis mc-lag statistics
===============================================================================
Multi-Chassis Statistics
===============================================================================
Packets Rx                       : 52535
Packets Rx Keepalive             : 52518
Packets Rx Config                : 2
```

```
                Packets Rx Peer Config        : 4
                Packets Rx State              : 6
                Packets Dropped KeepaliveTask : 0
                Packets Dropped Packet Too Short : 0
                Packets Dropped Verify Failed : 0
                Packets Dropped Tlv Invalid Size : 0
                Packets Dropped Out of Seq    : 0
                Packets Dropped Unknown Tlv   : 0
                Packets Dropped Tlv Invalid LagId : 0
                Packets Dropped MD5           : 0
                Packets Dropped Unknown Peer  : 0
                Packets Tx                    : 52583
                Packets Tx Keepalive          : 52519
                Packets Tx Config             : 2
                Packets Tx Peer Config        : 54
                Packets Tx State              : 8
                Packets Tx Failed             : 0
===============================================================================
A:subscr_mgt#


B:Dut-B# show redundancy multi-chassis mc-lag peer 10.10.10.2 statistics
===============================================================================
Multi-Chassis Statistics, Peer 10.10.10.2
===============================================================================
Packets Rx                    : 231
Packets Rx Keepalive          : 216
Packets Rx Config             : 1
Packets Rx Peer Config        : 2
Packets Rx State              : 12
Packets Dropped State Disabled : 0
Packets Dropped Packets Too Short : 0
Packets Dropped Tlv Invalid Size : 0
Packets Dropped Tlv Invalid LagId : 0
Packets Dropped Out of Seq    : 0
Packets Dropped Unknown Tlv   : 0
Packets Dropped MD5           : 0
Packets Tx                    : 235
Packets Tx Keepalive          : 216
Packets Tx Peer Config        : 3
Packets Tx Failed             : 0
===============================================================================
B:Dut-B#
```

mc-ring

Syntax   **mc-ring peer** *ip-address* **statistics**
mc-ring peer *ip-address* [**ring** *sync-tag* [**detail**|**statistics**]]
mc-ring peer *ip-address* **ring** *sync-tag* **ring-node** [*ring-node-name* [**detail**|**statistics**]]
mc-ring global-statistics

Context   show>redundancy>multi-chassis

Description   This command displays multi-chassis ring information.

Parameters   *ip-address* — Specifies the address of the multi-chassis peer to display.

ring *sync-tag* — Specifies a synchronization tag to be displayed that was used while synchronizing this port with the multi-chassis peer.

node *ring-node-name* — Specifies a ring-node name.

global-statistics — Displays global statistics for the multi-chassis ring.

detail — Displays detailed peer information for the multi-chassis ring.

Output   **Show mc-ring peer ip-address ring Output —** The following table describes mc-ring peer ip-address ring output fields.

Label	Description
Sync Tag	Displays the synchronization tag that was used while synchronizing this port with the multi-chassis peer.
Oper State	noPeer — The peer has no corresponding ring configured.
	connected — The inband control connection with the peer is operational.
	broken — The inband control connection with the peer has timed out.
	conflict — The inband control connection with the peer has timed out but the physical connection is still OK; the failure of the inband signaling connection is caused by a misconfiguration. For example, a conflict between the configuration of this system and its peer, or a misconfiguration on one of the ring access node systems.
	testingRing — The inband control connection with the peer is being set up. Waiting for result.
	waitingForPeer — Verifying if this ring is configured on the peer.
	configErr — The ring is administratively up, but a configuration error prevents it from operating properly.
	halfBroken — The inband control connection indicates that the ring is broken in one direction (towards the peer).
	localBroken — The inband control connection with the peer is known to be broken due to local failure or local administrive action.
	shutdown — The ring is shutdown.
Failure Reason	Displays the reason of the failure of the operational state of a MC ring.
No. of MC Ring entries	Displays the number of MC ring entries.

Sample Output

```
*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 10.0.0.2 ring ring11 detail
===============================================================================
Multi-Chassis MC-Ring Detailed Information
```

```
===============================================================================
Peer          : 10.0.0.2
Sync Tag      : ring11
Port ID       : 1/1/3
Admin State   : inService
Oper State    : connected
Admin Change  : 01/07/2008 21:40:07
Oper Change   : 01/07/2008 21:40:24
Failure Reason : None
-------------------------------------------------------------------------------
In Band Control Path
-------------------------------------------------------------------------------
Service ID    : 10
Interface Name : to_an1
Oper State    : connected
Dest IP       : 10.10.0.2
Src  IP       : 10.10.0.1
-------------------------------------------------------------------------------
VLAN Map B Path Provisioned
-------------------------------------------------------------------------------
range 13-13
range 17-17
-------------------------------------------------------------------------------
VLAN Map Excluded Path Provisioned
-------------------------------------------------------------------------------
range 18-18
-------------------------------------------------------------------------------
VLAN Map B Path Operational
-------------------------------------------------------------------------------
range 13-13
range 17-17
-------------------------------------------------------------------------------
VLAN Map Excluded Path Operational
-------------------------------------------------------------------------------
range 18-18
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#


*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 192.251.10.104
===============================================================================
MC Ring entries
===============================================================================
Sync Tag                        Oper State     Failure Reason
-------------------------------------------------------------------------------
No. of MC Ring entries: 0
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#


*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 10.0.0.2
===============================================================================
MC Ring entries
===============================================================================
Sync Tag                        Oper State     Failure Reason
-------------------------------------------------------------------------------
ring11                          connected      None
ring12                          shutdown       None
-------------------------------------------------------------------------------
```

```
No. of MC Ring entries: 4
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#


*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 10.0.0.2 ring ring11 ring-node an1
detail
===============================================================================
Multi-Chassis MC-Ring Node Detailed Information
===============================================================================
Peer           : 10.0.0.2
Sync Tag       : ring11
Node Name      : an1
Oper State Loc : connected
Oper State Rem : notTested
In Use         : True
Admin Change   : 01/07/2008 21:40:07
Oper Change    : 01/07/2008 21:40:25
Failure Reason : None
-------------------------------------------------------------------------------
Ring Node Connectivity Verification
-------------------------------------------------------------------------------
Admin State    : inService
Service ID     : 11
VLAN Tag       : 11
Dest IP        : 10.11.3.1
Src  IP        : None
Interval       : 1 minutes
Src MAC        : None
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#


*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 10.0.0.2 ring ring11 ring-node
===============================================================================
MC Ring Node entries
===============================================================================
Name                           Loc Oper St.     Failure Reason
  In Use                         Rem Oper St.
-------------------------------------------------------------------------------
an1                            connected        None
  Yes                            notTested
an2                            connected        None
  Yes                            notTested
-------------------------------------------------------------------------------
No. of MC Ring Node entries: 2
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#
```

Show Redundancy Multi-Chassis Ring Peer Statistics Output — The following table describes multi-chassis ring peer output fields.

Label	Description
Message	Displays the message type.

Label	Description
Received	Indicates the number of valid MC-ring signalling messages received from the peer.
Transmitted	Indicates the number of valid MC-ring signalling messages transmitted from the peer.
MCS ID Request	Displays the number of valid MCS ID requests were received from the peer.
MCS ID Response	Displays the number of valid MCS ID responses were received from the peer.
Ring Exists Request	Displays the number of valid 'ring exists' requests were received from the peer.
Ring Exists Response	Displays the number of valid ring exists' responses were received from the peer.
Keepalive	Displays the number of valid MC-ring control packets of type 'keepalive' were received from the peer.

Sample Output

```
*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 192.251.10.104 statistics
===============================================================================
MC Ring statistics for peer 192.251.10.104
===============================================================================
Message                                           Received     Transmitted
-------------------------------------------------------------------------------
MCS ID Request                                    0            0
MCS ID Response                                   0            0
Ring Exists Request                               0            0
Ring Exists Response                              0            0
Keepalive                                         0            0
-------------------------------------------------------------------------------
Total                                             0            0
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#
```

Show mc-ring ring-node Command Output

Label	Description
Oper State	Displays the state of the connection verification (both local and remote).
	notProvisioned — Connection verification is not provisioned.
	configErr — Connection verification is provisioned but a configuration error prevents it from operating properly.
	notTested — Connection verification is administratively disabled or is not possible in the current situation.
	testing — Connection Verification is active, but no results are yet available.
	connected — The ring node is reachable.
	disconnected — Connection verification has timed out.
In Use	Displays "True" if the ring node is referenced on an e-pipe or as an inter-dest-id on a static host or dynamic lease.

Show mc-ring global-statistics Command Output

Label	Description
Rx	Displays the number of MC-ring signalling packets were received by this system.
Rx Too Short	Displays the number of MC-ring signalling packets were received by this system that were too short.
Rx Wrong Authentication	Displays the number of MC-ring signalling packets were received by this system with invalid authentication.
Rx Invalid TLV	Displays the number of MC-ring signalling packets were received by this system with invalid TLV.
Rx Incomplete	Displays the number of MC-ring signalling packets were received by this system that were incomplete.
Rx Unknown Type	Displays the number of MC-ring signalling packets were received by this system that were of unknown type.
Rx Unknown Peer	Displays the number of MC-ring signalling packets were received by this system that were related to an unknown peer.
Rx Unknown Ring	Displays the number of MC-ring signalling packets were received by this system that were related to an unknown ring.

Label	Description
Rx Unknown Ring Node	Displays the number of MC-ring signalling packets were received by this system that were related to an unknown ring node.
Tx	Displays the number of MC-ring signalling packets were transmitted by this system.
Tx No Buffer	Displays the number of MC-ring signalling packets could not be transmitted by this system due to a lack of packet buffers.
Tx Transmission Failed	Displays the number of MC-ring signalling packets could not be transmitted by this system due to a transmission failure.
Tx Unknown Destination	Displays the number of MC-ring 'unknown destination' signalling packets were transmitted by this system.
Missed Configuration Events	Displays the number of missed configuration events on this system.
Missed BFD Events	Displays the number of missed BFD events on this system.

```
*A:ALA-48>show>redundancy>multi-chassis# mc-ring global-statistics
===============================================================================
Global MC Ring statistics
===============================================================================
Rx                          : 0
Rx Too Short                : 0
Rx Wrong Authentication     : 0
Rx Invalid TLV              : 0
Rx Incomplete               : 0
Rx Unknown Type             : 0
Rx Unknown Peer             : 0
Rx Unknown Ring             : 0
Rx Unknown Ring Node        : 0
Tx                          : 36763
Tx No Buffer                : 0
Tx Transmission Failed      : 0
Tx Unknown Destination      : 0
Missed Configuration Events : 0
Missed BFD Events           : 0
===============================================================================
*A:ALA-48>show>redundancy>multi-chassis#
```

sync

Syntax   **sync** [**port** *port-id* | *lag-id*]

Context   show>redundancy>multi-chassis

Description   This command displays synchronization information.

Parameters   **port** *port-id* — Shows the specified port ID of the multi-chassis peer.

lag *lag-id* — Shows information for the specified LAG identifier.

> **Values**   1 — 20020064

Output   **Show Redundancy Multi-chassis Sync Output —** The following table describes show redundancy multi-chassis sync output fields:

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the multi-chassis peer.
Source IP Address	Displays the source address used to communicate with the multi-chassis peer.
Admin State	Displays the administrative state of the peer.
Client Applica-tions	Displays the list of client applications synchronized between SRs.
Sync Admin State	Displays the administrative state of the synchronization.
Sync Oper State	Displays the operation state of the synchronization.
DB Sync State	Displays the database state of the synchronization.
Num Entries	Displays the number of entries on local router.
Lcl Deleted Entries	Displays the number of deleted entries made at the local router.
Alarm Entries	Displays the alarm entries on the local router.
Rem Num Entries	Displays the number of entries on the remote router.
Rem Lcl Deleted Entries	Displays the number of locally deleting entries made by the remote router.
Rem Alarm Entries	Displays alarm entries on the remote router.

Sample Output

```
*A:subscr_mgt_2# show redundancy multi-chassis sync
===============================================================================
Multi-chassis Peer Table
===============================================================================
Peer
-------------------------------------------------------------------------------
Peer IP Address        : 10.10.10.20
Description            : Mc-Lag peer 10.10.10.20
Authentication         : Disabled
```

```
Source IP Address      : 0.0.0.0
Admin State            : Enabled
-------------------------------------------------------------------------------
Sync-status
-------------------------------------------------------------------------------
Client Applications    : SUBMGMT
Sync Admin State       : Up
Sync Oper State        : Up
DB Sync State          : inSync
Num Entries            : 1
Lcl Deleted Entries    : 0
Alarm Entries          : 0
Rem Num Entries        : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries      : 0
===============================================================================
A:subscr_mgt_2#
```

peer

Syntax	**peer** *ip-address*
Context	show>redundancy>multi-chassis>sync
Description	This command enables the context to display peer-related redundancy information.
Parameters	*ip-address* — Shows peer information about the specified IP address.
Output	**Show Redundancy Multi-chassis Sync Peer Output —** The following table describes show redundancy multi-chassis sync output fields:

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the multi-chassis peer.
Source IP Address	Displays the source address used to communicate with the multi-chassis peer.
Admin State	Displays the administrative state of the peer.
Client Applications	Displays the list of client applications synchronized between SRs.
Sync Admin State	Displays the administrative state of the synchronization.
Sync Oper State	Displays the operation state of the synchronization.
DB Sync State	Displays the database state of the synchronization.
Num Entries	Displays the number of entries on local router.

Label	Description
Lcl Deleted Entries	Displays the number of deleted entries made at the local router.
Alarm Entries	Displays the alarm entries on the local router.
Rem Num Entries	Displays the number of entries on the remote router.
Rem Lcl Deleted Entries	Displays the number of locally deleting entries made by the remote router.
Rem Alarm Entries	Displays alarm entries on the remote router.

Sample Output

```
*A:subscr_mgt_2# show redundancy multi-chassis sync peer 10.10.10.20
===============================================================================
Multi-chassis Peer Table
===============================================================================
Peer
-------------------------------------------------------------------------------
Peer IP Address       : 10.10.10.20
Description           : Mc-Lag peer 10.10.10.20
Authentication        : Disabled
Source IP Address     : 0.0.0.0
Admin State           : Enabled
-------------------------------------------------------------------------------
Sync-status
-------------------------------------------------------------------------------
Client Applications   : SUBMGMT
Sync Admin State      : Up
Sync Oper State       : Up
DB Sync State         : inSync
Num Entries           : 1
Lcl Deleted Entries   : 0
Alarm Entries         : 0
Rem Num Entries       : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
===============================================================================
MCS Application Stats
===============================================================================
Application           : igmp
Num Entries           : 0
Lcl Deleted Entries   : 0
Alarm Entries         : 0
-------------------------------------------------------------------------------
Rem Num Entries       : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
-------------------------------------------------------------------------------
Application           : igmpSnooping
Num Entries           : 0
Lcl Deleted Entries   : 0
Alarm Entries         : 0
-------------------------------------------------------------------------------
```

```
Rem Num Entries          : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries        : 0
-------------------------------------------------------------------------------
Application              : subMgmt
Num Entries              : 1
Lcl Deleted Entries      : 0
Alarm Entries            : 0
-------------------------------------------------------------------------------
Rem Num Entries          : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries        : 0
-------------------------------------------------------------------------------
Application              : srrp
Num Entries              : 0
Lcl Deleted Entries      : 0
Alarm Entries            : 0
-------------------------------------------------------------------------------
Rem Num Entries          : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries        : 0
===============================================================================
*A:subscr_mgt_2#
```

detail

Syntax	**detail**
Context	show>redundancy>multi-chassis>peer
Description	This command displays detailed peer information.
Output	**Show Redundancy Multi-chassis Sync Peer Detail Output —** The following table describes show redundancy multi-chassis sync detail output fields:

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the multi-chassis peer.
Source IP Address	Displays the source address used to communicate with the multi-chassis peer.
Admin State	Displays the administrative state of the peer.
Client Applica-tions	Displays the list of client applications synchronized between routers.
Sync Admin State	Displays the administrative state of the synchronization.

Label	Description (Continued)
Sync Oper State	Displays the operation state of the synchronization.
DB Sync State	Displays the database state of the synchronization.
Num Entries	Displays the number of entries on local router.
Lcl Deleted Entries	Displays the number of deleted entries made at the local router.
Alarm Entries	Displays the alarm entries on the local router.
Rem Num Entries	Displays the number of entries on the remote router.
Rem Lcl Deleted Entries	Displays the number of locally deleting entries made by the remote router.
Rem Alarm Entries	Displays alarm entries on the remote router.

Sample Output

```
*A:subscr_mgt_2# show redundancy multi-chassis sync peer 10.10.10.20 detail
===============================================================================
Multi-chassis Peer Table
===============================================================================
Peer
-------------------------------------------------------------------------------
Peer IP Address           : 10.10.10.20
Description               : Mc-Lag peer 10.10.10.20
Authentication            : Disabled
Source IP Address         : 0.0.0.0
Admin State               : Enabled
-------------------------------------------------------------------------------
Sync-status
-------------------------------------------------------------------------------
Client Applications       : SUBMGMT
Sync Admin State          : Up
Sync Oper State           : Up
DB Sync State             : inSync
Num Entries               : 1
Lcl Deleted Entries       : 0
Alarm Entries             : 0
Rem Num Entries           : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries         : 0
===============================================================================
MCS Application Stats
===============================================================================
Application               : igmp
Num Entries               : 0
Lcl Deleted Entries       : 0
Alarm Entries             : 0
-------------------------------------------------------------------------------
Rem Num Entries           : 0
```

```
Rem Lcl Deleted Entries : 0
Rem Alarm Entries       : 0
-------------------------------------------------------------------------------
Application             : igmpSnooping
Num Entries             : 0
Lcl Deleted Entries     : 0
Alarm Entries           : 0
-------------------------------------------------------------------------------
Rem Num Entries         : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries       : 0
-------------------------------------------------------------------------------
Application             : subMgmt
Num Entries             : 1
Lcl Deleted Entries     : 0
Alarm Entries           : 0
-------------------------------------------------------------------------------
Rem Num Entries         : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries       : 0
-------------------------------------------------------------------------------
Application             : srrp
Num Entries             : 0
Lcl Deleted Entries     : 0
Alarm Entries           : 0
-------------------------------------------------------------------------------
Rem Num Entries         : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries       : 0
===============================================================================
Ports synced on peer 10.10.10.20
===============================================================================
Port/Encap                 Tag
-------------------------------------------------------------------------------
lag-1                      test123
===============================================================================
*A:subscr_mgt_2#
```

synchronization

Syntax   **synchronization**

Context   show>redundancy

Description   This command displays redundancy synchronization times.

Sample Output

```
A:ALA-48>show>redundancy# synchronization
===============================================================================
Synchronization Information
===============================================================================
Standby Status             : disabled
Last Standby Failure       : N/A
Standby Up Time            : N/A
Failover Time              : N/A
Failover Reason            : N/A
Boot/Config Sync Mode      : None
Boot/Config Sync Status    : No synchronization
Last Config File Sync Time : Never
Last Boot Env Sync Time    : Never
===============================================================================
A:ALA-48>show>redundancy#
```

time-range

Syntax   **time-range** *name* **associations [detail]**

Context   show>cron

Description   This command displays information on the configured time ranges.

Output   **Time Range Output —** The following table displays system time range output fields:

Label	Description
Associations	Shows the time-range as it is associated with the TOD suites and ACL entries as well as the SAPs using them.
Detail	Shows the details of this time-range.

Sample Output

The following example shows time-range detail output.

```
A:ala# show cron time-range time-range2 detail
===============================================================================
```

```
Cron time-range
================================================================================
Name     : time-range1
Periodic   : Start * * * * End * * * *
Absolute   : Start * * * * End * * * *
```

The following example shows output for time-range associations with previously created IP and MAC filters.

```
A:ala# show cron time-range day associations
================================================================================
Cron time-range associations
================================================================================
Name        : day                          State  : Inactive
--------------------------------------------------------------------------------
IP Filter associations
--------------------------------------------------------------------------------
IP filter Id  : 10, entry 1010
--------------------------------------------------------------------------------
MAC Filter associations
--------------------------------------------------------------------------------
None
--------------------------------------------------------------------------------
Tod-suite associations
--------------------------------------------------------------------------------
Tod-suite : suite_sixteen, for Ingress Qos Policy "1160"
Tod-suite : suite_sixteen, for Ingress Scheduler Policy "SchedPolCust1_Day"
Tod-suite : suite_sixteen, for Egress Qos Policy "1160"
Tod-suite : suite_sixteen, for Egress Scheduler Policy "SchedPolCust1Egress_Day
================================================================================
```

uptime

Syntax	**uptime**
Context	show
Description	This command displays the time since the system started.
Output	**Uptime Output —** The following table describes uptime output fields.

Label	Description
System Up Time	Displays the length of time the system has been up in days, hr:min:sec format.

Sample Output

```
A:ALA-1# show uptime
System Up Time      : 11 days, 18:32:02.22 (hr:min:sec)

A:ALA-1#
```

switch-fabric

Syntax **switch-fabric**

Context show>system

Description This command displays switch fabric information.

Output **Switch fabric output —** The following table describes switch-fabric output fields for 12-slot and 7-slot chassis models:.

Label	Description
Slot/MDA	Displays the fabric slot within a chassis in the system. The CPM cards and IOM cards cannot be physically inserted into the switch fabric card slots.
Min. Forwarding Capacity	Displays the minimum forwarding capacity of the slot and MDA as a percentage.
Max. Forwarding Capacity	Displays the maximum forwarding capacity of the slot and MDA as a percentage.

Sample Output

```
A:ALA-7# show system switch-fabric
===============================================================================
Switch Fabric
===============================================================================
Slot/Mda Min. Forwarding Capacity Max. Forwarding Capacity
-------------------------------------------------------------------------------
1/1  100%      100%
1/2  100%      100%
2/1  100%      100%
2/2  100%      100%
3/1  100%      100%
3/2  100%      100%
4/1  100%      100%
4/2  100%      100%
5/1  100%      100%
5/2  100%      100%
A    100%      100%
B    100%      100%
===============================================================================
A:ALA-7#

A:ALA-12# show system switch-fabric
===============================================================================
Switch Fabric
===============================================================================
Slot/Mda Min. Forwarding Capacity Max. Forwarding Capacity
-------------------------------------------------------------------------------
1/1  100%      100%
1/2  100%      100%
2/1  100%      100%
```

```
2/2  100%    100%
3/1  100%    100%
3/2  100%    100%
4/1  100%    100%
4/2  100%    100%
5/1  100%    100%
5/2  100%    100%
6/1  100%    100%
6/2  100%    100%
7/1  100%    100%
7/2  100%    100%
8/1  100%    100%
8/2  100%    100%
A    100%    100%
B    100%    100%
===========================================================================
A:ALA-12
```

sync-if-timing

Syntax **sync-if-timing**

Context show>system

Description This command displays synchronous interface timing operational information.

Output **System Timing Output —** The following table describes sync-if-timing output fields.

Label	Description
System Status CPM A/B	Indicates the present status of the synchronous timing equipment subsystem (SETS). Not Present — Only shown on systems without central clocks (7750 SR-1 and 7450 ESS-1) Master Freerun — The clock is in free-run because it hasn't had a qualified input reference to lock to Master Holdover — The clock was locked to an input reference but has lost all qualified input references and is in holdover. Master Locked — The clock is locked to an input reference Acquiring — The clock is training to a qualified input reference.
Reference Input Mode	Revertive — Indicates that for a re-validated or a newly validated reference source which has a higher priority than the currently selected reference has reverted to the new reference source. Non-revertive — The clock cannot revert to a higher priority clock if the current clock goes offline.
Quality Level Selection	Indicates whether the ql-selection command has been enabled or disabled. If this command is enabled, then the reference is selected first using the QL value, then by the priority reference order. If this command is not enabled, then the reference is selected by the priority reference order.

Label	Description (Continued)
Reference Selected	Indicates which reference has been selected: • ref1, ref2 - (for all chassis) • BITS A, BITS B - (7750 SR-7/12) • Mate CPM (BITS A), Mate CPM (BITS B) - (7750 SR-7/12 on the active CPM) • Mate CPM (none) - **show>system>sync-if-timing> standby** when standby locked to active which is freerun or holdover - (7750 SR-7/12) • Mate CPM (ref1), Mate CPM (ref2) - **show>system>sync-if-timing>standby** when standby locked to active which is locked to ref1 or ref2 - (7750 SR-7/12) • BITS 1, BITS2 - (7750 SR-c4 only)
System Quality Level	Indicates the quality level being generated by the system clock.
Current Frequency Offset	(value) — The frequency offset of the currently selected timing reference in parts per million.
Reference Order	ref1, ref2, bits — Indicates that the priority order of the timing references.
Reference Mate CPM	Data within this block represents the status of the timing reference provided by the Mate CPM. This will be the BITS input from the standby CPM.
Admin Status	down — The **ref1** or **ref2** configuration is administratively shutdown. up — The **ref1** or **ref2** configuration is administratively enabled. diag — Indicates the reference has been forced using the force-reference command.
Quality Level Override	Indicates whether the QL value used to determine the reference was configured directly by the user.
Rx Quality Level	Indicates the QL value received on the interface. • inv - SSM received on the interface indicates an invalid code for the interface type. • unknown - No QL value was received on the interface.
Qualified for Use	Indicates whether the reference has been qualified to be used as a source of timing for the node.
Not Qualified Due To	Indicates the reason why the reference has not been qualified: - disabled - LOS - OOPIR - OOF

Label	Description (Continued)
Selected for Use	Indicates whether the method is presently selected.
Not Selected Due To	Indicates the reason why the method is not selected: - disabled - not qualified - previous failure - LOF - AIS-L - validating - on standby - ssm quality
Source Port	Identifies the Source port for the reference.
Interface Type	The interface type configured for the BITS port.
Framing	The framing configured for the BITS port.
Line Coding	The line coding configured for the BITS port.
Line Length	The line length value of the BITS output.
Output Admin Status	down — The BITS output is administratively shutdown. up — The BITS output is administratively enabled. diag — Indicates the BITS output has been forced using the force-reference command.
Output Source	The source to be used to provide the signal on the BITS output port. line reference — unfiltered recovered line reference. internal clock — filtered node clock output.
Output Reference Selected	The reference selected as the source for the BITS output signal (ref1 or ref2).
TX Quality Level	QL value for BITS output signal.

The following example is for a node locked to the active BITS input and directing the signal on ref1 to the BITS output:

Sample Output

```
*A:SR7# show system sync-if-timing
===============================================================================
System Interface Timing Operational Info
===============================================================================
System Status CPM A               : Master Locked
    Reference Input Mode          : Non-revertive
    Quality Level Selection       : Disabled
    Reference Selected            : BITS A
    System Quality Level          : prs
```

```
        Current Frequency Offset (ppm) : +0

Reference Order                   : bits ref1 ref2

Reference Mate CPM
    Qualified For Use             : Yes
    Selected For Use              : No
        Not Selected Due To       :     on standby

Reference Input 1
    Admin Status                  : up
    Rx Quality Level              : prs
    Qualified Level Override       : none
    Qualified For Use             : Yes
    Selected For Use              : No
        Not Selected Due To       :     on standby
    Source Port                   : 3/1/2

Reference Input 2
    Admin Status                  : down
    Rx Quality Level              : unknown
    Qualified Level Override       : none
    Qualified For Use             : No
        Not Qualified Due To      :     disabled
    Selected For Use              : No
        Not Selected Due To       :     disabled
    Source Port                   : None

Reference BITS A
    Admin Status                  : up
    Rx Quality Level              : prs
    Qualified Level Override       : none
    Qualified For Use             : Yes
    Selected For Use              : Yes
    Interface Type                : DS1
    Framing                       : ESF
    Line Coding                   : B8ZS
    Line Length                   : 550-660ft
    Output Admin Status        : up
    Output Admin State         : ref1
    Output Source              : prs
    Output Reference Selected  : ptp
    Tx Quality Level           : prs

===============================================================================
*A:SR7#
```

The following example is for a node locked to the standby CPM BITS input and directing the ref1 signal to the BITS output port:

```
*A:Dut-B# show system sync-if-timing
===========================================================================
System Interface Timing Operational Info
===========================================================================
System Status CPM A               : Master Locked
    Reference Input Mode          : Non-revertive
    Quality Level Selection       : Disabled
    Reference Selected            : Mate CPM (BITS B)
```

```
    System Quality Level        : prs
    Current Frequency Offset (ppm) : +0

Reference Order                 : bits ref1 ref2

Reference Mate CPM
    Qualified For Use           : Yes
    Selected For Use            : Yes

Reference Input 1
    Admin Status                : up
    Rx Quality Level            : prs
    Quality Level Override      : none
    Qualified For Use           : Yes
    Selected For Use            : No
        Not Selected Due To     : on standby
    Source Port                 : 3/1/2

Reference Input 2
    Admin Status                : down
    Rx Quality Level            : unknown
    Quality Level Override      : none
    Qualified For Use           : No
        Not Qualified Due To    : disabled
    Selected For Use            : No
        Not Selected Due To     : disabled
    Source Port                 : None

Reference BITS A
    Admin Status                : up
    Rx Quality Level            : unknown
    Quality Level Override      : none
    Qualified For Use           : No
        Not Qualified Due To    : LOS
    Selected For Use            : No
        Not Selected Due To     : not qualified
    Interface Type              : DS1
    Framing                     : ESF
    Line Coding                 : B8ZS
    Line Length                 : 550-660ft
    Output Admin Status         : up
    Output Admin State          : ref1
    Output Source               : prs
    Output Reference Selected   : ptp
    Tx Quality Level            : prs
===============================================================================
```

The following example is for a node whose standby CPM is locked to its local BITS port and the signal from ref1 is directed to the BITS output port:

```
A:SR7# show system sync-if-timing standby
===============================================================================
System Interface Timing Operational Info
===============================================================================
System Status CPM B             : Master Locked
    Reference Input Mode        : Non-revertive
    Quality Level Selection     : Disabled
    Reference Selected          : BITS B
    System Quality Level        : prs
```

```
        Current Frequency Offset (ppm) : +0

    Reference Order                  : bits ref1 ref2

    Reference Mate CPM
        Qualified For Use            : Yes
        Selected For Use             : No
            Not Selected Due To      : on standby

    Reference Input 1
        Admin Status                 : down
        Rx Quality Level             : unknown
        Quality Level Override       : none
        Qualified For Use            : No
            Not Qualified Due To     : disabled
        Selected For Use             : No
            Not Selected Due To      : disabled
        Source Port                  : None

    Reference Input 2
        Rx Quality Level             : unknown
        Quality Level Override       : none
        Qualified For Use            : No
            Not Qualified Due To     : disabled
        Selected For Use             : No
            Not Selected Due To      : disabled
        Source Port                  : None

    Reference BITS B
        Admin Status                 : up
        Rx Quality Level             : prs
        Quality Level Override       : none
        Qualified For Use            : Yes
        Selected For Use             : Yes
        Interface Type               : DS1
        Framing                      : ESF
        Line Coding                  : B8ZS
        Line Length                  : 550-660ft
        Output Admin Status          : up
        Output Admin State           : ref1
        Output Source                : prs
        Output Reference Selected    : ptp
        Tx Quality Level             : prs
===============================================================================
*A:SR7#
```

synchronization

Syntax   **synchronization**

Context   show>redundancy>synchronization

Description This command displays redundancy synchronization times.

Output   **Synchronization Output —** The following table describes redundancy synchronization output fields.

Label	Description
Standby Status	Displays the status of the standby CPM.
Last Standby Failure	Displays the timestamp of the last standby failure.
Standby Up Time	Displays the length of time the standby CPM has been up.
Failover Time	Displays the timestamp when the last redundancy failover occurred causing a switchover from active to standby CPM. If there is no redundant CPM card in this system or no failover has occurred since the system last booted, the value will be 0.
Failover Reason	Displays a text string giving an explanation of the cause of the last redundancy failover. If no failover has occurred, an empty string displays.
Boot/Config Sync Mode	Displays the type of synchronization operation to perform between the primary and secondary CPMs after a change has been made to the configuration files or the boot environment information contained in the boot options file (BOF).
Boot/Config Sync Status	Displays the results of the last synchronization operation between the primary and secondary CPMs.
Last Config File Sync Time	Displays the timestamp of the last successful synchronization of the configuration files.
Last Boot Env Sync Time	Displays the timestamp of the last successful synchronization of the boot environment files.

Sample Output

```
A:ALA-1>show>redundancy# synchronization
===============================================================================
Synchronization Information
===============================================================================
Standby Status             : disabled
Last Standby Failure       : N/A
Standby Up Time            : N/A
Failover Time              : N/A
Failover Reason            : N/A
Boot/Config Sync Mode      : None
Boot/Config Sync Status    : No synchronization
Last Config File Sync Time : Never
Last Boot Env Sync Time    : Never
===============================================================================
A:ALA-1>show>redundancy#
```

Debug Commands

sync-if-timing

Syntax   **sync-if-timing**

Context   debug

Description The context to debug synchronous interface timing references.

force-reference

Syntax   **force-reference {ref1 | ref2 | bits | ptp}**
no force-reference

Context   debug>sync-if-timing

Description This command allows an operator to force the system synchronous timing output to use a specific reference.

Note: The debug sync-if-timing force-reference command should only be used to test and debug problems. Network synchronization problems may appear if network elements are left with this manual override setting. Once the system timing reference input has been forced, it may be cleared using the no force-reference command.

The CPM clock can be forced to use a specific input reference using the force-reference command.

When the command is executed, the CPM clock on the active CPM immediately switches its input reference to that specified by the command. If the specified input is not available (shutdown), or in a disqualified state, the CPM clock shall use the next qualified input reference based on the selection rules.

This command also affects the BITS output port on the active CPM. If the BITS output port selection is set to line-reference and the reference being forced is not the BITS input port, then the system uses the forced reference to generate the signal out the BITS output port. If the BITS output port selection is set to internal-clock, then the system uses the output of the CPM clock to generate the signal for the BITS output port.

On a CPM activity switch, the force command is cleared and normal reference selection is determined.

Debug configurations are not saved between reboots.

Note: The 7750 SR-c4 has two BITS input ports on the CFM. The force reference command on this system allows the selection of the specific port.

7750 SR-c4 CLI Syntax: **debug>sync-if-timing>force-reference** {**ref1** | **ref2** | **bits1** | **bits2**}

Parameters **ref1** — The clock will use the first timing reference.

ref2 — The clock will use the second timing reference.

bits — The clock will use the external network interface on the active CPM to be the highest priority input.

bits1 — (7750 SR-c4) The clock will use the bits1 timing reference.

bits2 — (7750 SR-c4) The clock will use the bits2 timing reference.

ptp — The clock will use the PTP slave as the timing reference.

system

Syntax	[no] **system**
Context	debug
Description	This command displays system debug information.

http-connections

Syntax	**http-connections** [*host-ip-address/mask*] **http-connections**
Context	debug>system
Description	This command displays HTTP connections debug information.
Parameters	*host-ip-address/mask* — Displays information for the specified host IP address and mask.

ntp

Syntax	[**no**] **router** *router-name* **interface** *ip-int-name*
Context	debug>system
Description	This command enables and configures debugging for NTP.
	The **no** form of the command disables debugging for NTP.
Parameters	*router-name* — Base, management

Default Base

ip-int-name — maximum 32 characters; must begin with a letter. If the string contains special characters (#, $, spaces, etc.), the entire string must be enclosed within double quotes.

persistence

Syntax	[**no**] **persistence**
Context	debug>system
Description	This command displays persistence debug information.

Tools Commands

redundancy

Syntax   **redundancy**

Context   tools>dump

Description   This command enables the context to dump redundancy parameters.

multi-chassis

Syntax   **multi-chassis**

Context   tools>dump>redundancy

Description   This command enables the context to dump multi-chassis parameters.

mc-endpoint

Syntax   **mc-endpoint peer** *ip-address*

Context   tools>dump>redundancy>multi-chassis

Description   This command dumps multi-chassis endpoint information.

Parameters   **peer** *ip-address* — Specifies the peer's IP address.

Sample Output

```
*A:Dut-B# tools dump redundancy multi-chassis mc-endpoint peer 3.1.1.3
MC Endpoint Peer Info
    peer addr                 : 3.1.1.3
    peer name                 : Dut-C
    peer name refs            : 1
    src addr conf             : Yes
    source addr               : 2.1.1.2
    num of mcep               : 1
    num of non-mcep           : 0
    own sess num              : 58ba0d39
    mc admin state            : Up
    tlv own mc admin state    : Up
    tlv peer mc admin state   : Up
    reachable                 : Yes

    own sys priority          : 50
    own sys id                : 00:03:fa:72:c3:c0
    peer sys priority         : 21
```

```
peer sys id              : 00:03:fa:c6:31:f8
master                   : No

conf boot timer          : 300
boot timer active        : No
conf ka intv             : 10
conf hold on num of fail : 3
tlv own ka intv          : 10
tlv peer ka intv         : 10
ka timeout tmr active    : Yes
ka timeout tmr intvl     : 20
ka timeout tmr time left : 4
peer ka intv             : 10
mc peer timed out        : No

initial peer conf rx     : Yes
peer-mc disabled         : No
initial peer conf sync   : Yes
peer conf sync           : Yes

own passive mode         : Disable
peer passive mode        : No

retransmit pending       : No
non-mcep retransmit pending : No
retransmit intvl         : 5
last tx time             : 1437130
last rx time             : 1437156

own bfd                  : Enable
peer bfd                 : Enable
bfd vrtr if              : 2
bfd handle               : 1
bfd state                : 3
bfd code                 : 0

*A:Dut-B#
```

mc-ring

Syntax **mc-ring**
mc-ring peer *ip-address* [**ring** *sync-tag*]

Context tools>dump>redundancy>multi-chassis

Description This command dumps multi-chassis ring information.

peer *ip-address* — Specifies the peer's IP address.

ring *sync-tag* — Specifies the ring's sync-tag created in the **config>redundancy>mc>peer>mcr> ring** context.

sync-database

Syntax   **sync-database** [**peer** *ip-address*] [**port** *port-id | lag-id*] [**sync-tag** *sync-tag*] [**application** *application*] [**detail**] [**type** *type*]

Context   tools>dump>redundancy>multi-chassis

Description   This command dumps MCS database information.

peer *ip-address* — Specifies the peer's IP address.

port *port-id | lag-id* — Indicates the port or LAG ID to be synchronized with the multi-chassis peer.

slot/mda/port or lag-*lag-id*

sync-tag *sync-tag* — Specifies a synchronization tag to be used while synchronizing this port with the multi-chassis peer.

application *application* — Specifies a particular multi-chassis peer synchronization protocol application.

> **Values**   dhcp-server: local dhcp server
> igmp: Internet group management protocol
> igmp-snooping: igmp-snooping
> mc-ring: multi-chassis ring
> mld-snooping: multicast listener discovery-snooping
> srrp: simple router redundancy protocol
> sub-host-trk: subscriber host tracking
> sub-mgmt: subscriber management

type *type* — Indicates the locally deleted or alarmed deleted entries in the MCS database per multi-chassis peer.

> **Values**   alarm-deleted, local-deleted

detail — Displays detailed information.

srrp-sync-data

Syntax   **srrp-sync-database** [**instance** *instance-id*] [**peer** *ip-address*]

Context   tools>dump>redundancy>multi-chassis

Description   This command dumps SRRP database information.

peer *ip-address* — Specifies the peer's IP address.

instance *instance-id* — Dumps information for the specified Subscriber Router Redundancy Protocol instance configured on this system.

> **Values**   1 — 4294967295

Clear Commands

application-assurance

Syntax	**application-assurance**
Context	clear
Description	This command clears application assurance commands.

group

Syntax	**group** *isa-aa-group-id* **statistics** **group** *isa-aa-group-id* **status**
Context	clear>app-assure
Description	This command clears application assurance group data.
Parameters	*isa-aa-group-id* — Specifies the ISA-AA group index.

> **Values**   1

status — Specifies that application assurance system statistics are cleared.

statistics — Specifies that application assurance statistics are cleared.

cron

Syntax	**cron action completed** [*action-name*] [**owner** *action-owner*]
Context	clear
Description	This command clears completed CRON action run history entries.
Parameters	**action-name** — Specifies the action name.

> **Values**   maximum 32 characters

owner *action-owner* — Specifies the owner name.

> **Default**   TiMOS CLI

redundancy

Syntax   **redundancy**

Context   clear

Description   This command enables the context to clear redundancy parameters.

multi-chassis

Syntax   **multi-chassis**

Context   clear>redundancy

Description   This command enables the context to clear multi-chassis parameters.

mc-mobile

Syntax   **mc-mobile statistics peer {ip-address | ipv6-address}**

Context   clear>redundancy

Description   This command enables the context to clear multi-chassis parameters.

mc-endpoint

Syntax   **mc-endpoint endpoint** [*mcep-id*] **statistics**
        mc-endpoint statistics
        mc-endpoint peer [*ip-address*] **statistics**

Context   clear>redundancy>multi-chassis

Description   This command clears multi-chassis endpoint statistics.

    endpoint *mcep-id* — Clears information for the specified multi-chassis endpoint ID.

        Values   1 — 4294967295

    peer *ip-address* — Clears information for the specified peer IP address.

    statistics — Clears statistics for this multi-chassis endpoint.

mc-lag

Syntax   **mc-lag** [**peer** *ip-address* [**lag** *lag-id*]]

Context	clear>redundancy>multi-chassis
Description	This command clears multi-chassis Link Aggregation Group (LAG) information.
Parameters	**peer** *ip-address* — Clears the specified address of the multi-chassis peer.
	lag *lag-id* — Clears the specified LAG on this system.

> **Values** 1 — 100

mc-ring

Syntax	**mc-ring**
Context	clear>redundancy>multi-chassis
Description	This command clears multi-chassis ring data.

debounce

Syntax	**debounce peer** *ip-address* **ring** *sync-tag*
Context	clear>redundancy>multi-chassis
Description	This command clears multi-chassis ring operational state debounce history.
Parameters	*ip-address* — Clears debounce historyf or the specified IP address.
	ring *sync-tag* — Clears debounce history for the specified sync tag.

ring-nodes

Syntax	**ring-nodes peer** *ip-address* **ring** *sync-tag*
Context	clear>redundancy>multi-chassis>mcr
Description	This command clears multi-chassis ring unreferenced ring nodes.
Parameters	*ip-address* — Clears ring statistics for the specified IP address.
	ring *sync-tag* — Clears ring statistics for the specified sync tag.

statistics

Syntax	**statistics**
Context	clear>redundancy>multi-chassis>mcr
Description	This command clears multi-chassis ring

global

Syntax   **global**

Context   clear>redundancy>multi-chassis>mcr>statistics

Description   This command clears multi-chassis ring global statistics.

peer

Syntax   **peer** *ip-address*

Context   clear>redundancy>multi-chassis>mcr>statistics

Description   This command clears multi-chassis ring peer statistics.

Parameters   *ip-address* — Clears ring peer statistics for the specified IP address.

ring

Syntax   **ring peer** *ip-address* **ring** *sync-tag*

Context   clear>redundancy>multi-chassis>mcr>statistics

Description   This command clears multi-chassis ring statistics.

Parameters   *ip-address* — Clears ring statistics for the specified IP address.

ring *sync-tag* — Clears ring statistics for the specified sync tag.

ring-node

Syntax   **ring-node peer** *ip-address* **ring** *sync-tag* **node** *ring-node-name*

Context   clear>redundancy>multi-chassis>mcr>statistics

Description   This command clears multi-chassis ring statistics.

Parameters   **peer** *ip-address* — Clears ring-node peer statistics for the specified IP address.

ring *sync-tag* — Clears ring-node peer statistics for the specified sync-tag.

node *ring-node-name* — Clears ring-node peer statistics for the specified ring node name.

ptp

Syntax   **ptp inactive-peers**

> **ptp statistics**
> **ptp peer** *ip_address* **statistics**

Context clear>system

Description This command clears PTP statistics.

Parameters **inactive-peers** — Removes PTP peers which are not currently exchanging PTP packets with the router.

 peer *ip-address* **statistics** — Clears statistics for the specified peer.

 statistics — Clears all ptp statistics.

sync-database

Syntax **sync-database peer** *ip-address* **all application** *application*
sync-database peer *ip-address* { **port** *port-id* | *lag-id* | **sync-tag** *sync-tag* } **application** *application*
sync-database peer *ip-address* **port** *port-id* | *lag-id* **sync-tag** *sync-tag* **application** *application*

Context clear>redundancy>multi-chassis

Description This command clears multi-chassis sync database information.

Parameters **peer** *ip-address* — Clears the specified address of the multi-chassis peer.

 port *port-id* — Clears the specified port ID of the multi-chassis peer.

 port *lag-id* — Clears the specified Link Aggregation Group (LAG) on this system.

 all — Clears all ports and/or sync tags.

 sync-tag *sync-tag* — Clears the synchronization tag used while synchronizing this port with the multi-chassis peer.

 application — Clears the specified application information that was synchronized with the multi-chassis peer.

  Values

all:	All supported applications
dhcp-server:	local dhcp server
igmp:	internet group management protocol
igmp-snooping:	igmp-snooping
mc-ring:	multi-chassis ring
mld-snooping:	multicast listener discovery-snooping
srrp:	simple router redundancy protocol
sub-host-trk	subscriber host tracking
sub-mgmt:	subscriber management

screen

Syntax **screen**

Context   clear

Description   This command allows an operator to clear the Telnet or console screen.

system

Syntax   **system sync-if-timing {ref1 | ref2 | bits}**

Context   clear

Description   This command allows an operator to individually clear (re-enable) a previously failed reference. As long as the reference is one of the valid options, this command is always executed. An inherent behavior enables the revertive mode which causes a re-evaluation of all available references.

sync-if-timing

Syntax   **system sync-if-timing {ref1 | ref2}**

Context   clear

Description   This command allows an operator to individually clear (re-enable) a previously failed reference. As long as the reference is one of the valid options, this command is always executed. An inherent behavior enables the revertive mode which causes a re-evaluation of all available references.

Parameters   **ref1** — clears the first timing reference

ref2 — clears the second timing reference

trace

Syntax   **trace log**

Context   clear

Description   This command allows an operator to clear the trace log.