Cisco MGX 8260 Command Line Interface Guide

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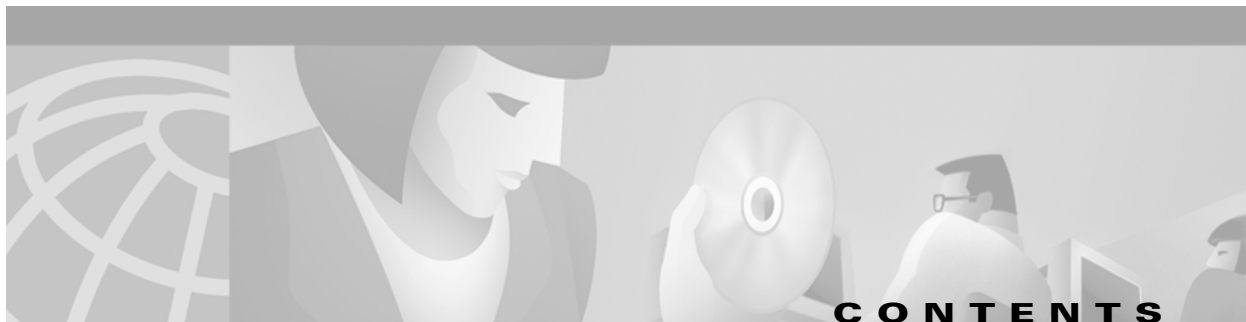
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About This Guide

This chapter describes the procedures for configuring, operating, and troubleshooting the MGX 8260 Media Gateway from the command line interface.

Document Overview

This guide contains instructions for configuring, operating, and troubleshooting the MGX 8260 Media Gateway.

Chapter 1, "Overview of the MGX 8260 Media Gateway"

Chapter 2, "System Management"

Chapter 3, "Card Management"

Chapter 4, "Service Management"

Chapter 5, "Call Control"

Chapter 6, "Alarm Surveillance"

Chapter 7, "Performance Monitoring"

Chapter 8, "Troubleshooting"

Chapter 9, "Command Reference"

Who Should Use This Guide

This guide is used by the following network experts:

- Component installers, who have experience installing equipment and cables for telecommunication and data communication products.

- Network operators/administrators, who have experience configuring telecommunication and data communication networks, protocols, and equipment.

- Network designers, who plan and specify components for telecommunication and data communication networks, protocols, and equipment.

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This guide uses the following conventions:

Warning	**Means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.**
Caution	Means be careful. In this situation, you might do something that could result in equipment damage or loss of data.
Note	Means take note. Notes contain helpful suggestions or references to materials not covered in this manual.
Timesaver	Means the described action saves time. You can save time by performing the action described in the paragraph.
Tips	Means the following information contains helpful information for performing the action described in the paragraph.

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Overview of the MGX 8260 Media Gateway

The MGX 8260 Media Gateway is a full-scale, carrier-grade platform with high-performance, high-density termination and switching of voice, and data traffic over circuit or packet based WANs. With a modular architecture and interfaces that are compatible with a wide range of access and backbone network types, the MGX 8260 Media Gateway accommodates a diverse and changing communications network.

Features and Benefits

The MGX 8260 incorporates multi-path switching intelligence, a speedy edge switch, and ease of operation. The following list briefly highlights the features of the MGX 8260 Media Gateway Media Gateway.

- Offload Dial Traffic and Increase Profitability

  The Cisco MGX 8260 is a high-density, carrier-class gateway that intelligently switches TDM and voice over IP (VoIP) traffic across packet networks to significantly reduce costs, improve availability, and manage escalating demand. The MGX 8260 can offload TDM and VoIP traffic across a range of interfaces and backbone networks:

  - Voice services across circuit-switched networks (PSTN/SS7)

  - Dial traffic offloading for cost-effective wholesale delivery to Internet service providers

  - TDM to VoIP gateway

  By offloading dial traffic directly to network access servers, the MGX 8260 eliminates long hold-time calls from your TDM network, thereby freeing costly TDM ports for voice calls. The MGX 8260 maximizes revenue-generating TDM services, reduces total cost of ownership by improving data transport efficiency, and lays the foundation for a New World IP+ATM infrastructure that delivers tomorrow's value-added services.

- Leverage High Density and High Performance

  With the highest density in the industry, the MGX 8260 media gateway scales from 384 ports to more than 70,000 TDM ports in a seven-foot telco rack. More than 20 racks of traditional circuit switching equipment would be required to provision the same number of ports as one MGX 8260 gateway. The MGX 8260 scales up as necessary, when necessary, for rapid time to revenue.

  By using advanced digital signal processing (DSP) design, RISC processing, and patented technology for pipe- lining voice packets, the MGX 8260 also delivers unmatched gateway performance. Choose from 5 Gbps to 15 Gbps of switching power with the system's

interchangeable switch fabrics. At the same time, ensure the lowest possible network delay. The MGX 8260 limits delay to 40 milliseconds (between two MGX 8260 gateways) for VoIP packetization/ de-packetization.

- Maximize Service Availability

The MGX 8260 provides the industry's highest availability—99.999 percent—to ensure that your customers enjoy always-on service. A redundant architecture and hot-swappable modules eliminate single points of failure. The MGX 8260 provides built-in 1:1 redundancy on all high-speed modules and interfaces, as well as 1:N redundancy for narrowband and DSP resources. The MGX 8260 platform also incorporates a redundant, high-speed hybrid bus design for switching between TDM and packet services. With no single point of failure, calls in progress are maintained even if the switch or line cards fail—a significant advantage over TDM switches.

Excellent serviceability also maximizes platform reliability. Technicians have quick and easy access to the platform via a passive rear panel where network connections attach to physical interface cards. Seamless software upgrades ensure that new features are added without downtime or service disruptions.

- Deliver New Services

Based on the Cisco Open Packet Telephony framework, the MGX 8260 interoperates with your existing technology and transitions smoothly to emerging value-added services. The Open Packet Telephony framework, an industry-standard open interface, separates the call control layer from the switching fabric. This open interface integrates the MGX 8260 with your operations support systems, service creation environments, and media gateway controllers based on the Media Gateway Control Protocol (MGCP).

The MGX 8260's open interfaces enable you to quickly and cost-effectively develop and deploy new revenue- generating services. And by moving data streams onto a packet network you not only add a revenue source, you also are positioned to support New World value-added services—the cornerstone of future profitability. As new industry-standard networking capabilities emerge, you will be able to leverage them.

Managing the MGX 8260 Media Gateway

You can manage the MGX 8260 from any of the following interfaces:

- WebViewer
- SNMP
- Command line interface

The MGX 8260 gateway offers multiple levels of security access, including viewing, configuration, system administration, and super-user control. It also supports configuration file backup and restore, as well as software upgrades. The following diagram shows the management interfaces and the internal databases they control (see Figure 1-1).

Figure 1-1   MGX 8260 Management Architecture

WebViewer Management Interface

The WebViewer controls and monitors all MGX 8260 parameters, and typically performs the following operations:

- Configuration
- Alarm management
- Statistics generation
- Diagnosis
- Real-time monitoring

SNMP Manager

With SNMP you can integrate the MGX 8260 with existing NMS management, provisioning, and Operations Support Systems. All system attributes are accessible through SNMP, and the MGX 8260 generates trap messages to an event collector.

An SNMP manager has all WebViewer functionality, plus the following additional operations:

- Viewing network map
- Managing traps

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Command Line Interface

All MGX 8260 functions and features are available at the command line interface. During initial system configuration you can only use the command line interface via the console port. Some configuration tasks can only be performed from the command line interface.

Front Panel Controls and Indicators

The MGX Media Gateway has four types of cards, with the following indicator groups (see Figure 1-2).

- SCC (System Controller Card)—Displays trunk and system indicator groups
- NSC (Narrowband Service Card)—Displays DS1 line group
- BSC (Broadband Service Card)—Displays DS3 line group
- DMC (Distribution Matrix Card)—Displays DS3 line group

Figure 1-2   Front Panel Indicators

System Indicators

The SCC has the system indicators.

Table 1-1   System Indicators

LED	Indication	Status
LINE	off	management interface failure
	green	management Ethernet up (LAN1 or LAN2)
ACT	flashing green	management Ethernet data activity (LAN1 or LAN2)
ALMC	green	no current alarm
	yellow	minor alarm
	red	major alarm
ALMH	green	no alarm history
	yellow	minor alarm, history
	red	major alarm, history
DISK	flashing green	hard disk access
PWR A/B	off	power interruption
	green	normal power
	yellow	low or high voltage warning
	red	low or high voltage alarm

Broadband Line Indicators

The broadband line indicators consist of a pair of LEDs for each Fast Ethernet that indicate trunk configuration, activity, and status.

Table 1-2   Trunk Group Indicators

LED	Indication	Status
FDX	off	Half duplex operation
	green	Full duplex operation
ACT	off	Ethernet disconnected
	green	Ethernet signal connected and up
	flashing green	Ethernet data activity

Card and Line Indicators

The NSC, BSC, and DMC line cards have the following indicators:

Table 1-3   Card and Line Indicators

LED	Card or Line	Indication	Status
CARD	SCC	green	card active
		yellow	standby (protection mode)
		flashing yellow	file download
		red	card failure
		flashing red	card boot or mismatch
	BSC, NSC, and DMC	green	card active
		yellow	standby (protection mode)
		red	card fail
LINE	DS1 and DS3	green	normal operation
		flashing green	bert test active
		yellow	minor alarm
		flashing yellow	loopback active
		red	major alarm
	Fast Ethernet	green	link up
		yellow	link down in inactive mode
		red	link down in active mode

Front Panel Controls

The SCC card has two buttons:

- CLR—clears the alarm history

  The ALMC and ALMH indicators display the current and historical alarm severity, respectively. Pressing this button clears the historical alarms. For example, if ALMC is yellow and ALMH is red, the CLR button changes the ALMH indication from red to yellow.

- ACO—alarm cutoff

  You can configure the MGX 8260 to report alarm conditions through contact closures that activate audible or visual alarms. The ACO button stops these alarm indication by releasing the alarm relays.

System Management

System management commands configure the parameters of an MGX 8260 node that define overall operation and interactions with other nodes and servers.

Logging On

Before you can configure the MGX 8260 Media Gateway, you must log on as a user with the privilege to change system parameters. You need SuperUser privileges to change most system-level settings. To log on, follow these steps:

Step 1   Open a telnet session with the MGX 8260 Media Gateway. You need to know the host name or IP address for the desired MGX 8260 node.

Step 2   At the User Id prompt, enter your user name. On a new system, use **SuperUser**.

Step 3   At the Password prompt, enter your password. On a new system, use **cisco**.

The MGX 8260 Media Gateway displays a command line prompt.

Configuration Tasks for System Initialization

See the following sections for configuration tasks related to managing the system:

- Configuring System Security (Required)
- Configuring Node Parameters (Required)
- Configuring the Management Interfaces (Required)
- Configuring IP Routes (Optional)
- Synchronizing the System Clock (Required)

You use the command line interface to enter system management commands.

Configuring System Security

The MGX 8260 controls user access two ways:

- User accounts and passwords
- SNMP communities

Configuring User Accounts

The MGX 8260 Media Gateway enforces security with user accounts and access levels. Users must log onto the MGX 8260 Media Gateway before performing any task, and authenticated users can perform only those tasks permitted by their access level. The MGX 8260 Media Gateway supports up to 20 user accounts, each with access privileges ranging from full control to guest (see Table 2-1).

Table 2-1   User Accounts and Access Privileges

Access Level	Account type	Command groups
1	SuperUser	Access all features
2	Administrator	Configure and view all features except user profiles and community strings
3	Provisioning	Configure and view system, port, lines, end points, and connections
4	Maintenance	Access selected level 3 commands
5	Operator	View system, port, lines, end points, and connections
6	Guest	View system, common lines and ports

A new system has a default SuperUser account. To prohibit unauthorized access to the equipment, replace the default account with a unique one.

Note   The Command Line Reference lists the specific access level for each command.

Viewing User Profiles

To list existing user profiles, follow these steps:

Step 1   Log on to the MGX 8260 Media Gateway at access level 1.

Step 2   Enter the **lsusps** command.

The system lists the users.

```
===========================================================
              User Profile Entries (lsusps)
===========================================================
Index   User Identifier    Access Level
=====   ===============    ===========
  1          William              1
  2          user3                3
```

Adding User Profiles

Only users with access level 1 can add new profiles to the MGX 8260 Media Gateway.

To add a new user profile, follow these steps:

Step 1   Log on to the MGX 8260 Media Gateway at access level 1.

Step 2   Enter the **addusp** command, specifying the user ID and access level:

The system adds a new user with a default password that matches the user id.

The following example adds a user named William with a default password of William and an access level of 1:

```
addusp William 1
```

Change the default password to a unique password as described in the next section.

Changing Passwords

Every user can change their own password. If the existing password is unknown, a level 1 user must delete the account and add a new one.

To change a password, follow these steps:

Step 1   Log onto the account you want to change.

Enter the **chpwd** command and respond to the following prompts that appear:

```
Rules:
    1. Password length must be 4 - 10
    2. First character must be alphanumeric
    3. Only printable characters are allowed
    4. Space not allowed


Enter Password : *****
New Password   : ********
Verify Password: ********
```

The system updates the account password.

Deleting User Profiles

To delete a user profile, follow these steps:

Step 1   Log on to the MGX 8260 Media Gateway at access level 1.

Step 2   Enter the **delusp** command, specifying the ID of the user whose profile you want to delete:

The system removes the user profile from the database.

For example, the following command removes the user profile for William:

```
delusp William
```

Viewing Current Logins

You can view summary or detail information for current logins.

To view summary information about all active logins, use the **lslogins** command. The system displays the following summary information:

```
===================================================================================
                      User Login Session Entries (lslogins)
===================================================================================
Index     User ID     AcLevel  LoginTIME  LoginDATE      IP Address     SesType
=====   ===============  =======  =========  ==========  ===============  =======
  1          SuperUser      1      12:08:02  08/15/2000   172.16.252.107   telnet
```

Displayed Information	Description
Index	The index number of the user account
User ID	The name of the user
AcLevel	The access level of the user
LoginTIME	The time the user logged in
LoginDATE	The date the user logged in
IP Address	The IP address of the user's host
SessType	The type of login session the user is using, either telnet, console, or web

To view detail information about one active logins, use the **lslogin** command. The system displays the following summary information:

```
=============================================================
                   User Session Entry (lslogin)
=============================================================
User Session Index       :   1
User Identifier          :   SuperUser
User Access Level        :   1
User Login Time          :   12:08:02
User Login Date          :   08/15/2000
User Ligin IP Address    :   172.16.252.107
User Login Session Type  :   telnet
```

For a description of the listing, see the previous procedure for **lslogins**.

Configuring SNMP Community Strings

When managing the MGX 8260 Media Gateway from a SNMP manager, security is enforced with password-like community strings. SNMP communities are groupings of workstations and servers (or gateways) that can manage the MGX 8260. Community strings are important when managing the MGX 8260 Media Gateway from a Network Management System, like HP Openview. You can configure up to 15 community strings.

Viewing Community Strings

To view a particular community string, enter the **lscms** command, specifying the community string index.

The system displays the community string information:

```
========================================================================
              Community String Entry (lscms)
========================================================================
        Community String Index :1
        Community String        :Public
        Manager IP Address       :0.0.0.0
        Privilege                :read-write
```

Displayed Information	Description
Community String Index	The commStrTable index number, from 1 to 15. If you don't know the index, list all community strings first and identify the string of interest. The following procedure shows how to list all community strings.
Community String	The name of the community string.
Manager IP Address	The IP address of the manager associated with this string.
Privilege	The manager's privilege, either read-write or read-only.

To view all community strings, enter the **lscmss** command.

A list of all SNMP community strings is displayed, along with the corresponding index values, manager IP addresses, and privileges.

```
==============================================================
              Community String Entries (lscmss)
==============================================================
Index    Manager IP Address    Privilege      Community String
=====    ==================    ==========     ==================
  1          10.1.1.2          read-only        public
  2          10.1.1.3          read-write       private
```

For a description of the output, refer to the description of the **lscms** command in the previous section.

Adding Community Strings

To add a community string, enter the **addcms** command, specifying the community, such as "public", the IP address of the SNMP manager, and the privilege (read-only = 1 or read-write = 2). An IP address of 0.0.0.0 specifies all SNMP managers. Community strings contain up to 20 characters.

The following command adds a public community string with read-write privilege for all SNMP managers:

```
addcms Public 10.0.0.0 2
```

Deleting Community Strings

To delete a community string, enter the **delcms** command, specifying the community string and IP address.

For example, the following command deletes the Public community string:

```
delcms Public 0.0.0.0
```

Assigning a tftp Security Key

The tftp key authenticates file transfers between the MGX 8260 Media Gateway and a tftp client. If the key is not set, or if the key provided during the file transfer does not match this key, the file is not transferred.

To set the security key, enter the **chkey** command, specifying the security key. The system records the security key.

To view the security key, enter the **lskey** command. The system displays the security key.

Configuring Node Parameters

System-wide parameters apply to the MGX 8260 node as a whole. System-wide parameters include the following settings:

- Rack number, node name, and node number

- Node type, backplane type and serial number (read/only)

- Line type

- Node number

- Gateway control protocol type

- Date, time, and time zone

Viewing Node Parameters

To view system-wide parameters, enter the **lsndinf** command.

The system displays the node and backplane information:

```
=======================================================================
          Node Information (lsndinf)
=======================================================================
System Rack Number      :    1
System Node Name        :    MMS
System Node Type        :    mgx8260
System BackPlane Type   :    1
System BackPlane Serial #:   BKPLN
System DS1 Type         :    t1
System Node Number      :    1
Gateway Control Protocol :   mgcp
```

Displayed Information	Description
System Rack Number	The physical location of the shelf.
System Node Name	The user-defined name for this node
System Node Type	The node type—MGX 8260
System BackPlaneType	The Cisco backplane type
System BackPlane Serial #	The backplane serial number
System DS1 Type	The line type setting, either T1 or E1
System Node Number	The user-defined number for this node
Gateway Control Protocol	The call control protocol setting, either MGCP or IPDC

To view the date and time, enter the **lsdate** command.

The system displays the date, time, and time zone:

```
=======================================================================
          System Time and Date Information (lsdate)
=======================================================================
Date                   :       03/21/1999
Time                   :       22:14:12
TimeZone               :       gmtplus12
```

Setting Node Parameters

Normally, system-wide parameters are set during installation.

To change node parameters, follow these steps:

Step 1   Configure the system rack number, node name, node number, and DS1 type using the **chndinf** command.

Step 2   Set the system date, time, or timezone, using the **chdate** and **chtimezn** commands.

Changing the Interface Line Type

Use this command to configure the chassis for T1 or E1 lines - you can't mix T1 and E1 lines on a single chassis. Before switching from T1 to E1, verify the following conditions:

- The chassis has no BSCs installed
- The database contains no BSC configuration information
- The NSCs have no DS1 lines configured

When switching from E1 to T1, make sure there are no E1 lines configured.

To change the line type to DS1 or E1, use the **chsyslnmd** command. The chassis automatically resets and restarts with the selected line type.

Warning   **Changing DS1 line type interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

Changing the Gateway Control Protocol

To change the protocol to MGCP or IPDC, use the **chprotocol** command. The chassis automatically resets and restarts with the selected protocol.

Warning   **Changing the gateway protocol interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

Configuring the Management Interfaces

You configure the MGX 8260 management interface for local or remote operation by setting the appropriate IP addresses and management paths. Assign management IP addresses for each of the following management interfaces that you plan to use:

- Ethernet 10BaseT management interface IP1 and IP2

- In-band management path

Viewing Management Port Parameters

You view all management parameters with a single command. The following management port parameters are displayed:

- Ethernet port IP addresses

- In-band IP address

- MGX 8260 MAC address

To view management port parameters, enter the **lsmgips** command.

The management interface configuration is displayed:

```
============================================================================
           Management Interfaces Configuration (lsmgips)
============================================================================
SNMP Interface IP1 Address   :         10.15.26.20
SNMP Interface IP1 Mask      :         255.255.255.0
SNMP Interface IP2 Address   :         10.15.27.20
SNMP Interface IP2 Mask      :         255.255.255.0
SNMP Interface MAC Address   :         00:50:a3:00:26:c8
In-Band Interface Address    :         10.15.28.20
In-Band Interface Mask       :         255.255.255.0
```

Displayed Information	Description
SNMP Interface IP1 Address	The IP address of the primary 10BaseT management interface
SNMP Interface IP1 Mask	The IP subnet mask for the primary interface
SNMP Interface IP2 Address	The IP address for the secondary 10BaseT management interface
SNMP Interface IP2 Mask	The IP subnet mask for the secondary interface
SNMP Interface MAC Address	The physical MAC address for the MGX 8260 Media Gateway
Inband Interface Address	The IP address of the in-band management interface
Inband Interface Mask	The IP subnet mask for the in-band management interface

Configuring the 10BaseT Management Port

You use the SCC 10BaseT management port for http, telnet, SNMP, and TFTP sessions. Management hosts are physically connected to the 10BaseT port of the MGX 8260 Media Gateway (see Figure 2-1).

Figure 2-1   10BaseT Management Connections

Tips   Change management IP address from the console port rather than a telnet session.

To configure the 10BaseT management port, follow these steps:

Step 1   Connect a VT100 terminal to the console port.

Step 2   Log onto the MGX 8260 Media Gateway as a SuperUser.

Step 3   Set the IP address and mask for the primary management interface using the **chsysip1** command.

For example, with a system IP address of 10.15.26.20 and a 24-bit subnet mask, enter the following command:

```
chsysip1 10.15.26.20 255.255.255.0
```

Step 4   Optionally, set the IP address and mask for the secondary management interface using the **chsysip2** command.

For example;

```
chsysip2 10.15.27.20 255.255.255.0
```

Step 5   Specify the IP address of a gateway router for management traffic using the **chgw** command.

For example:

```
chgw 10.15.27.1
```

Note   This gateway address serves both management interfaces. To add additional routes, see Adding IP Routes, page 2-11.

Configuring In-Band Management Paths

Configure an in-band management path if you want to manage the MGX 8260 Media Gateway via a Fast Ethernet channel. Before configuring an in-band management path, make sure the Fast Ethernet card is installed on the SCC.

To configure an in-band management path, follow these steps:

Step 1   Contact your network administrator to obtain an IP address that is compatible with your in-band network.

Step 2   Verify that the chassis is configured for Fast Ethernet lines.

Step 3   Set the in-band management IP address, using the **chibip** command.

For example, if you assigned a IP address of 10.15.28.20 for the in-band path and you use a 24-bit subnet mask, enter the following command:

```
chibip 10.15.28.20 255.255.255.0
```

Configuring IP Routes

This section describes the process of viewing, adding, or deleting IP routes.

Viewing IP Routes

To view a specific route, use the **lsiproute** command, specifying the destination address. The system displays route details:

```
=======================================================================
                    IP Route Parameters (lsiproute)
=======================================================================
Destination                :    192.168.41.0
Gateway (Next Hop)         :    192.168.41.1
Interface Index            :    1
Mask                       :    255.255.255.0
Type                       :    indirect
Protocol                   :    other
Age                        :    153647
Mib Information            :    0.0
Metric 1 (Primary Routing) :    1
Metric 2 (Alternate Routing) :  -1
Metric 3 (Alternate Routing) :  -1
Metric 4 (Alternate Routing) :  -1
Metric 5 (Alternate Routing) :  -1
```

Displayed Information	Description
Destination	The destination IP address.
Gateway	The gateway, or next hop, for the route.
IF	The interface identifier: 1—Primary Ethernet port 2—Secondary Ethernet port 3—In-band path
Mask	The subnet mask for the route.
Type	The type of route, such as direct or indirect
Protocol	The protocol type, such as local or other.
Age	The age of the route is seconds.
Mib Information	The version of the MIB associated with the interface.
Metric 1-5	The primary and alternate route metrics. These are specific to the protocol type, but -1 indicates not used.

To view all IP routes, use the **lsiproutes** command.

The system displays the current route information:

```
==================================================================
               IP Routes   (lsiproutes)
==================================================================
   Destination          Gateway          IF          Mask

===============     ===============     ======     ================
       0.0.0.0        192.168.38.1         1              0.0.0.0
  192.168.38.0      192.168.38.221         1        255.255.255.0
  192.168.39.0      192.168.39.221         2        255.255.255.0
  192.168.40.0      192.168.40.221         3        255.255.255.0
  192.168.41.0       192.168.41.1         1        255.255.255.0
  192.168.50.0       192.168.50.1         1        255.255.255.0
```

For a description of the output, refer to the description of the **lsiproute** command in the previous section.

Adding IP Routes

You can add a static route to destinations other than the default gateway.

To add an IP route, follow these steps:

Step 1   Type the **addiproute** command, specifying the destination address, next hop, and subnet mask.

Step 2   Verify the route addition using the **lsiproutes** command.

Deleting IP Routes

To delete an IP route, follow these steps:

Step 1   Type the **deliproute** command, specifying the destination address.

Step 2   Verify the route deletion using the **lsiproutes** command.

Synchronizing the System Clock

The MGX 8260 clock module has three synchronization options:

- BITS (Building Integrated Timing Source)—A high quality timing source that synchronizes all equipment in the building
- Line—A clock derived from the receive line signal
- Local—An internal MGX 8260 timing source

You assign one clock source as the primary source and another as the secondary source. When using the line clock source, specify both the line and slot associated with the source.

During normal operation, the primary clock is the active source and the secondary clock is the backup source. If the active source fails, the MGX 8260 Media Gateway switches to the backup clock and reports an alarm. You can also switch to the backup source manually. This section explains how to set primary and secondary clocks and view clock status.

Setting Clock Parameters

To set the clock synchronization, specify the primary and secondary clocks using the **chpclksrc** and **chsclksrc** commands, specifying the slot, line, source type and card type. Use the following table as a guide:

Source	Slot	Line	ClkSrcType	ClkSrcCardType
DS3 line	BSC: 11to 16 DMC: 7 or 8	BSC DS3 lines: 501 to 506 DMC DS3 lines: 1 to 6	1=BroadBandClk	Optional
DS1 line	NSC: 1 to 8, 11-16	NSC DS1 lines: 1 to 16	2=NarrowBandClk	Optional
Bits input	9	Optional[1]	3=ExternalClk	1-BITS
SONET line	9	SCC, OC3 type: 1 to 4	3= ExternalClk	2-OC3
Internal	9	Optional	4=InternalClk	Optional

1. Optional settings are ignored, but they must be valid entries.

The following example selects the BITS clock as the timing source:

```
chpclksrc 9 1 3 1
```

The line number doesn't matter, but you need to specify it to execute the command.

Viewing Clock Parameters

You view clock status with a single command. The clock parameters are:

- Status of the primary and secondary clocks
- The current clock source
- The lowest stratum level of the current clock source

To view clock status, enter the **lsclksrcs** command.

The system displays the clock status:

```
=======================================================================
         Clock Configuration (lsclksrcs)
=======================================================================
Primary Clock Source Type  :      externalClk
Primary Clock Source Slot  :      9
Primary Clock Source Line  :      1
Secondary Clock Source Type:      internalClk
Secondary Clock Source Slot:      9
Secondary Clock Source Line:      1
Primary Clock Status       :      ok
Secondary Clock Status     :      ok
Clock Source Card Type     :      *
Clock Stratum              :      level4
Master Clock               :      primary
Current Clock              :      primary
```

Displayed Information	Description
Primary (or Secondary) Clock Source Type	The clock source type: • broadBandClk • narrowBandClk • externalClk • internalClk
Primary (or Secondary) Clock Source Slot	The slot number for the clock source. Values: 1 to 16
Primary (or Secondary) Clock Source Line	The line number for the clock source. Values: • NSC DS1 lines: 1 to 16 • BSC DS3 lines: 501 to 506 • DMC DS3 lines: 1 to 6 • SCC, OC3 type: 1 to 4 • SCC, BITS type: 1
Primary (or Secondary) Clock Status	The clock status: • ok • noClock • inaccurate
Clock (or Secondary) Source Type	The clock source card type: • bits • oc3

Displayed Information	Description
Clock Stratum	The level of Stratum clock: • level 3 (reserved for future use) • level 4
Master Clock	The master clock source: • primary • secondary • internal
Current Clock	The current clock source: • primary • secondary • internal

Switching to the Secondary Clock

You can force the system to switch between the primary and secondary clocks. The switching direction depends on the current clock. During normal operation, the current clock is the primary clock.

To switch to the clock sources, enter the **swclk** command.

Card Management

This chapter explains how to configure cards and lines for service delivery.

Configuring Cards

Card parameters control the operational characteristics of the card as a whole. The MGX 8260 Media Gateway supports the following cards:

- SCC (System Controller Card)

  The SCC provides overall system control and database management for the shelf. In addition, the card provides optional broadband interfaces to the WAN backbone network, such as Fast Ethernet or SONET. SCCs are always in slots 9 or 10. When SCCs are installed in both slots, they operate as a redundant pair.

- NSC (Narrowband Service Card)

  The NSC adapts different media types and switches signals between carrier networks and services. The NSC supports a range of service and applications for both voice and data calls. NSCs are always in slots 1-8 and 11-16.

- BSC (Broadband Service Card)

  The BSC adapts different media types and switches signals between carrier networks and services. The BSC supports a range of service and applications for both voice and data calls, including DS3 circuits. BSCs are always in slots 11-16.

- DMC (Distribution Matrix Card)

  The MGX 8260 Media Gateway supports full multiplexing/demultiplexing and TDM-based switching at DS3 rates through the DMC. The DMC receives DS3 signals and distributes the services across NSC modules for processing. DMCs are always in slots 7 or 8.

Configuration Tasks for Cards

See the following sections for card configuration tasks.

- Configuring Card Parameters
- Configuring BSC or NSC Redundancy

Configuring Card Parameters

This sections describes how to view and set card-level parameters.

Viewing Card Configuration and Status

To list information for a single card, enter the **lscd** command, specifying the card location by a slot number in the MGX 8260 chassis. Slots are numbered from 1 through 16, starting at the left.

The system displays the card information.

```
========================================================================
                     Physical Card Entry (lscd)
========================================================================
Physical Card Number          :        11
Logical Card Number           :        11
Front Card Type               :        bsc
Back Card Type                :        dmcBsc6T3
Daughter Card 1 Type          :        bim4T3E3
Daughter Card 2 Type          :        *
Card State                    :        active
Card Service                  :        0
Hardware Revision             :        1
Firmware Revision             :        BSC_B_r01.01.b1
Software Revision             :        BSC_r01.01.b1
Front Card Serial #           :        bsc-093
Back Card Serial #            :        t3e3-141
Fab Version                   :
Failure Reason                :        failResonNone
Reset Reason                  :        watchDogReset
Mismatch Reason               :        noMismatch
Integrated line alarm state   :        Clear
Line performance alarm state  :        Clear
EMM temperature alarm state   :        Clear
EMM voltage alarm state       :        Clear
SW error alarm state          :        Clear
Component failure alarm state :        Clear
ATM Queue Profile #           :        1
RAM Backup                    :        disabled
Interface Mode                :        bkcd
```

Displayed Information	Description
Physical Card Number	The physical slot number of the card
Logical Card Number	The logical slot number of the card
Front Card Type	The front card type: • dmc—Distribution Matrix Card. • scc—Switch Control Card. • bsc—Broadband Service Card. • nsc—Narrowband Service Card.

Displayed Information	Description
Back Card Type	The back card type: • scc-4fe—Switch Control Card with four Fast Ethernet (100 Mbps) ports • scc4OC3—Switch Control Card with four OC-3 ports • scc4OC3MM—Switch Control Card with four mulit-mode OC-3 ports • bsc12T3—Broadband Service Card with 12 DS3 ports • dmcBsc6t3—Distribution Matrix Card or BSC with six DS3 ports • nsc-16t1e1—Narrowband Service Card with sixteen T1 ports • rnd16-t1e1—Redundancy backcard for NSC • blank—No back card
Daughter Card1 Type	The type of daughter card installed on the NSC or SCC card: NSC types: • msmDSPV—Multiservice module DSP voice SCC type: • bim4FE—Broadband Interface Module with four Fast Ethernet ports • bim4OC3ATM—Broadband Interface Module with 4 OC-3 ATM ports
Daughter Card 2 Type	The type of secondary daughter card installed. See Dgtr Crd1 types.
Card State	The status of the card: • empty • in-boot • active • standby • mismatch • failed • unknown
Card Service	A bitmap of the services offered by the card. When set, the card offers the service: • bit 0: ATM • bit 1: Frame Relay (reserved for future use) • bit 2: Voice • bit 3: IP Emulation (reserved for future use) For more information, see the "Understanding Bitmaps" section on page 9-2.
Hardware Revision	The hardware revision of the card.
Firmware Revision	The firmware revision of the card.
Software Revision	The software revision of the card.
Front Card Serial #	The serial number of the front card.
Back Card Serial #	The serial number of the back card.
Fab Version	The fab version of the card.

Displayed Information	Description
Failure Reason	The reason of the last card failure, as follows: • hwMSMFailed—One or both MSMs failed • hwSarFailed—Sar failed • hwPCIAErrInt—PCI-A error interrupt • hwASXFailed—ASX failed • hwALBMFailed—ALM or ABM switch port failed • hwCubitFailed—Cubit failed • hwBusCycleTmOut—Bus cycle timeout • hwHardDrvFailed—Hard drive failed • hwMgmtEthFailed—Management Ethernet failed • hwDMCFailed—DMC failed • hwSerlPtFailed—Serial port failed • swStrvBkgdTask—Background task starvation • swKeyTaskFailed—Critical task failed • swFailReason—Software failed • hwFailReason—Hardware failed • heartBeatLost—Lost the heartbeat • imageDownLoadFailed—Image download failed • failedToMoveToActive—Transition to active state failed • failedToInitApps—Application initialization failed • configDownLoadFail—Configuration download failed • remoteCardFailed—Remote card reported a failure
Reset Reason	The reason for the mismatch for the card, as follows: • noMismatch • configMismatchHw—configuration file and hardware do not match • fcAndBcMismatch—the front and back card do not match • daughterCardBcMismatch—the daughter card and back card do not match • peerHardWareMismatch—the two SCC cards do not match • dmcMismatch—DMC configuration mismatch with the hardware • noBackCard—No back card • noDaughterCard—None or invalid daughter cards

Displayed Information	Description
Mismatch Reason	The reason the card was last reset, as follows: • shellReset • hardReboot • softRebootNoImage • softReboot • chipError • eventLogReset • taskError • softwareUpgrade • gracefulSwitchover • dmcRemovedSwitchover • sccBcRemovedSwitchover • appsInitFailed • plfmTimerExpired • ideReformat, • unknownResetReason
Integrated line alarm state	The state of the integrated line alarm for the card: • No Alarm • Minor Alarm • Major Alarm
Line performance alarm state	The state of the line performance alarm for the card: • No Alarm • Minor Alarm • Major Alarm
EMM temperature alarm state	The state of the EMM temperature alarm for the card: • No Alarm • Minor Alarm • Major Alarm
EMM voltage alarm state	The state of the EMM voltage alarm for the card: • No Alarm • Minor Alarm • Major Alarm
SW error alarm state	The state of the software error alarm for the card: • No Alarm • Minor Alarm • Major Alarm

Displayed Information	Description
Component failure alarm state	The state of the component alarm for the card: • No Alarm • Minor Alarm • Major Alarm
ATM Queue Profile	The queue profile for ATM traffic on the SCC. Valid profiles: 1 to 10.
RAM Backup	The status of RAM backup facility: • enabled • disabled
Interface Mode	The interface mode: • bkcd —Use the back card signals • bkpln—Use back plane signals • npbkcd—No back card mode For more information, see the "Choosing the NSC Interface Mode" section on page 3-8.

Viewing Summary Information for Cards

To list summary information for all cards, enter the **lscds** command.

The system displays information for all cards:

```
==================================================================
                    Physical Card Entries (lscds)
==================================================================
PhyCd LogCd  FC      BC      Dgtr Cd1   Dgtr Cd2  Card State   SW Rev
===== ===== ====  =========  =========  ========  ==========  ==========
    1     1  nsc   nmc16T1E1   msmDSPV   msmDSPV   active      NSC_r01.01.b1
    2     2  nsc   nmc16T1E1   msmDSPV   msmDSPV   active      NSC_r01.01.b1
    3     3  nsc   nmc16T1E1   msmDSPV   msmDSPV   active      NSC_r01.01.b1
    4     4  nsc   rnd16T1E1   msmDSPV   msmDSPV   standby     NSC_r01.01.b1
    5     5  nsc   nmc16T1E1   msmDSPV   msmDSPV   active      NSC_r01.01.b1
    6     6  nsc   nmc16T1E1   msmDSPV   msmDSPV   active      NSC_r01.01.b1
    7     7   *        *          *          *     empty       Unknown
    8     8   *        *          *          *     empty       Unknown
    9     9  scc     scc4FE     bim4FE       *     standby     SCC_r01.01.b1
   10     9  scc     scc4FE     bim4FE       *     active      SCC_r01.01.b1
   11    11  bsc   dmcBsc6T3   bim4T3E3      *     active      BSC_r01.01.b1
   12    12  bsc   dmcBsc6T3   bim4T3E3      *     active      BSC_r01.01.b1
   13    13  bsc   dmcBsc6T3   bim4T3E3      *     active      BSC_r01.01.b1
   14    14  bsc   dmcBsc6T3   bim4T3E3      *     active      BSC_r01.01.b1
   15    15  bsc   dmcBsc6T3   bim4T3E3      *     active      BSC_r01.01.b1
   16    16   *        *          *          *     empty       Unknown
```

Displayed Information	Description
PhyCd	The physical slot number of the card
LogCd	The logical slot number of the card
FC	The front card type
BC	The back card type
Dgtr Cd1	The type of daughter card installed on the NSC or SCC card
Dgtr Cd2	The type of secondary daughter card installed on the NSC card
Card State	The status of the card
SW Rev	The software release and version that is running on the card. The first letters identify the card type and the numbers identify the major release, minor release, and version.

Viewing MSM Configuration and Status

To view DSP information, enter the **lsdsps** command.

The system lists current DSP information:

```
=======================================================================
              MultiService Module (DSP) Entries (lsdsps)
=======================================================================
  Slot Number       DSP MSM Number    DSP Number          DSP Status
==============    ================  ================    ================
      2                  1                 1                active
      2                  1                 2                active
      2                  1                 3                active
      2                  1                 4                active
      2                  1                 5                active
      2                  1                 6                active
      2                  1                 7                active
      2                  1                 8                active
```

Displayed Information	Description
Slot Number	The slot number of the multi-service module
DSP MSM Number	The multi-service module number
DSP Number	The DSP number on the multi-service module
DSP Status	The status of the DSP

To view MSM information, enter the **lsmsms** command.

The system lists current MSM information:

```
=======================================================================
              MultiService Module (MSM) Entries (lsmsms)
=======================================================================
  Slot Number        MSM Number       MSM Type          MSM Status
==============    ================  ==============    ================
      2                  1            msmDSPV             active
      2                  2            msmDSPV             active
      6                  1            msmDSPV             active
      6                  2            msmDSPV             active
```

Displayed Information	Description
Slot Number	The slot number of the multi-service module
MSM Number	The multi-service module number
MSM Type	The type of multi-service module
MSM Status	The multi-service module status

Choosing the NSC Interface Mode

The interface mode controls the signal source for the T1 interface of an NSC card. There are three modes (see Figure 3-1)

- Back card

- Back plane

• No back card

All sixteen T1 lines operate in the same mode. The system ignores this setting for cards other than the NSC.

Figure 3-1   NSC Interface Modes

Back Card Mode

In the back card mode, the NSC transmits and receives traffic through the back card and its T1/E1 interface. The normal signal flow in this case is:

```
NSC-BC -> NSC-FC -> Bus -> SCC-FC -> SCC-BC
where BC = Back Card and FC = Front Card
```

Choose the back card mode when you are using the NSC card with a T1/E1 back card.

Back Plane Mode

In the back plane mode, VoIP transmits and receives traffic from the DMC front card. The normal signal flow when using a DMC card is:

```
DMC-BC -> DMC-FC -> Bus -> NSC-FC -> Bus -> SCC-FC -> SCC-BC
where BC = Back Card and FC = Front Card
```

Use the back plane mode when you use the NSC card in conjunction with a DMC card and DS3 lines.

No Back Card Mode

In the no back card mode, the NSC transmits and receives traffic from a SCC front card. The normal signal flow in this case is:

```
NSC-FC -> Bus -> SCC-FC -> SCC-BC
where BC = Back Card and FC = Front Card
```

Use the no back card mode when using the NSC in conjunction with the SCC Fast Ethernet.

Configuring the NSC Interface Mode

You can only change the interface mode on an NSC while it's in one of the following states:

- Active
- InBoot
- Mismatch
- Failed

To set the NSC interface mode, enter the **chcdif** command, specifying the card number and NSC interface mode. Valid NSC interface mode settings are:

1: back card (default)

2: back plane

3. no back card

> **Note**   Configuring the back card mode with out a back card installed results in a card mismatch.

The system sets the specified interface mode on the target NSC card. The following example sets the interface mode of card 13 to back plane:

```
chcdif 13 2
```

The card resets and reboots into backplane mode.

Setting the ATM Queue Profile

The ATM queue profile defines the queue behavior for the SCC card. You can only change the ATM Queue profile on the active SCC.

To set the ATM queue profile, enter the **chqprf** command, specifying the slot number of the SCC card, either 9 or 10, and the queue profile, a number from 1 to 10. Profile 1 is the default.

The system sets the specified queue profile on the target SCC card.

Resetting a Card

The **resetcd** command restarts a card and restores its stored configuration. The following table shows response of the reset command for different card types and operating states:

Table 3-1   Response of Reset Command by Card and State

State	SCC slots 9/10	DMC slots 7/8	NSC slots 1-8, 11-16 and BSC slots 11-16
active	OK	Service not available on DMC	OK
standby			OK
empty	Card does not exist.		Card does not exist
inBoot	OK		OK
mismatch			OK
failed			OK
unknown	Card does not exist	N/A	N/A

⚠

Warning   **Resetting a card interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To reset a card, enter the **resetcd** command, specifying the card to reset.

The following example resets card 13:

```
resetcd 13
```

Understanding Redundancy

The MGX 8260 Media Gateway supports both redundant and non-redundant operation for all cards. The SCC and DMC don't require user setup for redundant operation. To configure redundancy for the NSC or BSC, you define protection pairs. The Cisco MGX 8260 uses 1:N protection for NSCs and 1:1 protection for BSCs. With protection, the system switches to a protection card if an active card fails.

Understanding Physical and Logical Slot Numbers

Cards configured for redundancy may have logical numbers that are different than physical slot numbers. The physical slot number always represents the physical location of the card in the chassis. The logical slot number is an abstract concept that helps the system keep track of primary and secondary cards.

With 1:1 redundancy, the primary and secondary cards both have the same logical slot number. As such, the system treats them as a single entity for configuration operations. With 1:N redundancy, the secondary card uses logical slot number 0. During switchover, the secondary card assumes the logical number of the card it protects.

Using 1:N NSC Redundancy

A single secondary card can support multiple primary cards. In this configuration, a failure of any of the primary cards causes a switchover to the designated secondary. After a switchover, the other NSCs are unprotected until you fix the problem and restore the primary card to the active state.

For example, a 1:2 redundancy configuration with slot 3 covering slot 1 and slot 5 actually has two redundancy pairs (see Figure 3-2).

Figure 3-2   Normal Operation with 1:2 NSC Redundancy

Slot 1 is paired with slot 3, with slot 1 as the primary. Slot 5 is also paired with slot 3 with slot 5 as the primary. You can continue to add redundancy pairs to build other ratios of protection. However, you can only have one secondary slot per MGX 8260 chassis. That single secondary slot protects all primary NSC cards in the chassis.

If the primary card in slot one fails, the system switches to the secondary NSC, and the secondary NSC assumes the logical slot number of the card that failed (see Figure 3-3).

Figure 3-3   Switchover with 1:2 NSC Redundancy

The logical slot number of the secondary card changes to 1, even though its physical slot number is 3. Had the slot 5 failed rather than slot 1, the logical slot number of the secondary card would have changed to 5.

Using 1:1 BSC Redundancy

You configure BSC protection using a pair of cards configured for 1:1 redundancy. After you configure a redundant pair of BSCs, both cards reboot and return to operation with the same logical slot number. The card LED displays green for the active card and yellow for the standby card.

For example, you can configure cards 15 and 16 for redundancy (see Figure 3-4).

Figure 3-4   Normal Operation with 1:1 BSC Redundancy

Secondary card (standby) ——————

Primary card (active) ——————

Physical slot numbers 11 12 13 14 15 16

Logical slot numbers 11 12 13 14 15 15

A failure of the active card causes a switchover to the backup card. During the switchover, the active and standby roles are reversed (see Figure 3-5). The card that failed reboots, and the Card LED changes to either yellow or red, depending on the type of problem. After a switchover, the other BSC is unprotected until you fix the problem and restore the primary card to the active state.

Figure 3-5   Switchover with 1:1 BSC Redundancy

After repair of the failure, you restore normal operation by invoking a switchback. The system does not automatically restore the protection pair to its original state. For more information, see Invoking a Switchback, page 3-18.

Configuring BSC or NSC Redundancy

This section describes the process for configuring redundancy for BSC and NSC cards.

Viewing BSC and NSC Redundancy

To view all redundancy pairs, enter the **lsreds** command.

The system displays all redundancy pairs:

```
=======================================================================
                        Card Redundancy Table  (lsreds)
=======================================================================
  Primary Slot    Secondary Slot
=============== ================
  1               3
  5               3
```

Displayed Information	Description
Primary Slot	The physical slot for the primary card of the redundancy pair
Secondary Slot	The physical slot for the secondary card of the redundancy pair

Adding NSC Redundancy

There are two possible NSC redundancy scenarios: with and without DMC.

- NSC redundancy without DMC

    This scenario requires a redundant back card in the secondary slot. The back card protects the primary slots in the event of a primary card failure.

- NSC redundancy with DMC

    This scenario does not require, and cannot have, a redundant back card.

Both scenarios require assignment of primary and secondary slot numbers in pairs. The MGX 8260 chassis only supports one secondary slot.

Configuring NSC Redundancy without DMC

To configure NSC redundancy without DMC, follow these steps:

Step 1 Verify that the redundant NSC has a redundancy back card installed and is in the standby state. Enter the **lscd** command, specifying the card number, to verify the hardware and status:

Step 2 Verify that each primary, active NSC is in the back card mode and is in the active state. List the operational status of all cards using the **lscds** command.

Step 3 Add a redundancy pair using the **addreds** command, specifying the slots of the primary and secondary slots.

The primary slot is active during normal operation. The secondary slot is in standby during normal operation and protects the primary slot in the event of a primary failure.

The following example creates a redundancy pair with slot 1 as primary and slot 3 as secondary:

```
addreds 1 3
```

Step 4 Repeat the previous step to assign additional primary slots to the designated secondary slot. Each MGX 8260 chassis can have only one secondary slot.

Configuring NSC Redundancy with DMC

To configure NSC redundancy with DMC, follow these steps:

Step 1   Verify that at least one DMC and DS3 back card is installed in physical slot 7 or 8. Enter the following command to verify the hardware:

    lscds

Step 2   Verify that the redundant NSC does not have a redundancy back card installed. See "Viewing Summary Information for Cards" section on page 3-7.

Step 3   Verify that each primary NSC does not have a back card installed.

Step 4   Add a redundancy pair using the **addreds** command.

Step 5   Repeat the previous step to assign additional primary slots to the designated secondary slot. Each MGX 8260 chassis can have only one secondary slot for NSC cards.

Adding BSC Redundancy

In order to successfully configure a redundant pair, the following conditions must be true:

- The hardware configuration of the two BSCs must be identical
- The firmware version of the two BSCs must be identical
- The redundant BSC must not have any lines configured

Warning   **Adding BSC redundancy interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To configure BSC redundancy, follow these steps:

Step 1   Install a redundant BSC in any available slot from 11 to 16.

Step 2   Add a redundant "Y" cable between all ports on the two cards.

Step 3   From a management session, add a redundancy pair using the **addreds** command.

Both cards reboot and return to operation with the same logical slot number.

Deleting Redundancy

To delete a redundancy pair, enter the **delreds** command specifying the primary and secondary slots. The following example deletes the redundancy pair where slot 1 is primary and slot 3 is secondary:

    delreds 1 3

The redundant card continues to protect other primary cards with which it is paired.

Invoking a Switchback

The switchover from primary to secondary cards is automatic when a primary card fails. Switching back is a manual task. The following table shows the response of the switchback command as a function of card type and operational state:

Table 3-2   Response for the Switch Card Command by Card and State

State	SCC slots 9/10	DMC slots 7/8	NSC slots 1-8, 11-16 and BSC slots 11-16
active	OK	Service not available on DMC	Switchback from secondary to primary only.
standby	Illegal slot number for this state.		
empty	Card does not exist.		
inBoot	Illegal slot number for this state.		
mismatch			
failed			
unknown		N/A	N/A

To force a switchback, enter the **swcd** command specifying the physical number of the primary card in a protection pair.

> ✎
> **Note**   To force a switchover, rather than a switch back, reset the primary card using **resetcd**.

Saving and Restoring Card Configurations

You can save or restore system configuration from a tftp server on the management network. To use tftp, you must conform to the Cisco file-naming convention and supply a six-character security key. The security system disables tftp file transfers if the key is missing or does not match. The following procedures explain how to save and restore card configurations.

Backing Up Configurations

You can back up the current MGX 8260 configuration with the **dbbkup** command. This command captures the configuration information for all cards and saves it to a file on the SCC hard drive. The system assigns a name for this file and reports it to the user.

To save a card configuration, follow these steps:

Step 1   Log onto the desired MGX 8260.

Step 2   At the command prompt, type **dbbkup**.

The system reports the result of the operation and the name of the backup file.

Step 3   Record the file name for future reference. By default, the backup file name matches the software version name with a .cfg extension. For example, the backup file for software release R01.02.03 is SCC_R01.02.03.CFG

Uploading Configurations

The MGX 8260 stores configuration information for all cards in the chassis in the SCC hard drive. You can upload this configuration information to an external server for safekeeping. Before performing this procedure, check your records to determine the name of the backup file you want to upload.

To upload a configuration file, follow these steps:

Step 1   Log onto the workstation running the tftp server.

Step 2   Initiate a tftp session with the target MGX 8260 Media Gateway using the **tftp** command.

```
tftp <IP Address>
```

Specify the IP address of the MGX 8260 management port in standard IP dot notation.

Note   tftp is an operating system command executed by the management workstation.

Step 3   Set the transfer mode to binary:

```
mode binary
```

Step 4   Start the file transfer using the tftp **get** command.

```
get <FileName>.<SecurityKey>
```

Parameter	Description
FileName	The name of the configuration file. This name indicates the card type, major release, minor release, and version, followed by the .cfg extension. For example, SCC_R01.02.03.CFG is the database for software release 1.2.3.
SecurityKey	The six-character alphanumeric security key for the target MGX 8260

Step 5   Confirm the file transfer by checking the distribution directory.

Downloading Configurations

The MGX 8260 stores configuration files on the SCC hard drive, so you generally don't need to download a configuration file. However, if you prefer to save configuration files on an external server, you can download the file to the MGX 8260 before invoking **dbrstr**. Before performing this procedure, check your records to determine the name of the backup file you want to download.

To restore a card configuration, follow these steps:

Step 1   Log onto a workstation and locate the configuration file to download.

Step 2   Initiate a tftp session with the target MGX 8260 Media Gateway using the **tftp** command.

```
tftp <IP Address>
```

Specify the IP address of the MGX 8260 management port in standard IP dot notation.

Note   tftp is an operating system command executed by the management workstation.

Step 3   Set the transfer mode to binary using the tftp **mode** command.

```
mode binary
```

Step 4   Start the file transfer using the tftp **put** command.

put <srcImageFileName> <destImageFileName>.<Security Key>

Parameter	Description
srcImageFileName	The path and file name of the source file stored on your server
destImageFileName	The name of the configuration file. This name indicates the card type, major release, minor release, and version, followed by the .cfg extension. For example, SCC_R01.02.03.CFG is the database for software release 1.2.3.
SecurityKey	The six-character alphanumeric security key for the target MGX 8260

Step 5   Confirm the file transfer.

Restoring Configurations

You can restore the MGX 8260 to a previous configuration using the **dbrstr** command. This command retrieves a configuration file from the SCC hard disk and restores all cards accordingly. Before performing this procedure, check your records to determine the name of the backup file you want to restore.

Warning   **This is a service-affecting action. Perform this task when the equipment is down or during a pre-arranged maintenance window.**

To restore MGX 8260 configurations, follow these steps.

Step 1   Log onto the desired MGX 8260.

Step 2   At the command prompt, type database restore command and the configuration file name. Omit the .cfg extension from the file name.

For example:

```
dbrstr scc_r01.02.03
```

Step 3   Restart the target card using the **resetcd** command.

Upgrading Software Images

This section describes the software upgrade paths, security key requirements, installation procedures, and database configurations needed for software upgrade.

System Software Upgrade Paths

Release 1.2.5 software supports graceful upgrades from the following releases:

- 1.2.4
- 1.2.3
- 1.2.2
- 1.2.1

Security Key Requirements

A security key is required for the transfer of files to the MGX 8260 through use of the UNIX **tftp** function. To determine the appropriate MGX 8260 security key code, use the **lskey** command from the command line interface.

Installation Procedures

The following sections describe the process you use to download MGX 8260 software from the Cisco web or ftp sites, transfer the files to the MGX 8260, and download the files to each card.

Downloading Software from CCO

To download MGX 8260 software images, refer to the Cisco software center on Cisco Connection Online (CCO), located at the following URL:

- http://www.cisco.com/public/sw-center/

For instructions on how to download software, refer to the link for "Using the Software Center".

MGX 8260 software includes the following files:

```
vxWorks_dnld.scc.fw
vxWorks_boot.scc.fw
vxWorks_dnld.nsc.fw
vxWorks_boot.nsc.fw
vxWorks_dnld.bsc.fw
vxWorks_boot.bsc.fw
```

To upgrade the MGX 8260, download the new system software from CCO to a management server on your network that supports the UNIX **tftp** function.

Transferring Files to the MGX 8260

Using tftp, transfer the files to the MGX 8260 using the following procedure:

Step 1   Log on to the workstation running the tftp server and locate the files you downloaded in the "Downloading Software from CCO" section.

Step 2   Initiate a tftp session with the target MGX 8260 Media Gateway using the **tftp** command.

```
tftp <IP Address>
```

Specify the IP address of the MGX 8260 management port in standard IP dot notation.

Step 3   Set the transfer mode to binary with the following command:

```
mode binary
```

Step 4   Use the following **tftp** commands to transfer SCC software to the MGX 8260:

```
tftp> put vxWorks_dnld.scc.fw scc_r01.02.05.img.[key]
```

```
tftp> put vxWorks_boot.scc.fw scc_r01.02.05.fls.[key]
```

For information about the security key [key], refer to the "Security Key Requirements" section on page 3-21.

Step 5   Use the following **tftp** commands to transfer BSC software to the MGX 8260:

```
tftp> put vxWorks_dnld.bsc.fw bsc_r01.02.05.img.[key]
```

```
tftp> put vxWorks_boot.bsc.fw bsc_r01.02.05.fls.[key]
```

Step 6   Use the following **tftp** commands to transfer NSC software to the MGX 8260:

```
tftp> put vxWorks_dnld.nsc.fw nsc_r01.02.05.img.[key]
```

```
tftp> put vxWorks_boot.nsc.fw nsc_r01.02.05.fls.[key]
```

Step 7   Close your **tftp** session.

Upgrading Card Software

Before performing an upgrade, make sure you have a current backup of the configuration database. Back up the database using the **dbbkup** command from the command line interface.

⚠
Caution   All modules must be upgraded to the new release of software during the upgrade process. Performing a partial upgrade (For example, some, but not all BSCs, or some, but not all NSCs) could cause unexpected behavior in MGX 8260 system operation.

✎
Note   The installation procedure described here is for a graceful upgrade process from the software release indicated in the "System Software Upgrade Paths" section on page 3-21 to the current release.

The general process to upgrade software on all cards is as follows:

1.   Initiate a Telnet session with the target MGX 8260 Media Gateway, specifying the IP address of the MGX 8260 management port in standard IP dot notation.

2. Log in as superuser or a user with level 1 privileges.

3. Follow the upgrade procedures for each card type.

   – See the "Upgrading SCC Software" section on page 3-23 for SCC upgrade procedures.

   – See the "Upgrading BSC Software" section on page 3-24 for BSC upgrade procedures.

   – See the "Upgrading NSC Software" section on page 3-26 for NSC upgrade procedures.

4. Log out of your Telnet session.

Note   We recommend that you use the upgrade procedures while simultaneous console connections are established to both the active and the standby SCC.

Upgrading SCC Software

The upgrade process for redundant SCCs is graceful. It does not interrupt established calls, but it can interrupt calls in the process of being established. When you invoke the upgrade process, the MGX 8260 upgrades and restarts the standby SCC. You can then commit or cancel the upgrade. When you commit the software, the MGX 8260 switches to the standby SCC and then upgrades the other SCC.

Warning   **Upgrading nonredundant cards interrupts service. Perform nonredundant upgrades during light traffic periods or during a prearranged maintenance window.**

To upgrade SCC and software images, perform the following steps:

Step 1   Upgrade the boot Flash software on each SCC using the following command. Issue the command for each SCC, replacing the <physicalSlotNumber> with the appropriate number for your configuration.

```
updatefls <physicalSlotNumber> IMAGE/SCC/scc_r01.02.05.fls
```

Step 2   Ensure that the standby SCC is in the standby state.

Step 3   Upgrade the software image on the active SCC using the following command:

```
upgd 9 scc_r01.02.05.fw
```

✎

Note   Enter a 9 even if card 10 is active. This parameter refers to logical card 9. The active SCC is always logical card 9 regardless of its physical slot location.

In redundant configurations, the **upgd** command resets the standby SCC. Wait until the standby SCC reboots and its console session shows a standby state. At that point, the standby SCC will be running the new release of boot Flash and software images.

Step 4   You can now commit or cancel the upgrade.

  a.   For redundant SCCs, if you wish to cancel the upgrade, enter the **upgdcancel** command. Use this command only if you have not entered the **upgdcmit** command. You cannot cancel an upgrade for nonredundant cards.

✎

Note   Before you cancel an upgrade with the **upgdcancel** command, you need to to reset the previous software on the flash card using the **updatefls** command.

  b.   To commit the new software, enter the following command:

```
upgdcmit 9
```

On redundant systems, the **upgdcmit** command switches over the two SCCs. The SCC that was standby is placed into active state with its newly upgraded database and software image, and the previously active SCC resets and boots up to standby state.

⚠

Warning   **You must execute either the upgdcmit command in Step 4b. or the upgdcancel command in Step 4a. If you do not execute one of these commands, database corruption will occur.**

Step 5   Ensure that the previously active SCC has completed booting and is in standby state.

Step 6   On redundant systems, force a switchback to the primary card using the **swcd** command:

```
swcd 9
```

Upgrading BSC Software

The upgrade process for redundant BSCs is graceful. It does not interrupt established calls, but it can interrupt calls in the process of being established. When you invoke the upgrade process, the MGX 8260 upgrades and restarts the standby BSC. You can then commit or cancel the upgrade. When you commit the upgrade, the MGX 8260 switches to the standby BSC and then upgrades the other BSC.

Warning   **Upgrading nonredundant cards interrupts service. Perform nonredundant upgrades during light traffic periods or during a prearranged maintenance window.**

If your MGX 8260 includes BSCs, perform the following steps to upgrade BSC Flash and software images:

Step 1   Upgrade the boot Flash software on each BSC using the following command. Issue the command for each BSC, replacing the <physicalSlotNumber> with the appropriate number for your configuration.

```
updatefls <physicalSlotNumber> IMAGE/BSC/bsc_r01.02.05.fls
```

Step 2   Ensure that the standby BSC is in the standby state.

Step 3   Upgrade the BSC software image using the following command. Issue the command for the first primary BSC in your system, replacing the <logicalSlotNumber> with the appropriate number for your configuration.

```
upgd <logicalSlotNumber> bsc_r01.02.05.fw
```

Answer **Y** to the "Are you sure?" warning message.

In redundant configurations, the **upgd** command resets the secondary BSC matched with the primary BSC you specified in <logicalSlotNumber>. The secondary is now running the new release of boot Flash and the software images.

Step 4   Ensure that the standby BSC has finished booting and is in the standby state.

Step 5   You can now commit or cancel the upgrade.

   a.   For redundant BSCs, if you wish to cancel the upgrade, enter the **upgdcancel** command. This command can be used only if you have not entered the **upgdcmit** command. You cannot cancel an upgrade for nonredundant cards.

Note   Before you cancel an upgrade with the **upgdcancel** command, you need to to reset the previous software on the flash card using the **updatefls** command.

   b.   To commit the new software, use the following command. Issue the command for the first primary BSC in your system, replacing the <logicalSlotNumber> with the appropriate number for your configuration.

```
upgdcmit <logicalSlotNumber>
```

If you have redundant BSCs installed, the **upgdcmit** command switches over the two BSCs. The BSC that was secondary (with its newly upgraded database and software image) becomes the primary BSC, and the previously primary BSC becomes the secondary BSC.

Warning   **You must execute either the upgdcmit command in Step 5b. or the upgdcancel command in Step 5a. If you do not execute one of these commands, database corruption occurs.**

Step 6   Ensure that the previously primary BSC has finished booting and is in the standby state.

Step 7   On redundant systems, force a switchback to the original primary BSC using the **swcd** command:

```
swcd <standbySlotNumber>
```

Where <standbySlotNumber> is the number of the original secondary BSC (the BSC that is currently in active state).

Step 8   Repeat Step 2 through Step 7 for additional BSC pairs in your system.

Upgrading NSC Software

The upgrade process for redundant NSCs is graceful. It does not interrupt established calls, but it can interrupt calls in the process of being established. When you invoke the process, the MGX 8260 upgrades and restarts the standby NSC. You can then commit or cancel the upgrade. When you commit the upgrade, the MGX 8260 switches to the standby NSC and then upgrades the other NSC.

> **Warning**   **Upgrading nonredundant cards interrupts service. Perform nonredundant upgrades during light traffic periods or during a prearranged maintenance window.**

NSC redundancy follows an N:1 design, with one NSC providing redundancy for all remaining NSCs.

If your MGX 8260 includes NSCs, perform the following steps to upgrade NSC Flash and software images:

Step 1   Upgrade the boot Flash software on each NSC using the following command. Issue the command for each NSC, replacing the <physicalSlotNumber> with the appropriate number for your configuration.

```
updatefls <physicalSlotNumber> IMAGE/NSC/nsc_r01.02.05.fls
```

Step 2   If your system includes NSC redundancy, identify the slot number of the NSC providing redundancy.

Step 3   Enter the following command for the first NSC in your system (excluding the redundant NSC identified in Step 2). Replace the <logicalSlotNumber> with the appropriate number for your configuration.

```
upgd <logicalSlotNumber> nsc_r01.02.05.fw
```

Answer **Y** to the "Are you sure?" warning message.

In redundant configurations, the **upgd** command resets the redundant NSC. The redundant NSC should now be running the new release of boot Flash and software images.

Step 4   Ensure that the standby/redundant NSC has finished rebooting and is in the standby state.

Step 5   You can now commit or cancel the upgrade.

a.   If your MGX 8260 is configured for NSC redundancy, and you wish to cancel the upgrade, enter the **upgdcancel** command. You can use this command only if you have not entered the **upgdcmit** command. You cannot cancel an upgrade for nonredundant cards.

> **Note**   Before you cancel an upgrade with the **upgdcancel** command, you need to to reset the previous software on the flash card using the **updatefls** command.

b.   To commit the new software, use the following command. Issue the command for the first NSC as indicated in Step 3. Replace the <logicalSlotNumber> with the appropriate number for your configuration.

```
upgdcmit <logicalSlotNumber>
```

> **Warning**   **You must execute either the upgdcmit command in Step 5b. or the upgdcancel command in Step 5a. If you do not execute one of these commands, database corruption occurs.**

Step 6   Ensure that the previously standby NSC is now active and that the NSC in <logicalSlotNumber> is now in standby state.

Step 7   For an MGX 8260 configured for NSC redundancy, force a switchback to the NSC indicated in Step 3. Use the **swcd** command:

swcd <standbySlotNumber>

Where <standbySlotNumber> is the number of the standby/redundant NSC (currently in active state).

Step 8   Repeat Step 3 through Step 7 for all NSCs in your system.

Note   If the NSC does not have a back card, it may reboot in MISMATCH state. Fix this by entering the command **chcdif** <logicalSlotNumber> **3**. This returns the NSC to No-Back-Card mode.

Database Configuration Information

You do not need to clear the configuration database when performing a graceful upgrade from Release 1.2.2, 1.2.3, or 1.2.4 to Release 1.2.5. Nongraceful upgrades require a database reconfiguration.

Service Management

This chapter explains how to configure line and voice services.

Configuration Tasks for Lines

See the following sections for line configuration tasks.

- Viewing All MGX 8260 Lines
- Viewing DS0 Lines
- Configuring DS1 or E1 Lines
- Configuring DS3 Lines
- Mapping DMC Lines
- Configuring Fast Ethernet Lines
- Configuring OC-3 Lines

Viewing All MGX 8260 Lines

The MGX 8260 Media Gateway supports the following types of lines:

- DS1, E1, and DS3
- Fast Ethernet or OC-3

You can view all existing MGX 8260 lines in a single report. From this report, you see a list of lines and their logical slot and line type. Based on the line type, you proceed with line-specific commands to configure the line or obtain more information.

To view the common line listing, enter the **lslns** command.

The system displays the common line entries:

```
======================================================================
                      Common Line Entries (lslns)
======================================================================
      Line Number (Slot.Line)                   Line Type
================================  ================================
                   2.1                           dsx1-t1
                  11.1                           dsx1-t1
                  11.2                           dsx1-t1
                11.501                           dsx3-t3
```

Displayed Information	Description
Line Number	The logical slot and line number, expressed as Slot.Line
Line Type	The type of line: • dsx1-t1—T1 line • dsx3-t3—T3 line • fast-ether—Fast Ethernet line

Viewing DS0 Lines

From the command line interface, you can add, change, delete, and view DS1 lines. The MGX 8260 Media Gateway supports both T1 and E1 line types, but you must configure the entire chassis as one type or the other. Use caution when changing DS1 configurations because you may interrupt service.

Viewing DS0 Configuration and Status

To view detail information for a single DS0, enter the **lsds0** command, specifying the logical number of the slot in the MGX 8260 chassis, the number of the DS1 line, and the DS0 number.

The system displays the following DS0 details:

```
======================================================================
                      DS0 Entry (lsds0)
======================================================================
Slot                                     : 1
Line Number                              : 1
Ds0 Time Slot                            : 1
Operating Status                         : idle
Port                                     : 3
```

Displayed Information	Description
Slot	The slot number of car.
Line Number	The line with this DS0 channel
DS0 Time Slot	The DS1 time slot this DS0 uses
Operating Status	The current operational status for this DS0
Port	The DS0 port number

Viewing Summary DS0 Information

To list summary DS1 information for all lines, enter the **lsds0s** command.

The system displays summary information for all DS0 lines:

```
=======================================================================
                        DS0 Entries (lsds0s)
=======================================================================
Slot Number   Line Number DS0 Number    DS0 Status      Logical Port Num
===========   =========== ==========  ================  =================
       1             1          1              idle               3
       1             1          2              idle               1
       1             1          5              idle               4
       1             1          7              idle               6
```

For a description of the columns, see the previous section on the **lsds0** command.

Configuring DS1 or E1 Lines

From the command line interface, you can add, change, delete, and view DS1/E1 lines. The MGX 8260 Media Gateway supports both T1 and E1 line types, but you must configure the entire chassis as one type or the other. Use caution when changing DS1/E1 configurations because you may interrupt service.

Viewing DS1/E1 Configuration and Status

To view detail information for a single DS1/E1, enter the **lsds1ln** command, specifying the logical number of the slot in the MGX 8260 chassis and the number of the DS1/E1 line (expressed as slot.line).

The system displays the following DS1/E1 details:

```
==========================================================================
              DS1 Line Entry (lsds1ln)
==========================================================================
DS1 Line                                           :  2.1
E1/T1 Line Type                                    :  e1
Related DS3 Line (BSC only)                        :  0
Line Type                                          :  dsx1E1-CRC-MF
Line Coding                                        :  dsx1HDB3
Send Code                                          :  dsx1SendNoCode
Line Signal Mode                                   :  bitOriented
Line Signal Bits                                   :  6
Time Elapsed in Interval                           :  402
Line Valid Intervals                               :  4
Line Idle Code                                     :  84
Line Loopback Config                               :  dsx1NoLoop
Transmit Clock Source                              :  localTiming
Circuit Identifier                                 :  5
IPDC Echo Cancel                                   :  na
Alarm                                              :  Major
Far end LOF (Yellow Alarm)                         :  No
Near end sending LOF Indication                    :  Yes
Far end sending AIS                                :  No
Near end sending AIS                               :  Yes
Near end LOF (Red Alarm)                           :  Yes
Near end Loss Of Signal                            :  Yes
Near end is looped                                 :  No
E1 TS16 AIS                                        :  No
Far End Sending TS16 LOMF                          :  No
Near End Sending TS16 LOMF                         :  No
Near End detects a test code                       :  No
Far End sending Remote Multiframe Alarm Indication :  No
Near End Sending Remote Multiframe Alarm Indication:  No
Far End sending Loss of CRC Multiframe             :  No
Other Failure                                      :  No
LED Status                                         :  Solid RED
Line Status                                        :  UP
```

Displayed Information	Description
DS1 Line	The slot number and line number.
E1/T1 Line Type	The line channelization type.
Related to DS3 Line	The DS3 line number. Zero indicates not applicable.
Line Type	The type of framing. The T1 values are: • dsx1ESF—Extended superframe DS1 • dsx1D4—means use AT&T D4 format • The E1 values are: • dsx1E1—CCITT Recommendation G.704, Table 4a • dsx1E1-CRC—CCITT Recommendation G.704, Table 4b • dsx1E1-MF—G.704 table 4a with TS16 multi-framing enabled • dsx1E1-CRC-MF— G.704 table 4b with TS16 multi-framing enabled

Displayed Information	Description
Line Coding	The line coding format. Not applicable for T1 lines on BSCs. • dsx1B8ZS (T1 lines only) • dsx1HDB3 (E1 lines only) • dsx1AMI
Send Code	The type of code being sent across the DS1 interface by the device: • dsx1SendNoCode • dsx1SendLineCode (T1 lines only) • dsx1SendPayloadCode (reserved for future use) • dsx1SendResetCode (T1 lines only) • dsx1SendQRS (T1 lines only) • dsx1Send511Pattern (T1 lines only) • dsx1Send3in24Pattern (T1 lines only) • dsx1Send1in16 (T1 lines only)
Line Signal Mode	Signal mode for transmit direction. In the receive direction, the mode is always set to robbed bit. • none—reserve no bits and set channel bandwidth to 64 kbps. • robbedBit—T1 Channel Associated Signaling • bitOriented—E1 Channel Associated Signaling • messageOriented—Common Channel Signaling on channel 16 of an E1 line or channel 24 of a T1 line
Line Signal Bits	The 4-bit signaling pattern, represented by an integer: 1—0000 2—0001 3—0010 4—0011 5—0100 6—0101 . . . 16—1111
Time Elapsed in Interval	The number of seconds since the start of the near end error measurement period.
Line Valid Intervals	The number of 15 minute intervals during which the system collected valid data for the near end.
Line Idle Value	The code that is sent on each idle DS0 within the DS1 line.

Displayed Information	Description
Line Loopback Config	The loopback configuration of this interface. • dsx1NoLoop • dsx1PayloadLoop • dsx1LineLoop • dsx1OtherLoop
Transmit Clock Source	The clock source for the transmit signal. • loopTiming (reserved for future use) • localTiming • throughTiming (reserved for future use)
Circuit Identifier	The Cisco equipment circuit identifier, displayed as a text string.
IPDC Echo Cancel	The state of the echo canceller for the IPDC protocol.
Alarm	Alarm state, either major, minor or no.
<alarm list>	The state of individual alarms. For more information, see the alarm chapter.
LED Status	The front panel LED indication for this line.
Line Status	The administrative status for the line, either up or down.

Viewing Summary DS1/E1 Information

To list summary DS1/E1 information for all lines, enter the **lsds1lns** command.

The system displays summary information for all DS1/E1 lines:

```
========================================================================
            DS1 Lines  (lsds1lns)
========================================================================
Slot.Line    Line Type     Line Coding     SignalMode      LED Status
=========    ===========   =============   =============   ==========
    3.1     dsx1E1-CRC-MF   dsx1HDB3        bitOriented      Solid GREEN
    3.2     dsx1E1-CRC-MF   dsx1HDB3        bitOriented      Solid GREEN
    3.3     dsx1E1-CRC-MF   dsx1HDB3        bitOriented      Solid GREEN
    3.4     dsx1E1-CRC-MF   dsx1HDB3        bitOriented      Solid GREEN
```

Displayed Information	Description
Slot.Line	The logical slot number and line number for the NSC or BSC
Line Type	The line mode
Line Coding	The coding format
Signal Mode	The signal mode for the transmit direction
LED Status	The status of the front panel LED

Adding DS1/E1 Lines

This procedure explains how to add DS1/E1 lines to BSC or NSC cards. NSCs support either T1 or E1 lines, but the whole chassis must be configured for one mode or the other. DS1 channels within a DS3 line have the following mapping:

DS 3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Note Before adding DS1 lines to a DS3 line, ensure the corresponding DS3 line exists.

To add DS1/E1 lines, follow these steps:

Step 1 Enter the **addds1ln** command and optional parameters (see "addds1ln" section on page 9-10.

The following example adds two DS1 lines with AMI line coding at slot 11 lines 6 and 7:

```
adddds1ln 11.6 2 # 5
```

This example assumes the chassis is configured for T1 lines and that DS3 line number 501 already exists in slot 11.

Note The system stops adding lines on the first failure, even if later additions are valid.

Step 2 Add other DS1/E1 lines, as required.

Step 3 Verify the configuration for the new lines using the lsds1ln command, specifying the logical number of the slot in the MGX 8260 chassis and the number of the DS1/E1 line, delimited by a period (slot.line). The display identifies the associated DS3 line, if appropriate.

Changing DS1/E1 Lines

Warning **Changing a DS1/E1 line interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To change the configuration of a DS1/E1 line, enter the **chds1ln** command and optional parameters. Unspecified parameters, designated by a # symbol, retain their current settings.

For example, the following command activates a local diagnosis loopback on line 6 of logical slot 11:

```
chds1ln 11.6 # # # # 4
```

Deleting DS1/E1 Lines

⚠

Warning   **Deleting a DS1/E1 line interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To delete a DS1/E1 line, enter the **delds1ln** command, specifying the slot.line and number of lines.

The system deactivates the DS1/E1 line and removes its configuration from the database.

✎

Note   The MGX 8260 inhibits deletion of a line with an active connection.

The following example deletes 2 DS1 lines beginning at line 6 of slot 11:

```
delds1ln 11.6 2
```

Configuring DS3 Lines

From the command line interface, you can add, change, delete, and view DS3 lines. These procedures apply to all DS3 lines, regardless of the card type.

Viewing DS3 Configuration and Status

To view detail information for a single DS3 line, enter the **lsds3ln** command, specifying the location (slot.line) of the DS3 line.

The system displays all DS3 settings for the specified line:

```
========================================================================
            DS3 Line Entry (lsds3ln)
========================================================================
DS3 Line              :     16.501
Line Type             :     dsx3M23
Line Coding           :     dsx3B3ZS
Send Code             :     dsx3SendNoCode
Line Status           :     464
Time Elapsed          :     12
Valid Intervals       :     0
Cable Length          :     1
Transmit Clock Source :     localTiming
Circuit Identifier    :     PMC-PM8313-D3MX
Alarm                 :     Yes
Rcv RAI Failure       :     No
Xmit RAI Failure      :     Yes
Rcv AIS               :     No
Transmit AIS          :     No
Loss of Frame         :     Yes
Loss of Signal        :     Yes
Loopback State        :     No
Rcv Test Code         :     No
Other Failure         :     No
LED Status            :     Solid RED
```

Displayed Information	Description
DS3 Line	The slot and line number of the specified DS3 line
Line Type	The DS3 C-bit usage: • dsx3M23 • dsx3SYNTRAN (reserved for future use) • dsx3CbitParity (reserved for future use)
Line Coding	The line coding format, fixed at dsx3B3ZS.
Send Code	The type of code sent across the DS3 interface • dsx3SendNoCode • dsx3SendLineCode • dsx3SendPayloadCode • dsx3SendResetCode • dsx3SendDS1LoopCode • dsx3SendTestPattern
Line Status	The line status, expressed as a bitmap. The alarm list this display shows this information in text form.
Time Elapsed	The number of elapsed seconds since the start of the near end error measurement period
Valid Intervals	The number of 15 minute intervals during which the system collected valid data for the near end
Cable Length	The approximate length of the DS3 cable: • upto225Ft—0 to 225 feet • bt225To300—225 to 300 feet • bt300To450—300 to 450 feet • bt450To900—450 to 900 feet
Transmit Clock Source	The source for the transmit signal clock • loopTiming • localTiming • throughTiming
Circuit Identifier	The Cisco equipment circuit identifier, expressed as a text string
Alarm	Alarm state, either major, minor, or off
<alarm list>	The current state of specific alarms, either yes or no. For more information, see the Alarms chapter.
Rcv Test Code	Receiving a test code, yes or no
Other Failure	Other failure, yes or no

Viewing Summary DS3 Information

To view summary information for all DS3 lines, enter the **lsds3lns** command.

The system displays summary information for all DS3 lines:

```
======================================================================
              DS3 Lines  (lsds3lns)
======================================================================
Slot.Line     Line Type     Line Coding     LED Status
=========     =========     ============    =============
  16.501      dsx3M23        dsx3B3ZS       Solid RED
  16.502      dsx3M23        dsx3B3ZS       Solid RED
  16.503      dsx3M23        dsx3B3ZS       Solid RED
  16.504      dsx3M23        dsx3B3ZS       Solid RED
```

Displayed Information	Description
Slot.Line	The slot and line number of the specified DS3 line.
Line Type	The DS3 C-bit usage.
Line Coding	The zero code suppression for this interface.
LED Status	The LED indication on the card.

Adding DS3 Lines

When adding DS3 lines that contain DS1 channels, add the DS3 lines first.

To add DS3 lines, follow these steps:

Step 1   Enter the **addds3ln** command (see "addds3ln" section on page 9-14).

The following example adds two new DS3 lines with default settings to slot 11 lines 501 and 502:

```
addds3ln 11.501 2
```

Note   The system stops adding lines on the first failure.

Step 2   Add other DS3 lines, as necessary.

Step 3   Check the configuration, using the **lsds3ln** command, specifying the location (slot.line) of the new line.

Changing DS3 Lines

Warning   **Changing a DS3 line interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To change the settings of a DS3 line, enter the **chds3ln** command as described in the "chds3ln" section on page 9-59.

For example, to activate a line loopback on DS3 line 501 in logical slot 11:

```
chds3ln 11.501 # # # # 3
```

Deleting DS3 Lines

To delete a DS3 line, enter the **delds3ln** command, specifying the logical number slot and line number (slot.line), and the number of lines to delete. Valid slot values: 7 or 8 for the DMC card; 11 -16 for the BSC card. Valid line values are 1-6.

The system deactivates the DS3 line and removes its configuration from the database.

The following example deletes two DS3 lines beginning at line 501 in slot 11:

```
delds3ln 11.501 2
```

Mapping DMC Lines

The DMC maps source DS1 channels from the DS3 interface to destination DS1 channels on the NSC. The mapping is one-to-one and can connect any source DS1 to any destination DS1 (see Figure 4-1).

Figure 4-1   Example of DS3 to DS1 Mapping from DMC to NSC

A single DS3 can map to multiple NSCs or multiple DS3s can map to a single NSC. Map definitions can be organized or arbitrary, but often occur in contiguous groups because you can define a range of mappings with a single command. The MGX 8260 Media Gateway stores map definitions in a map table, as follows:

Table 4-1   DMC Map Table

Source DS3 Line	Source DS1 Line	Destination NSC Slot	Destination DS1 Line
1	1	1	16
1	2	1	1
1	3	1	2
1	4	1	3
1	28	5	1

You can initialize or alter the map table from any of the management interfaces or from the command line. This section describes how to add, change, or delete entries from the command line.

Adding Map Table Entries

You can add map entries individually or within a range. When adding individual map entries, the following restrictions apply:

- Map commands can't duplicate existing entries.
- Map commands can't specify non-existent source or destination lines. For information on adding lines, see the "Configuring DS1 or E1 Lines" section on page 4-3 and the "Configuring DS3 Lines" section on page 4-8.

You simplify the process of mapping DS3 to DS1 lines by mapping a range of DS1s rather than individual lines. A map range is added in a sequential and contiguous manner, and can cross either source or destination boundaries.

The entire range of source and destination lines must be contiguous. The system stops mapping lines if it encounters a source or destination that is already assigned, leaving map pairs before the contiguous break assigned and the rest unassigned.

To add map table entries, enter the **addm13** command as described in the "addm13" section on page 9-21.

For example, in an MGX 8260 Media Gateway without any existing mapping, specify the maximum number of mappings as follows:

```
addm13 1 1 1 1 168
```

To add three map entries, enter the following command:

```
addm13 1 3 1 1 3
```

This example creates the following map table:

Table 4-2   DMC Map Table for the addm13 Command

Source DS3 Line	Source DS1 Line	Destination NSC Slot	Destination DS1 Line
1	3	1	1

Table 4-2   DMC Map Table for the addm13 Command (continued)

Source DS3 Line	Source DS1 Line	Destination NSC Slot	Destination DS1 Line
1	4	1	2
1	5	1	3

Changing Map Tables

You change map table entries one at a time. A change removes an existing mapping and replaces it with a map between the old source and new destination. To apply a change, the following must be true:

- The command must specify an existing map pair.
- The new destination must be unassigned.

Changing a map entry interrupts service to a large number of subscribers. Perform this task on inactive lines or during light traffic periods.

To change an existing map entry, enter the **chm13** command. For example the following command sequence adds three map table entries and then changes one of them:

```
addm13 1 3 1 1 3
chm13 1 3 1 4
```

The example creates the following map table:

Table 4-3   DMC Map Table for the Modified addm13 Command

Source DS3 Line	Source DS1 Line	Destination NSC Slot	Destination DS1 Line
1	3	1	4
1	4	1	2
1	5	1	3

Deleting Map Table Entries

You can delete map table entries individually or in a range. When deleting a range of entries, the entire number of source and destination lines should be contiguous. The system stops deleting lines if it encounters a break in source range, deleting only those lines before the break.

Deleting map entries discontinues or interrupts service to a large number of subscribers. Perform this task only on lines that are out of service.

To delete map table entries, enter the **delm13** command. The following example deletes three sequential map table entries, starting at DS3 line 1, DS1 line 1:

```
delm13 1 1 3
```

Viewing Map Tables

You can view the map table for the system as a whole or for individual source DS1 lines.

To view map tables for a single source DS1, enter the **lsm13** command, specifying the number of the source DS3 line and number of the DS1 line within the DS3 line. Valid entries are 1 through 6 for the DS3 and 1 through 28 for the DS1.The system lists map table entries for the specified line.

To view all DS3 to DS1 mappings, enter the **lsml3s** command. The system lists all map table entries:

```
==================================================================
                    DMC T3-T1 Mapping Entries (lsm13s)
==================================================================
  Src T3 Line        Src T1 Line    Dst Slot      Dst T1 Line
 ============       ============   ============   ================
 1                  3              1              1
 1                  4              1              4
 1                  5              1              3
```

Configuring Fast Ethernet Lines

The SCC has four Fast Ethernet lines. This section explains how to configure and manage these lines.

Viewing Fast Ethernet Configuration and Status

To view information for a single Fast Ethernet line, enter the **lsethln** command, specifying the slot and line number of the SCC (slot.line).

The system displays detail information for the Fast Ethernet:

```
========================================================================
                    Ether Line Entry (lsethln)
========================================================================
Ether Line            :    9.1
MAC Address           :    00.00.00.00.00.20
IP Address            :    10.15.26.98
Subnet Mask           :    255.255.255.0
Primary Gateway       :    10.15.26.1
Router Discovery Protocol:  enabled
Target State          :    active
Operational Status    :    active
Duplex Mode           :    full
```

Displayed Information	Description
Ether Line	The slot number and line number of the Fast Ethernet
MAC Addr	The physical address of the line
IP Addr	The IP address for this host
Subnet Mask	The IP subnet mask for this host
Primary Gateway	The primary gateway for this line
RDP	The Router Discovery Protocol status • disabled • enabled
Target State	The desired line state: • active • inactive

Displayed Information	Description
Operational Status	The operational status for the line: • active • inactive • failed • link down in active state • link down in inactive state
Duplex Mode	The duplex mode for this line • full • half

To view the information for all Fast Ethernet lines, enter the **lsethlns** command. The system lists summary information for all Fast Ethernet lines:

```
=======================================================================
                   Ether Lines   (lsethlns)
=======================================================================
 Line      IP Address      Subnet Mask       Status        Gateway Addr
 ======  ==============  ==============  ================  ===============
   9.1       10.15.26.97  255.255.255.0             active      10.15.26.1
   9.2       10.15.26.98  255.255.255.0             active      10.15.26.1
   9.3       10.15.26.99  255.255.255.0             active      10.15.26.1
```

Displayed Information	Description
Line	The slot and line number for the Fast Ethernet line
IP Address	The IP address for the Fast Ethernet line
Subnet Mask	The IP address mask for the Fast Ethernet line
Status	The operational status for the line: • active • inactive • failed • link down in active state • link down in inactive state
Gateway Addr	The primary IP gateway for this line

Adding a Fast Ethernet Line

To add a Fast Ethernet line, follow these steps:

Step 1   Enter the **addethln** command as described in the "addethln" section on page 9-18.

The following example adds a Fast Ethernet line to slot 9 line 2 with an IP address of 10.15.26.98, a gateway of 10.15.26.1, a target state of active, RDP disabled, a subnet mask of 255.255.255.0, and full duplex mode:

```
addethln 9.2 10.15.26.98 10.15.26.1 1 1 255.255.255.0 2
```

Step 2   Add other Fast Ethernet lines, as necessary.

Step 3   Verify the configuration using the **lsethlns** command.

The system displays the line configuration.

Changing a Fast Ethernet Line

Warning   **Changing a Fast Ethernet line interrupts service to a large number of users. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To change the configuration of a Fast Ethernet line, enter the **chethln** command as described in the "chethln" section on page 9-70. For example, the following command enables RDP but leaves other parameters unchanged on Fast Ethernet line 1 in slot 9:

```
chethln 9.1 # 2
```

The system enables RDP on the specified line.

Deleting Fast Ethernet Lines

To delete Fast Ethernet lines, enter the **delethln** command, specifying the slot and line number of the SCC. Valid values for the slot number of the SCC are either 9 or 10. Valid values for the Fast Ethernet line is a number from 1 to 4.

The following example deletes Fast Ethernet line 1 in slot 9:

```
delethln 9.1
```

Setting the Fast Ethernet Administrative Status

To enable a Fast Ethernet, enter the **upethln** command, specifying the slot and line number of the SCC (slot.line). The system enables the Ethernet line. The corresponding front panel ACT LED changes to green.

The following example enables Fast Ethernet line 1 in slot 9:

```
upethln 9.1
```

To disable the a Fast Ethernet, enter the **dnethln** command, specifying the slot and line number of the SCC (slot.line). The system disables the Ethernet line. The corresponding front panel ACT LED changes to red.

The following example disables Fast Ethernet line 1 in slot 9:

```
dnethln 9.1
```

Configuring Static Routes

You can configure static routes for the MGX 8260 routing table. These routes apply to lines that utilize an IP network. You can configure static routes for empty slots or non-existing lines, but the changes have no effect without the necessary hardware.

Adding Static Routes

To add a static route, enter the **addsrt** command, as described in the "addsrt" section on page 9-30. The system adds the static route to the routing table.

Deleting Static Routes

To delete a static route, enter the **delsrt** command, specifying the IP address of the static route you want to delete and the slot and line number (slot.line) for the static route interface. The system deletes the static route from the routing table.

Viewing Static Routes

To view a specific static route, enter the **lssrt** command, specifying the IP address of the static route and the slot and line number (slot.line) for the static route interface. The system displays the static route information:

```
=======================================================================
                     Static Route Entry (lssrt)
=======================================================================
        Dest IP Addr         :10.15.26.0
        Interface(Slot.Line) :9.1
        Priority             :1
```

Displayed Information	Description
Destination IP Address	The IP address of the static route
Interface	Slot and line number for the static route interface
Route Priority	Priority for the static route

To view all static routes, enter the **lssrts** command. The system displays all static routes:

```
=======================================================================
                     Static Route Entries (lssrts)
=======================================================================
  Destination IP Address     Interface (Slot.Line)       Priority
========================  ===========================  ===========
   127.2.4                        9.1                         1
   127.2.4                        9.2                         2
```

Configuring OC-3 Lines

The OC-3 SCC and back card supports four OC-3 lines. This section explains how to configure and manage these lines.

Multi-chassis Considerations

In a multi-chassis application, each MGX8260 needs a common reference clock for all TDM lines. You can accomplish this by synchronizing the clocks of each chassis to the common ATM switch clock (See Figure 4-2).

Figure 4-2   Multi-chassis Timing

To synchronize clocks, follow these steps:

Step 1   Set the primary clock source for each chassis to an OC-3 line. Use the **chpcklsrc** command for this purpose.

Step 2   Set the clock source for DS3 and DS1 lines to *local* using the **chds3ln** or **chds1ln** commands. This is the default configuration for these lines.

Viewing OC-3 Configuration and Status

To view information for a single OC-3 line, enter the **lssonetln** command, specifying the slot and line number of the SCC (slot.line).

The system displays detail information for the SONET line:

```
======================================================================
            Sonet Line Entry (lssonetln)
======================================================================
Sonet Line                       :   9.2
Medium Type                      :   sonet
Time Elapsed in Interval         :   12
Line Valid Intervals             :   0
Line Coding                      :   sonetMediumNRZ
Line Type                        :   sonetMultiMode
Circuit Identifier               :   PMC-PM5351-S/UNI-TETRA ver.0x00
Admin Status                     :   up
Line Status(1)                   :   5402a
Line Status(2)                   :   10
Interface Type                   :   oc3
Frame Type                       :   sts3c
Loopback State                   :   sonetNoLoop
HCS masking                      :   disable
Payload Scrambling               :   enable
Frame Scrambling                 :   enable
Transmit Clock Source            :   localTiming
Support Path ERDI                :   disable
```

Displayed Information	Description
Sonet Line	The slot and line number, expressed as slot.line
Medium Type	The physical medium, either SONET or SDH
Time Elapsed in Interval	The elapsed time of the current error-measurement period, expressed in seconds
Line Valid Intervals	The number of prior intervals for which valid data was stored
Line Coding	The data coding scheme this line, always NRZ.
Line Type	The type of optical fiber, either single or multi-mode depending on the back card installed
Circuit Identifier	The transmission vendor's circuit identifier
Admin Status	The administrative status for the line, always Up

Displayed Information	Description
Line Status(1)	The line status, expressed as a bitmap:
	Bit 0: No defect present
	Bit 1: Section LOS (Loss of Signal)
	Bit 2: Section LOF (Loss of frame)
	Bit 3: Line AIS (Alarm Indication Signal)
	Bit 4: Line RDI (Remote Defect Indication)
	Bit 5: Path AIS
	Bit 6: Path LOP (Loss of Pointer)
	Bit 7: Path UEQ (idle)
	Bit 8: Path TIM (Trace Identifier Mismatch)
	Bit 9: Path SLM
	Bit 10: Path RDI
	Bit 11: Path ERDI server defect
	Bit 12: Path ERDI connectivity defect
	Bit 13: Path ERDI payload defect
	Bit 14: Performance failure LOS
	Bit 15: Performance failure, section LOF
	Bit 16: Performance failure, line AIS
	Bit 17: Performance failure, line RFI
	Bit 18: Performance failure, path AIS
	Bit 19: Performance failure, path LOP
	Bit 20: Performance failure, path UEQ
	Bit 21: Performance failure, path TIM
	Bit 22: Performance failure, path SLM
	Bit 23: Path ERDI server failure
	Bit 24: Path ERDI connectivity failure
	Bit 25: Path ERDI payload failure
	Bit 26: Performance failure, path RFI
	Bit 27: Line loopback (remote loop)
	Bit 28: Serial loopback (local loop)
	Bit 29: Parallel loopback (local loop)

Displayed Information	Description
Line Status(2)	The LED status, expressed as a bitmap: Bit 0: Solid green Bit 1: Blinking green Bit 2: Solid yellow Bit 3: Blinking yellow Bit 4: Red
Interface Type	The type of interface, either OC3 or STM-1
Frame Type	The type of framing, either STS-3c or STS-1
Loopback State	The loopback state: • No loop • Line loop • Serial loop • Parallel loop
HCS Masking	The HCS masking state (reserved for future use)
Payload Scrambling	The payload scrambling state, either enabled or disabled
Frame Scrambling	The frame scrambling state, either enabled or disabled
Transmit Clock Source	The clock source for the transmit signal, either loop or local timing
Support Path E-RDI	The support path for enhanced remote defect indicator, either enabled or disabled

To view the information for all OC-3 lines, enter the **lssonetlns** command. The system lists summary information for all OC-3 lines:

```
========================================================================
            Sonet Lines   (lssonetlns)
========================================================================
Slot.Line    Interface Type   Frame Type    Admin Status    Line Status(2)
=========    ============     ==========    ==========      ==========
    9.1          oc3             sts1           up             10
    9.2          oc3             sts3c          up             10
```

For a description of the information, see the previous table.

Adding OC-3 Lines

To add OC-3 lines, follow these steps:

Step 1   Add one or more lines using the **addsonetln** command. Optionally, customize the line using the command line arguments. See the "addsonetln" section on page 9-28.

The following example adds one line to slot 9 line 1 with default parameters:

```
addsonetln 9.1
```

Step 2   Verify the configuration using the **lssonetln** command.

Changing OC-3 Lines

Warning   **Changing an OC-3 line interrupts service to a large number of users. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To change OC-3 lines, follow these steps:

Step 1   Change SONET lines using the **chsonetln** command, specifying the parameters to change. See the "chsonetln" section on page 9-121.

For example, the following command enables Payload Scrambling but leaves other parameters unchanged on OC-3 line 1 in slot 9:

```
chsonetln 9.1 # # # # # 2
```

Step 2   Verify the configuration using the **lssonetln** command.

Deleting OC-3 Lines

To delete OC-3 lines, enter the **delsonetln** command, specifying the slot and line number of the SCC. Valid values for the slot number of the SCC are either 9 or 10. Valid values for the OC-3 line is a number from 1 to 4.

The following example deletes OC-3 line 1 in slot 9:

```
delsonetln 9.1
```

Viewing E-RDI Configuration and Status

To view E-RDI (Extended Remote Defect Indicator) information for a single OC-3 line, enter the **lssonetlnerdi** command, specifying the slot and line number of the SCC (slot.line).

The system displays detail E-RDI information for the line:

```
========================================================================
              Sonet Line Entry (lssonetlnerdi)
========================================================================
Sonet Line                            :   9.1
Support Path ERDI                     :   disable
Transmitted Path Signal Label         :   19
Expected Received Path Signal Label :     19
Received Path Signal Label            :   0
Transmit PTID Length                  :   64
Transmit PTID Sync. pos.              :   0
Transmit ID -
     0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
     0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 d a
Expected Received PTID Length      :    64
Expected Received PTID Sync. pos.   :    0
Expected ID -
     0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
     0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 d a
Received ID -
     2020202020202020202020202020202020202020202020202020202020202020
     20202020202020202020202020202020202020202020202020202020202020 d a
```

Displayed Information	Description
Sonet Line	The slot and line number, expressed as slot.line
Support Path ERDI	The state of the enhanced remote defect indication for the SONET path, either disabled or enabled
Transmitted Path Signal Label	The signal label to transmit in the SONET path overhead: • No specific payload type • ATM • Packet on SONET
Expected Received Path Signal Label	The expected signal label from the SONET path overhead: • No specific payload type • ATM • Packet on SONET
Received Path Signal Label	The actual label received
Transmit PTID Length	The message length for the trace identifier: • 16 bytes (SDH only) • 64 bytes (SONET or SDH)
Transmit PTID Sync. pos.	The position within a 16-byte message of the synchronization byte
Transmit ID	The trace identifier to transmit in the SONET path overhead

Displayed Information	Description
Expected Received PTID Length	The expected trace identifier length for the SONET path: • 16 bytes (SDH only) • 64 bytes (SONET or SDH)
Expected Received Ptid Sync. pos.	The position within a 16-byte message of the synchronization byte
Expected ID	The expected trace identifier in the SONET path overhead
Received ID	The actual trace identifier received

To view the information for all OC-3 lines, enter the **lssonetlnerdis** command. The system lists summary E-RDI information for all OC-3 lines:

```
=======================================================================
              Sonet Lines  (lssonetlnerdis)
=======================================================================
Slot.Line           Support Path SRDI
================    ================
     9.1                disable
     9.2                disable
```

For a description of the information, see the previous table.

Understanding E-RDI and Trace Parameters

Path and trace labels help identify particular SONET line. The trace label is a text string carried in a 16-byte or 32-byte message carried in the SONET overhead. The system alters or reserves some of the bytes for synchronization or other purposes.

Using 16-Byte Messages

When using 16-byte messages, consider the following points:

• This message length only applies to SDH

• The system sets the most significant bit high of one byte for synchronization purposes. The position of the altered byte in the message is defined by the trace id position parameter.

• Any printable or non-printable ASCII character is valid (00-7F hex).

• The system always sends 16 characters. If the user input is less than 16 characters, the system pads the message with null characters (00 hex).

Using 64-Byte Messages

• The user can define a message of up to 62 bytes in length; the system automatically sets the last two characters to a carriage return (OD hex) and line feed (OA hex).

• Any printable or non-printable ASCII character is valid (00-7F hex)

• The system always sends 64 characters. If the user input is less than 62 characters, the system pads the message with null characters and then adds the carriage return and line feed.

Forming Hex Messages

You use two hexidecimal numbers to represent each ASCII character in a trace message. For example, you represent an ASCII space with the hex pair 20. The following table shows a few additional examples.

Trace Message	Hex String
4	34
Hello World	48656c6c6f20576f726c64

For 16-byte msg, the maximum input string size is 32 hex characters. For a64-byte message, you can specify up to 62 characters for a total of 124 hex characters. Refer to the following conversion table to map hex pairs to ASCII characters.

Table 4-1   Hex to ASCII Conversion Table

00 NUL	01 SOH	02 STX	03 ETX	04 EOT	05 ENQ	06 ACK	07 BEL
08 BS	09 HT	0A NL	0B VT	0C NP	0D CR	0E SO	0F SI
10 DLE	11 DC1	12 DC2	13 DC3	14 DC4	15 NAK	16 SYN	17 ETB
18 CAN	19 EM	1A SUB	1B ESC	1C FS	1D GS	1E RS	1F US
20 SP	21 !	22 dq	23 #	24 $	25 %	26 &	27 '
28 (	29)	2A *	2B +	2C ,	2D -	2E .	2F /
30 0	31 1	32 2	33 3	34 4	35 5	36 6	37 7
38 8	39 9	3A :	3B ;	3C <	3D =	3E >	3F ?
40 @	41 A	42 B	43 C	44 D	45 E	46 F	47 G
48 H	49 I	4A J	4B K	4C L	4D M	4E N	4F O
50 P	51 Q	52 R	53 S	54 T	55 U	56 V	57 W
58 X	59 Y	5A Z	5B [	5C \	5D]	5E ^	5F _
60 `	61 a	62 b	63 c	64 d	65 e	66 f	67 g
68 h	69 i	6A j	6B k	6C l	6D m	6E n	6F o
70 p	71 q	72 r	73 s	74 t	75 u	76 v	77 w
78 x	79 y	7A z	7B {	7C		7D }	7E ~	7F DEL

The system takes the following actions on error on bad hex strings:

- If you specify an odd number of hex characters, the last one is discarded.
- If you specify a single hex character, the process aborts with an error message.
- If the first hex number of a pair is not 0 to 7, the process aborts with an error message.
- If the second hex number of a pair is not 0 to F, the process aborts with an error message.

Configuring E-RDI and SONET Trace

To change E-RDI parameters, follow these steps:

Step 1   Change extended rdi parameters for SONET lines using the **chsonetperdi** command, specifying the location and E-RDI parameters. See the "chsonetperdi" section on page 9-123.

Step 2   Change path trace parameters for SONET lines using the **chsonettrace** command, specifying the location and path trace parameters. See the "chsonettrace" section on page 9-125.

Step 3   Change expected path trace parameters for SONET lines using the **chsonetexptrace** command, specifying the location and path trace parameters. See the "chsonetexptrace" section on page 9-119.

Configuration Tasks for Ports

See the following sections for port configuration tasks.

- Configuring Voice Ports
- Viewing All Ports

Configuring Voice Ports

Voice ports use voice over IP or ATM. The MGX 8260 Media Gateway identifies a voice port by a logical port number that is independent of the port's physical location. The following parameters describe the physical location:

- Slot number
- Port number
- DS0 number

When you add or change a voice port, you associate a logical port number with these physical descriptors.

Adding Voice Ports

To add a voice port, enter the **addvport** command as described in the "addvport" section on page 9-38. For example, to add logical voice port 4 using DS0 4 of DS1 line 1 in slot 13, type the following command:

```
addvport 13 4 1 4 1
```

Changing Voice Ports

You can change any of the optional parameters for an existing port. To change a voice port, use the **chvport** command, specifying the same parameters as required to add a voice port. For example, to change the echo tail while leaving other parameters unchanged, type the following command:

chvport 13 1 # # # # # 2

The system changes the echo tail for logical port 1 in slot 13 to tail24ms.

Deleting Voice Ports

To delete a voice port, enter the **delvport** command, specifying the logical slot number of an NSC and the logical port number for an existing voice port. For example, this command deletes port 4 of slot 13.

```
delvport 13 4
```

Viewing Voice Port Configuration and Status

To view the information for a single voice port, enter the **lsvport** command, specifying the logical slot number of an NSC and the logical port number for an existing voice port. The system displays detailed information for the port:

```
=====================================================================
                        Voice Port Entry (lsvport)
=====================================================================
Slot                                      : 13
Port                                      : 1
Line Number                               : 1
Ds0 Time Slot                             : 1
Operating Status                          : idle
Dynamic Dejitter (enabled/diabled)        : enabled
Initial Dynamic Dejitter Size (x10 msecs) : 1
Maximum Dynamic Dejitter Size (x10 msecs) : 50
Minimum Dynamic Dejitter Size (x10 msecs) : 1
Packet Loading Time (x10 msec)            : 1
Echo Path Tail (msec)                     : tail64ms
```

Displayed Information	Description
Slot	The logical slot number of the NSC associated with the port
Port	The logical port number assigned to the port
Line Number	The number of the DS1/E1 line associated with the DS0 voice line
DS0 Time Slot	The number of the DS0 channel for the voice port
Oper Status	The operating status of the voice port: • idle • loopback • blocked • disabled
Dynamic Dejitter	The status of the dejitter buffer, either enabled or disabled

Displayed Information	Description
Initial Dynamic Dejitter Size	The initial length of the dejitter buffer, specified in multiples of 10 msec.
Maximum Dynamic Dejitter Size	The maximum length of the dejitter buffer, specified in multiples of 10 msec.
Minimum Dynamic Dejitter Size	The minimum length of the dejitter buffer, specified in multiples of 10 msec.
Packet Loading Time	The IP packet loading time for voice service, expressed in multiples of 10 msec.
Echo Path Tail	The length of the echo cancel tail

To list the information for all voice ports, enter the **lsvports** command.

The system displays the voice port settings:

```
=====================================================================
                    Voice Port Entries (lsvports)
=====================================================================
Slot  Port  Line  Ds0  Oper Status Dejitter Buffer  Pkt Load  Echo Tail
====  ====  ====  ===  =========== ===============  ========  =========
 13    1     1    1        idle         enabled        1        tail64ms
 13    2     1    2        idle         enabled        1        tail64ms
 13    3     1    3        idle         enabled        1        tail64ms
 13    4     1    4        idle         disabled       1        tail64ms
```

Displayed Information	Description
Slot	The logical slot number of the NSC associated with the port
Port	The logical port number assigned to the port
Line	The number of the DS1/E1 line associated with the DS0 voice line
DS0	The number of the DS0 channel for the voice port
Oper Status	The operating status of the voice port
Dejitter Buffer	The status of the dejitter buffer, either enabled or disabled
Pkt Load	The IP packet loading time for voice service, expressed in multiples of 10 msec.
EchoTail	The length of the echo cancel tail

Checking All MGX 8260 ports

You can view all existing MGX 8260 ports in a single report. From this report, you see a list of ports and their slot, line, type, and DS0. Based on the line type, you proceed with port-specific commands to configure the port or obtain more information.

To view all ports, enter the **lsports** command. The system lists all ports:

```
=======================================================================
                  Common Port Entries (lsports)
=======================================================================
 Slot   Port    Line      Port Type            Ds0 Bit Map
===========   ======  ==============   ==============================
    6     1       1        voice                     1
    6     2       1        voice                     2
    6     3       1        voice                     4
    6     4       1        voice                     8
```

Displayed Information	Description
Slot	The slot hosting the port
Port	The common logical port number
Line	The common physical line number for this port
Port Type	The port type—voice for this release
DS0 Bit Map	Common DS0 bit map for this port

Viewing Active Calls

You view call activity and statistics by physical resource or transaction. These screens provide read-only information that is useful for audits or trouble analysis.

Viewing Calls by Slot/Line/Port

To view call information for a physical resource, enter the **lsacp** command, specifying the slot, line and DS0.

The system displays detail information for the active call:

```
=======================================================================
              Active Call Entry (lsacp) by source
=======================================================================
TransactionID
CallID
Source Slot number
Source Line number
Source Ds0
Source Logical Port number
Destination Slot number
Destination Line number
Destination Ds0
Destination Logical Port number
Number packets transmitted
Number packets received
Number packets dropped
Number of bytes transmitted
Number of bytes received
Number of bytes dropped
Call Type: (voip/tdm)
```

Displayed Information	Description
TransactionID	The transaction identifier for the active call. Only the backend platform software uses this number
CallID	An identifier for the active call.
Source Slot number	The slot number for the active call source. The slot, line, and DS0 numbers uniquely define a call while it is active.
Source Line number	The line number for the active call source.
Source Ds0	The DS0 number for the active call source.
Source Logical Port number	The logical port number for the active call source.
Destination Slot number	The slot number for the active call destination.
Destination Line number	The line number for the active call destination.
Destination Ds0	The DS0 number for the active call destination.
Destination Logical Port number	The logical port number for the active call destination.
Number packets transmitted	The number of packets transmitted since call setup.
Number packets received	The number of packets received since call setup.
Number packets dropped	The number of packets dropped since call setup.
Number of bytes transmitted	The number of bytes transmitted since call setup.
Number of bytes received	The number of bytes received since call setup.
Number of bytes dropped	The number of bytes dropped since call setup.
Call Type: (voip/tdm)	A value that identifies the call type: 1: Voice over IP. 2: Time division multiplex.

To view all active calls by resource, enter the **lsacps** command. The system displays summary call information:

```
========================================================================
        Active Call Entries (lsacps) based on source
========================================================================
Src Slot   Src Line   Src Ds0   LogPort   Type   Pkts Rcd   Pkts Txm
========   ========   =======   =======   ====   ========   ========
```

Viewing Calls by Transaction

To view call information for a specific transaction, enter the **lsact** command. The system displays detailed information for the call:

```
======================================================================
                        Active Call Entry (lsact)
======================================================================
TransactionID
CallID
Source Slot number
Source Line number
Source Ds0
Source Logical Port number
Destination Slot number
Destination Line number
Destination Ds0
Destination Logical Port number
Number packets transmitted
Number packets received
Number packets dropped
Number of bytes transmitted
Number of bytes received
Number of bytes dropped
Call Type: (voip/tdm)
```

To view all active calls by transaction, enter the **lsacts** command. The system displays summary information for active calls:

```
======================================================================
        Active Call Entries (lsacts) based on Transaction
======================================================================
Xtrn    Src Slot  Src Line  Src Ds0  LogPort  Type  Pkts Rcd  Pkts Txd
======  ========  ========  =======  =======  ====  ========  =======
```

About the Announcement Service

The MGX 8260 Media Gateway can store and play announcement messages when configured for the IPDC call control protocol. This service is useful when informing callers about a telephone number change or other voice messages. The system can store up to 100 announcement files, with a total play duration of 30 minutes.

File Encoding

The MGX 8260 Media Gateway supports the following encoding formats:

- G.711—A law and mu law
- G.726

File Types

The MGX 8260 Media Gateway supports the following file types:

- .au
- .wav

File Names

The Announcement Service uses a file identifier that it learns from the name you assign. Construct the file name as follows:

```
fileName_ID.ext
```

The file name is the alphanumeric string before the underscore and the file identifier is the number after the underscore. The id is a number from 1 to 100 and the file extension is either au or wav. The file name can contain up to 20 characters total.

Configuration Tasks for Announcement Services

See the following sections for Announcement Service configuration:

- Adding and Activating an Announcement
- Deactivating and Removing an Announcement
- Viewing Announcement Files

Adding and Activating an Announcement

To add and activate an announcement, follow this procedure:

Step 1 Download the announcement message using tftp.

```
tftp ipAddress
bin
put sourceFile announceFile
```

Step 2 Activate the message using the **acannfile** command, identifying the file by ID rather than by name. You can view file IDs using the **lsannfiles** command.

Step 3 The system copies the file from the download location on the SCC to all NSCs in the chassis.

Deactivating and Removing an Announcement

To deactivate and remove an announcement, follow this procedure.

Step 1   Deactivate the file using the **deacannfile** command, specifying the file ID. You can view file IDs using the **lsannfiles** command.

Step 2   Optionally, remove the file using the **rmannfile** command, specifying the file ID. Since the system has limited file capacity, you should remove announcements you no longer plan to use.

Viewing Announcement Files

To view details about a single file, use the **lsannfile** command. Specify the file ID for which you want information.

The system displays the following information:

```
===========================================================
                  Announcement File (lsannfile)
===========================================================
File ID                        :     1
File Name                      :     greeting.wav
File State                     :     inactive
File Length(byte)              :     80000
File Duration(second)          :     10
File Encoding                  :     g711mulaw
```

Displayed Information	Description
File ID	The numeric identifier of the file. The system extracted this number from the file name when it was downloaded.
File Name	The name of the file on the SCC file system
File State	The activation state of the announcement
File Length	The file length, in bytes
File Duration	The file duration, in seconds
File Encoding	The file encoding, either g711mulaw, g726encoding, or g711alaw

To view summary information about all files, use the **lsannfiles** command.

The system displays the following information:

```
=================================================
       Announcement Files (lsannfiles)
=================================================
File ID        File Name          File State
======    ====================   ===============
   1           greeting.wav          inactive
   2           hello.au              active
```

To interpret the columns, refer to the previous procedure for **lsannfile**.

To view resource usage for announcement files, use the **lsdurationif** command. The system displays the following information:

```
=================================================
Duration Information of Ann. files (lsdurationif)
=================================================
Maximum Duration(second)          :     1800
Current Duration (second)         :       90
Available Duration (second)       :     1710
```

Displayed Information	Description
Maximum Duration	The maximum available duration in seconds
Current Duration	The duration used by existing announcements, in seconds
Available Duration	The duration available for new announcements, in seconds

Call Control

The MGX 8260 Media Gateway works in conjunction with Media Gateway Controller (MGC) servers and the Public Switched Telephone Network (PSTN) to control voice and data calls.

Primary Call Control Components

The following components of the call control system are most important:

- Signal Transfer Point (STP)

  STPs are components in the Signalling System 7 (SS7) network that route management traffic between Service Switching Points (SSPs) and Service Control Points (SCPs).

- Central Office (CO)

  The CO provides telephony services to subscribers and handles the associated management traffic. The CO is often a SSP in the SS7 network.

- Media Gateway Controller (MGC)

  An MGC, such as the VSC2700 Media Gateway Controller, communicates with the SS7 network and MGX 8260 Media Gateways to process multimedia calls. These communications links can use backhaul channels to adapt PSTN signaling to IP/ATM signaling.

- MGX 8260 Media Gateway

  The MGX 8260 Media Gateway switches voice and data traffic between PSTN circuits and a packet backbone, and it works with PSTN signaling points for voice call control and with MGCs for multimedia call control. In addition, the MGX 8260 Media Gateway adapts PSTN signaling to IP/ATM signaling so the MGC can control PSTN calls directly.

Primary MGX 8260 Call Control Interfaces

The MGX 8260 Media Gateway communicates with other media and signaling equipment through the following interfaces:

- Integrated Services Digital Network (ISDN)

  The MGX 8260 Media Gateway communicates with PSTN equipment using an ISDN (Integrated Services Digital Network) D Channel of a Primary Rate Interface ISDN trunk. Within the D Channel, multiple logical links may exist, which are defined by DLSAP and MACSAP profiles.

- Media Gateway Control Protocol (MGCP)

   The MGX 8260 Media Gateway exchanges switching information with MGCs using either MGCP or IPDC over an IP network. The protocol choice depends on the specific network. The physical transport is Ethernet at the MGX 8260 interface.

- IP Device Control (IPDC)

   The MGX 8260 Media Gateway exchanges switching information with MGCs using either MGCP or IPDC over an IP network. The protocol choice depends on the specific network. The physical transport is Ethernet at the MGX 8260 interface.

- Backhaul

   The MGX 8260 Media Gateway tunnels ISDN Layer 3 (Q.931) messages through the IP network to and from each MGC. At the ISDN interface, the MGX 8260 Media Gateway implements ISDN Layer 2 (Q.921).

Understanding MGCP

This section describes how to configure and view MGCP (Media Gateway Control Protocol). The MGX 8260 Media Gateway implements the standard MGCP protocol stack (see Figure 5-1).

Figure 5-1   MGCP Protocol Stack

The protocol stack contains the following layers:

- MGCP
- UDP (User Datagram Protocol)
- IP (Internet Protocol)
- Physical—Ethernet LAN

The following diagram shows how to configure MGCP IP addresses in a fully-redundant system (see Figure 5-2).

Figure 5-2   MGCP Addresses and Ports

The minimal system consists of a primary MGC network, the MGX 8260 Media Gateway, and an IP network. You can add the secondary network and secondary MGC for more reliable operation.

Configuration Tasks for MGCP

To configure MGCP, you perform the following tasks:

- Switch from IPDC to MGCP
- Set IP addresses and ports
- Configure MGCP core parameters
- Configure default call setup parameters
- View MGCP configuration and status

Switching from IPDC to MGCP

The MGX 8260 Media Gateway supports two call control protocols, MGCP and IPDC. By default, MGCP is enabled and IPDC is disabled. This procedure explains how to switch back to MGCP from IPDC.

Warning   **Switching protocols interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To switch protocols, follow these steps:

Step 1   Change the protocol type using the **chprotocol** command, specifying 1 for MGCP; then confirm your action. The system automatically reboots.

Step 2   After the chassis restarts, log in again.

Step 3   Verify the change using the **lsndinf** command.

Configuring MGCP IP Addresses

Before beginning this procedure, obtain the IP addresses and ports that apply to your system. Make sure your IP and port selections do not conflict with other equipment on the networks.

Step 1   Set the local address and ports on network 1 using the **chmgcplocaladdr1** command as described in the "chmgcplocaladdr1" section on page 9-97.

Step 2   If your system uses network redundancy, set the local address and ports for network 2 using the **chmgcplocaladdr2** command.

Step 3   Set the primary media controller addresses and ports using the **chpmgcpaddr** command.

Step 4   If your system includes a redundant MGC, set the secondary media controller addresses and ports using the **chsmgcpaddr** command.

Step 5   Define the MGCP domain name using the **chmgcpdname**.

Step 6   Check your configuration using the **lsmgcpdef** command.

Configuring MGCP Core Parameters

MGCP core settings enable and disable the protocol and control how it works.

To configure MGCP core parameters, follow these steps:

Step 1   Specify the desired parameters using the **chmgcpcore** command.

Step 2   Confirm the changes using the **lsmgcp** command.

Configuring MGCP Default Call Setup Parameters

Call setup parameters define the default characteristics of a new call.

To configure default call setup parameters, follow these steps:

Step 1   Specify the default call setup parameters using the **chmpc** command.

Step 2   Confirm the changes using the **lsmpc** command.

Viewing MGCP Settings

You can view the following MGCP information:

- IP addresses and connection status
- Voice settings
- Default call settings
- MGCP status
- Protocol statistics

To view MGCP IP settings, use the **lsmgcpdef** command.

The following information is displayed:

```
=========================================================================
Primary MGCP Address   1                     :   10.15.26.1
Primary MGCP UDP Port  1                     :   2427
Primary MGCP Address   2                     :   10.15.27.1
Primary MGCP UDP Port  2                     :   2427
Secondary MGCP Address 1                     :   10.15.26.2
Secondary MGCP UDP Port  1                   :   2427
Secondary MGCP Address   2                   :   10.15.27.2
Secondary MGCP UDP Port  2                   :   2427
Connection Status                            :   unknown
Time at which Connection Status changed      :   02/12/2000 17:57:59
Local Address          1                     :   10.15.26.20
Local Primary Port     1                     :   2427
Local Address          2                     :   10.15.27.20
Local Primary Port     2                     :   2427
MGCP domain name                             :   mgx8260
```

Displayed Information	Description
Primary MGCP Address 1	The IP address of the Primary Media Gateway Controller on network 1. Specify the IP address in standard dot notation.
Primary MGCP UDP Port 1	The UDP port of the Primary Media Gateway Controller on network 1.
Primary MGCP Address 2	The IP address of the Primary Media Gateway Controller on network 2. Specify the IP address in standard dot notation.
Primary MGCP UDP Port 2	The UDP port of the Primary Media Gateway Controller on network 2.
Secondary MGCP Address 1	The IP address of the Secondary Media Gateway Controller on network 1.
Secondary MGCP UDP Port 1	The UDP port of the Secondary Media Gateway Controller on network 1.
Secondary MGCP Address 2	The IP address of the Secondary Media Gateway Controller on network 2.
Secondary MGCP UDP Port 2	The UDP port of the Secondary Media Gateway Controller on network 2.
Connection Status	The current status of the MGCP connection, as follows: • unknown—undefined status • connected—message is sent and response to it is received • connecting—message is sent and waiting for response • noSuchName—no domain name/IP address is found • noResponse—timeout on message
Timestamp	The time when the Connection Status last changed.

Displayed Information	Description
Local Address 1	The IP address of the MGX 8260 interface for network 1. This address is on the same subnet as the Primary MGCP IP Address.
Local Primary Port 1	The primary UDP port of the MGX 8260 interface for network 1.
Local Address 2	The IP address of the MGX 8260 interface for network 2. This address is on the same subnet as the Primary MGCP IP Address.
Local Primary Port 2	The primary UDP port of the MGX 8260 interface for network 2.

Viewing MGCP Voice Parameters

The MGX 8260 Media Gateway uses threshold levels to determine when to send alerts to the MGC. This command lists the current settings.

To view MGCP voice parameters, use the **lsmgcpvoice** command.

```
============================================================
 MGCP Voice parameters
============================================================
Lower Bound for Packet Loss            :
Higher Bound for Packet Loss           :
Lower Bound for Jitter                 :
Higher Bound for Jitter                :
Lower Bound for Latency                :
Higher Bound for Latency               :
```

Displayed Information	Description
Lower Bound for Packet Loss	The packet loss level that enables an alert.
Higher Bound for Packet Loss	The packet loss level that triggers an alert message. Once triggered, alert messages are disabled until the level drops below the lower bound.
Lower Bound for Jitter	The jitter level that enables an alert.
Higher Bound for Jitter	The jitter level that triggers an alert message. Once triggered, alert messages are disabled until the level drops below the lower bound.
Lower Bound for Latency	The latency level that enables an alert.
Higher Bound for Latency	The latency level that triggers an alert message. Once triggered, alert messages are disabled until the level drops below the lower bound.

Viewing Default Call Setup Parameters

To view call control parameters, use the **lsmpc** command. The system displays the following information:

```
=======================================================================
            MPC Parameters (lsmpc)
=======================================================================
Default Type of Network       :                voIp
Packetization Period          :                10
Bandwidth                     :                64
Echo Cancellation             :                off
Silence Suppression           :                off
Type of Service               :                2
Resource Reservation          :                bestEffort
Default COT Receive Tone      :                co2
Default COT Transmit Tone     :                co1
Default Encoding Type         :                g729a
```

Displayed Information	Description
Default Type of Network	The type of network, voice-over-IP, voice-over-ATM, or local
Packetization Period	Packetization Period in milliseconds. Value: fixed at 10
Bandwidth	The network bandwidth in kbps. Values: 8 and 64 kbps
Echo Cancellation	Enables or disables echo cancellation.
Silence Suppression	Enables or disables silence suppression.
Type of Service	The type of Service. Values: 1-256, where 1 indicates no service type
Resource Reservation	The resource reservation type. Values: • bestEffort • guaranteed • notUsed • controlledLoad
Default COT Receive Tone	The default receive tone. For transponder COT, when the media gateway controller does not supply the tones, the default tone the gateway receives is the default COT receive tone. Values: • co1 • co2

Displayed Information	Description
Default COT Transmit Tone	The default transmit tone. For transponder COT, when the media gateway controller does not supply the tones, the default tone the gateway transmits is the default COT transmit tone. Values: • co1 • co2
Default Encoding Type	The type of voice encoding when not specified by the MGC: • PCMU—Mu -law encoding • PCMA—A-law encoding • G729A • G726_32K

Viewing MGCP Status Information

To view MGCP status, use the **lsmgcp** command. The system displays the following MGCP status information:

```
===========================================================================
Incoming messages with bad protocol version   :   0
Request Timeout                                :   5000
Request Retries                                :   12
Operational Status                             :   down
Unrecognized Packets                           :   0
Maximum waiting delay for restart (millisecs) :   4000
Restart Delay (seconds)                        :   -1
Connectivity Timeout (millisecs)               :   60000
Response Timeout (millisecs)                   :   1000
Capabilities Package Name                      :   Generic; Trunk; Line; RTP
```

Displayed Information	Description
Incoming messages with bad protocol version	The total number of incoming messages delivered to the protocol entity that were for an unsupported protocol version.
Request Timeout	The time in milliseconds before retransmitting an unacknowledged message.
Request Retries	The maximum number of retries for a request that times out.
Operational Status	The administrative state, as follows: • up—MGCP is up and running • bringUpInProgress—MGCP is coming up • shutDownInProgress—MGCP is shutting down • down—MGCP is administratively down
Unrecognized Packets	The number of unrecognized packets since the MGX 8260 Media Gateway was reset.
Maximum waiting delay for restart	The maximum waiting delay, in milliseconds, before the Media Gateway interface sends the Restart In Progress message to the Media Gateway Controller
Restart Delay	The delay for a graceful shutdown.

Displayed Information	Description
Connectivity Timeout	The time in milliseconds to wait for a request from MGCP before dropping the link.
Response Timeout	The time in milliseconds to wait before retransmitting unacknowledged messages.
Capabilities Package Name	A list of the capabilities packages: • Generic • DTMF • MF • Trunk • Line • Handset • RTP • Network Access • Announcement • Script

Viewing MGCP Protocol Statistics

To view MGCP statistics, use the **lsmgcpstat** command. The system displays the following statistical information:

```
===========================================================
Total decode errors            :              0
Total encode errors            :              0
Total Drop On Receive errors   :              0
Total Request Transmissions    :              108
Total Response Transmissions   :              0
Provisional Responses          :              0
```

The MGCP protocol collects these statistics continuously after the SCC powers up or resets; you can't reset these counters. This display is a troubleshooting tool for use by experienced technicians who understand the protocol.

Understanding Sessions

The session manager organizes individual sessions into groups and sets (see Figure 5-3).

Figure 5-3   Organization of Sessions

The backhaul sessions and groups include the following components:

- Session—a connection between two points, defined by a local IP address and port and a remote IP address and port. The MGX 8260 Media Gateway supports four sessions per set, two for each session group.

- Session Group—a collection of one or more sessions for a single MGC. Typically, the individual sessions implement network redundancy. The MGX 8260 Media Gateway supports two session groups per set.

- Session Set—a collection of session groups, typically used to group session groups for redundant MGCs. The MGX 8260 Media Gateway supports up to six session sets for a total of up to 24 sessions.

When adding sessions, you create a structure that supports reliable operation. The goal for a fully-redundant system is to provide multiple management sessions to multiple MGCs via multiple physical networks (see Figure 5-4).

Figure 5-4   Logical Session Model

With full redundancy, you configure the following:

- Four sessions:
    - Session 1 (MGX 8260 Net 1 to Active MGC Net 1)
    - Session 2 (MGX 8260 Net 1 to Standby MGC Net 1)

> – Session 3 (MGX 8260 Net 2 to Active MGC Net 2)
>
> – Session 4 (MGX 8260 Net 2 to Standby MGC Net 2)
>
> This assumes that every transport address has corresponding IP interface address and a UDP port unique for that IP address.

- Two session groups:
  - Session group1 (session 1 and session 3)
  - Session group2 (session 2 and session 4)
- One session set containing session group 1 and group 2.

If the MGC can't handle all D Channels in one session set, you configure another similar set using different UDP ports and D Channels.

Configuration Tasks for Sessions

To configure ISDN backhaul signaling, perform the following tasks:

Step 1   Add session sets

Step 2   Add session groups

Step 3   Add session managers

Configuring Session Sets

You can view and change session sets.

Viewing Session Set Information

To view set details, use the **lsset** command. The following example lists information about session set 1.

```
lsset 1
```

The system displays the following session set information:

```
=========================================================================
                      Session Set (lsset)
=========================================================================
Set Identifier          :  1
Set State               :  outOfService
Total Groups            :  1
Active Group            :  -1
Minimum Slot Number     :  11
Maximum Slot Number     :  11
Minimum Line Number     :  1
Maximum Line Number     :  20
Redundancy Mode         :  nonFaultTolerant
SwitchOver Failures     :  0
Successful Switchovers  :  0
Down Count              :  0
```

Displayed Information	Description
Set Identifier	The identification number for the set. Use this number when requesting set details
Set State	The group state: • notCreated • outOfService • standby • active • full • switchOver
Total Groups	The total number of groups in the set
Active Group	The group within the set that is active
Minimum Slot Number	The minimum slot number this set controls
Maximum Slot Number	The maximum slot number this set controls
Minimum Line Number	The minimum line number this set controls
Maximum Line Number	The maximum line number this set controls
Redundancy Mode	The type of fault tolerance for the set
SwitchOver Failures	The number of unsuccessful switchovers from one session to another
Successful Switchovers	The number of successful switchovers from one session to another

To view all sets, use the **lssets** command. The system displays the following summary information:

```
=========================================================================
                      Session Sets (lssets)
=========================================================================
 Set Id    Set State       Total Groups   Active  Group
========  ============    ============   ===============
    1      outOfService         1            -1
```

See the description of displayed information for the **lsset** command.

Adding a Session Set

Session sets contain a collection of session groups and managers that control a range of MGX 8260 lines. One or two session sets are adequate for a single MGX 8260 chassis.

To add a session set, use the **addsset** command.

For example, the following command adds session set 1 for lines 1-168 of the BSC in slot 11:

```
addsset 1 11 1 11 168 1
```

Deleting a Session

To delete a session set, use the **delsset** command. For example, the following command deletes session set 1:

```
delsset 1
```

Configuring Session Groups

You can view and change session groups.

Viewing Session Groups

To view group details, use the **lsgroup** command. For example, the following command lists information for session 1 of group 1.

```
lsgroup 1 1
```
The system displays the following group information:

```
=======================================================================
                    Session Group (lsgroup)
=======================================================================
Set Identifier          :  1
Group Identifier        :  1
Group State             :  outOfService
Group Use State         :  none
Group Active Session    :  -1
Group Previous Session  :  -1
Total Sessions          :  1
Total Active Sessions   :  0
```

Displayed Information	Description
Set identifier	The set to which this group belongs
Group Identifier	The identification number for the group
Group State	The group state: • outOfService • inService • notCreated
Group Use State	The session use state: active standby none
Group Active Session	The session within this group that is active

Displayed Information	Description
Group Previous Session	The previously-active session within this group
Total Sessions	The total number of sessions for this group
Total Active Sessions	The total number of active sessions for this group

To view all groups, use the **lsgroups** command. The system displays the following group information:

```
============================================================================
                      Session Groups (lsgroups)
============================================================================
  Group Id   Set ID     Use State       Active Session     Group State
  ========  =========  ============     ==============     ==============
     1         1         none              -1                outOfService
```

See the description of displayed information for the **lsgroup** command.

Adding a Session Group

MGCP session groups organize sessions into logical groups. A session group contains a collection of sessions that communicate with the same MGC.

To add a session group, use the **addsgrp** command.

For example, the following command adds session group 1 to session set 1:

```
addsgrp 1 1
```

Deleting a Session Group

To delete a session group, use the **delsgrp** command.

For example, the following command deletes session group 1 from session set 1:

```
delsgrp 1 1
```

Configuring Sessions

You can view and change sessions.

Viewing Session Information

To view session details, use the **lssession** command. The following example lists information about session 1 of group 1 in set 1.

```
lssession 1 1 1
```

The system displays the following session information:

```
=====================================================================
                    Session Entry (lssession)
=====================================================================
Session Identifier      :  1
Group Id                :  1
Session Set Id          :  1
Session State           :  openWait
Use State               :  outOfService
Priority                :  1
Local Port              :  7007
Local Address           :  10.15.38.233
Remote Port             :  7007
Remote Address          :  10.15.38.234
```

Displayed Information	Description
Session Identifier	The identification number for this session
Group Id	The identification number for the group to which this session belongs
Session Set ID	The identification number for the session set to which this session belongs
Session State	The session state: • notCreated • open • openWait • openXfer • close • closeWait • userClose • autoReset
Use State	The session use state: • outOfService • inService • blocked
Priority	The priority level of this session
Local Port	The local UDP port number for this session
Local Address	The local IP address for this session
Remote Port	The remote port of a MGC for this session
Remote Address	The remote IP address for this session

To view all sessions, use the **lssessions** command. The system displays the following summary information:

```
==========================================================================
                    Sessions (lssessions)
==========================================================================
Set Id      Group Id    Session Id  Session State   Use State
======      ========    ==========  =============   ==========
    1           1           1        openWait          outOfService
```

See the description of displayed information for the **lssession** command.

Adding a Session

Sessions are members of session groups, which in turn, are members of session sets. To ensure reliable operation, set up two sessions to each controller through two subnets.

To add a session, use the **addsess** command.

For example, the following command adds session 1 to group 1 of set 1:

```
addsess 1 1 1 10.15.38.233 7007 10.15.38.234 7007
```

Deleting a Session

To delete a session, use the **delsess** command.

For example, the following command deletes session 1 from session group 1 of set 1:

```
delsess 1 1 1
```

Viewing Session Statistics

The MGX 8260 reports the following session statistics:

- Session group statistics
- RUDP connection statistics
- RUDP transport statistics
- Session statistics

Viewing Session Group Statistics

To view session group statistics, use the **lsgroupstat** command.

For example, the following command lists statistics for group 1 of set 1:

```
lsgroupstat 1 1
```

The system displays the group statistics:

```
=======================================================================
                    Session Group Statistics (lsgroupstat)
=======================================================================
Set Identifier           :    1
Group Identifier         :    1
Session Failures         :    0
Session Failover Success :    0
Active Packets Received  :    0
Standby Packets Received :    0
Total PDU Post Errors    :    0
```

Viewing RUDP Connection Statistics

To view RUDP connection statistics, use the **lsrudpconnstats** command.

For example, the following command lists statistics for session 1 of group 1 in set 1:

```
lsrudpconnstats 1 1 1
```

The system displays the statistics:

```
=======================================================================
            RUDP statistics for a connection (lsrudpconnstats)
=======================================================================
Set Index                               :  1
Group Index                             :  1
Session Index                           :  1
State of the Connection                 :  synSent
Number of auto resets                   :  0
Number of auto resets received          :  0
Number of packets received in Sequence  :  0
Number of packets received out of Sequence:  0
Number of packets sent                  :  4
Number of packets Received              :  0
Number of data packets sent             :  0
Number of data packets received         :  0
Number of packets discarded             :  0
Number of packets retransmitted         :  0
```

Viewing RUDP Transport Statistics

To view RUDP transport statistics, use the **lsrudptxstats** command.

For example, the following command lists statistics for session 1 of group 1 in set 1:

```
lsrudptxstats 1 1 1
```

The system displays the statistics:

```
=======================================================================
                    RUDP Transport Statistics (lsrudptxstats)
=======================================================================
Session Identifier            :        1
Group Id                      :        1
Session Set Id                :        1
RUDP Connections Opens        :        0
RUDP Connection Resets        :        978
RUDP Connection Refused       :        0
RUDP Connection Failed        :        0
RUDP Auto Resets              :        0
RUDP Open Failed              :        0
RUDP Not Ready                :        0
RUDP Connection Not Open      :        0
RUDP Transmit Window Full     :        0
RUDP Transmit Fail-No resources:       0
RUDP Transmit Fail-Enque failed:       0
```

Viewing Session Statistics

To view session statistics, use the **lssessstats** command.

For example, the following command lists statistics for session 1 of group 1 in set 1:

```
lssessstats 1 1 1
```

The system displays the statistics:

```
=======================================================================
                    Session Statistics (lssessstats)
=======================================================================
Session Identifier            :        1
Group Id                      :        1
Session Set Id                :        1
Session Resets                :        0
Session Opens                 :        0
Session CloseWaits            :        0
Session Closes                :        2144
Session UnExpected Transitions :       0
Session Total Packets Received :       0
Session Receive Errors        :        0
Session Total Packets Sent    :        0
Session PDU Transmission Fails :       0
Session PDU Blocked           :        0
Session NonPDU Fails          :        0
Session NonPDU Blocked        :        0
```

To view session statistics since the last reset, use the **lssessstatslr** command.

Managing ISDN D Channels

The MGX 8260 Media Gateway extends Primary Rate Interface ISDN D Channel signaling to a Media Gateway Controller via a backhaul channel (see Figure 5-5).

Figure 5-5   D Channel to Media Gateway Controller

Each BSC contains 168 T1 lines, each a potential Primary Rate ISDN line. An ISDN line contains 24 channels, one of which is the D Channel that carries the signaling information for the other 23 channels. The BSC card can terminate a D Channel signaling stack and pass the payload to a Media Gateway Controller, via the SCC, using a backhaul session.

The following procedures describe how to configure a D Channel for a backhaul session. The procedures assume you already have a DS3 line and have provisioned a PRI ISDN line on one of its circuits. ISDN D Channels can be difficult to configure because they have many settings, so the MGX 8260 Media Gateway simplifies the process by grouping common settings into two types of profiles:

- Digital Link Service Access Profile
- Media Access Control Service Access Profile

The Digital Link Service Access Profile (DLSAP) and Media Access Control Service Access Profile (MACSAP) profiles define different levels of the ISDN protocol stack (see Figure 5-6).

Figure 5-6   DLSAP and MACSAP Interfaces

When adding D Channels, you simply specify suitable profiles that contain the desired configuration set. You can create profiles using default settings that accommodate the signaling requirements for common applications.

D Channel Configuration Tasks

The MGX 8260 Media Gateway simplifies the process of creating D Channels with DLSAP and MACSAP profiles. These profiles provide a template of parameter settings that you apply when adding D Channels. Changes you make to the profiles only apply to lines you subsequently add, not to lines that already exist. If you want to change the configuration of a D Channel, delete it first and then recreate a new one using the new template.

The following describes the high-level procedure for configuring a D Channel on an existing DS3 trunk:

Step 1   Define a DLSAP profile.

Step 2   Define a MACSAP profile.

Step 3   Define a D Channel on a PRI ISDN line within the DS3 trunk, using the profiles you defined in Steps 1 and 2.

The following sections present detailed procedures for each of these steps. For more information on configuring backhaul, see the "Understanding Sessions" section on page 5-10.

Managing MACSAP Profiles

MACSAP management consists of adding and deleting profiles. You need at least one profile to add D Channels.

Adding MACSAP Profiles

To add a MACSAP profile, follow these steps:

Step 1   Specify a MACSAP profile using the **addmacsapprof** command. For example, The following command adds MACSAP profile 1 with default settings:

```
addmacsapprof 1
```

Step 2   Check the profile settings using the **lsmacsapprof** command.

Deleting MACSAP Profiles

To delete a MACSAP profile, use the **delmacsapprof** command. The following example deletes profile 1.

```
delmacsapprof 1
```

Use **lsmacsapprofs** to discover valid profile numbers.

Viewing MACSAP Profiles

To view a MACSAP profile, use the **lsmacsapprof** command. The following example displays information about MAC SAP 1.

```
lsmacsapprof 1
```

The system displays a single MACSAP profile:

```
=========================================================================
                 MACSAP Profile (lsmacsapprof)
=========================================================================
MACSAP Identifier          :     1
MAC SAP Interface          :     network
Link Setup Arbitration     :     passive
LAPD Type                  :     ccitt
Maximum Outstanding Frames :     7
Timer Queue Upper Threshold :    1000
Timer Queue Lower Threshold :    100
Connection Timer           :     500
T201 Timer                 :     1
T202 Timer                 :     2
TEI Check Timer            :     5
N202                       :     3
Lowest Range of Automatic TEI:   64
Keep MAC Up All The Time   :     true
```

See the description of displayed information in the "Viewing D Channels" section on page 5-26.

To view all MACSAP profiles, use the **lsmacsapprofs** command. The system displays MACSAP profile summaries:

```
=========================================================================
                 MACSAP Profiles (lsmacsapprofs)
=========================================================================
MACSAP      Interface    Arbitration    LAPD Type        N202
=========   ==========   =============  =============    ==========
     1        network      passive         ccitt         3
```

See the description of displayed information in Deleting D Channels, page 5-26 for a description of this information.

Viewing MACSAP Statistics

To view MACSAP statistics for a line, use the **lsmacsapstat** command. The following example displays statistics for the MACSAP at slot 7, line 3.

```
lsmacsapstat 14.1
```

The system displays MACSAP statistics for the specified line:

```
=========================================================================
                 Statistics for a MACSAP (lsmacsapstat)
=========================================================================
MACSAP                              :     14.1
MACSAP Status                       :     inUse
Received Frames                     :     0
Transmitted Frames                  :     0
Received Bytes                      :     0
Transmitted Bytes                   :     0
Receive Queued Count                :     0
Transmit Queued Count               :     0
Receive Dropped Count               :     0
Transmit Failed Count               :     0
```

To view all MACSAP statistics, use the **lsmacsapstats** command. The system displays MACSAP statistic summaries:

```
========================================================================
              MACSAP Statistics  (lsmacsapstats)
========================================================================
Slot.Line   Received Frames   Transmitted Frames  Received Bytes
=========   ===============   ==================  ==============
   14.1            0                  0                  0
```

Managing DLSAP Profiles

DLSAP management consists of adding and deleting profiles. You need at least one profile to add D Channels.

Adding DLSAP Profiles

To add a DLSAP profile, follow these steps:

Step 1   Specify the settings that define a DLSAP profile using the **adddlsp** command as described in the "adddlsp" section on page 9-8. For example, the following command adds DLSAP profile 1 with default settings:

```
adddlsp 1
```

Step 2   Check the profile settings using the **lsdlsp** command.

Deleting DLSAP Profiles

To delete a DLSAP profile, use the **deldlsp** command, specifying the identifier of the DLSAP profile to delete. The following example deletes profile 9.

```
deldlsp 9
```

Viewing DLSAP Profiles

To view a DLSAP profile, use the **lsdlsp** command. The following example lists DLSAP profile 1.

```
lsdlsp 1
```

The system displays the specified DLSAP profile:

```
========================================================================
             DLSAP Entry (lsdlsp)
========================================================================
DLSAP Profile Id            :     1
Frame Length                :     1960
Window Size                 :     7
Retransmission Count        :     3
Congestion Timer            :     200
t200 Timer                  :     1
t203 Timer                  :     10
Modulo                      :     128
TEI Assignment              :     1
Maximum DLCs for this DLSAP :     1
TEI                         :     2
```

See the description of displayed information in Viewing D Channels, page 5-26.

To view all DLSAP profiles, use the **lsdlsps** command. The system displays DLSAP profile summaries:

```
========================================================================
             DLSAP Profiles (lsdlsps)
========================================================================
Profile#    Frame Len    Window Size    Retrans Count    Modulo
========    ==========   ============   =============    ==========
       1         1960              7                3           128
```

For more information, see the description of displayed information in the "Viewing D Channels" section on page 5-26.

Viewing DLSAP Status

To view DLSAP status for a line, use the **lsdlsapstatus** command, specifying the slot and line number delimited by a period. The following example shows how to get the status of a DLSAP in slot 14, line 1.

```
lsdlsapstatus 14.1
```

The system displays DLSAP the status for the specified line:

```
========================================================================
             Status for a DLSAP (lsdlsapstatus)
========================================================================
DLSAP                           :     14.1
Number of Outstanding Frames    :     0
Number of Frames Dropped by MAC :     0
Local Busy Status               :     no
Remote Busy Status              :     no
Next NS to Send                 :     0
Next NS Expected                :     0
Link Level Matrix State         :     disconEnabled
Flow Control State              :     off
Retransmission Count            :     0
Queue Size                      :     0
Number of Active SAPs           :     1
Number of Active DLCs           :     1
```

Displayed Information	Description
DLSAP	The slot and line number for the PRI ISDN line
Number of Outstanding Frames	The number of outstanding frames to the MAC

Displayed Information	Description
Number of Frames Dropped by MAC	The number of frames dropped by the MAC
Local Busy Status	The local SAP busy state: no yes
Remote Busy Status	The remote SAP busy state: no yes
Next NS to Send	The next sequence number to send
Next NS Expected	The next Sequence Number expected
Link Level Matrix State	The state of the Link Level Matrix: - disconDisabled—disconnected disabled - connectingLL—Connecting Link Level - dataTransfer—Data Transfer mode - disconnectingLL—Disconnecting Link Level - connectAwaitTEI—Connecting - awaiting TEI - rstLLEnable—Resetting Link Level Enabled - rstLLDisable—Resetting Link Level Disabled - frameRejection—Frame Rejection - disconEnabled—Disconnected Enabled - assignAwaitTEI—Assign Awaiting TEII
Flow Control State	The flow control state: off, on
Retransmission Count	The count of retransmissions
Queue Size	The size of the queue
Number of Active SAPs	The number of active Service Access Points
Number of Active DLCs	The number of active Data Link Connections

Viewing DLSAP Statistics

To view DLSAP statistics for a line, use the **lsdlsapstat** command. The following example displays statistics for a DLSAP in slot 14, line 1.

```
lsdlsapstat 14.1
```

The system displays DLSAP statistics for the specified line:

```
========================================================================
                 Statistics for a DLSAP (lsdlsapstat)
========================================================================
DLSAP                                  :      14.1
Information Frames            (Received):      0
Information Frames        (Transmitted):      0
Receive Ready Frames         (Received):      0
Receive Ready Frames      (Transmitted):      0
Receive Not Ready Frames     (Received):      0
Receive Not Ready Frames (Transmitted):      0
SABM Frames                  (Received):      0
SABM Frames               (Transmitted):      0
Disconnect Frames            (Received):      0
Disconnect Frames         (Transmitted):      0
UA Frames                    (Received):      0
UA Frames                 (Transmitted):      0
Disconnect Mode Frames       (Received):      0
Disconnect Mode Frames    (Transmitted):      0
Frame Reject Frames          (Received):      0
Frame Reject Frames       (Transmitted):      0
Exchange ID Frames           (Received):      0
Exchange ID Frames        (Transmitted):      0
Unnumbered Info Frames       (Received):      0
Unnumbered Info Frames    (Transmitted):      0
```

To view all DLSAP statistics, use the **lsdlsapstats** command. The system displays summary DLSAP statistics:

```
========================================================================
             DLSAP Statistics  (lsdlsapstats)
========================================================================
Slot.Line Received SABM Frames Received Info Frames Received Disc Frame
========= =================== =================== ===================
    14.1           0                   0                   0
```

Configuring D Channels

The MGX 8260 Media Gateway communicates with PSTN equipment over Primary Rate Interface (PRI) ISDN D Channels.

Adding D Channels

Adding a D Channel requires an existing DS3 line and suitable DLSAP and MACSAP profiles. To add a D Channel, follow these steps:

Step 1 Specify the D Channel parameters using the **adddchan** command, as described in the "adddchan" section on page 9-6.

```
adddchan 11.1 1 1 24
```

Step 2 Verify the configuration using the **lsdchan** command.

Changing D Channels

To change a D Channel, delete the desired D Channel and then add a new one. When creating the new channel, choose a DLSAP and MACSAP profile that contains the desired settings. If such a profile doesn't exist, create one first before adding the new D Channel. For more information on the relationship between D Channels and profiles, see D Channel Configuration Tasks, page 5-19.

Deleting D Channels

To delete a D Channel, use the **deldchan** command. Specify the slot and line number, delimited by a period, of the D Channel you want to delete. The following example deletes the D Channel at slot 5, line 4.

```
deldchan 5.4
```

Viewing D Channels

You can view D Channels four ways:

- Bulk capacity
- Bulk capacity and usage
- Summary for all channels
- Details for one channel

To view bulk D Channel capacity, use the **lslogicalcarddchans** command.

The system displays the D Channel capacity by slot:

```
=======================================================================
            D-channels  (lslogicalcarddchans)
=======================================================================
slot number        max number of D channels
==============     =========================
  2                    16
  4                    16
```

To view bulk D Channel capacity and usage, use the **lslogicalcarddchan**. Specify the slot number of desired card.

The system displays the D Channel usage for the specified card:

```
=======================================================================
            D-channels Entry (lslogicalcarddchan)
=======================================================================
Slot Number                          :    2
Max Number of T1/E1 Lines            :    16
D-channel info(line 1 -16)           :    4
D-channel info(line 17 - 32)         :    0
D-channel info(line 33 - 48)         :    0
D-channel info(line 49 - 64)         :    0
D-channel info(line 65 - 80)         :    0
D-channel info(line 81 - 96)         :    0
D-channel info(line 97 - 112)        :    0
D-channel info(line 113 - 128)       :    0
D-channel info(line 129 - 144)       :    0
D-channel info(line 145 - 160)       :    0
D-channel info(line 161 - 176)       :    0
D-channel info(line 177 - 192)       :    0
```

To view D Channel information for a single line, use the **lsdchan** command. Specify the slot and line number, delimited by a period, of the D Channel.

The system displays D Channel information for the specified channel. This information reflects the DLSAP and MACSAP profiles used when adding the D Channel.

```
=======================================================================
               D-Channel Entry (lsdchan)
=======================================================================
DChannel Number             :     14.1
DLSAP Index                 :     1
MACSAP Index                :     1
DS0                         :     1
Frame Length                :     1960
Window Size                 :     7
Retransmission Count        :     3
Congestion Timer            :     200
t200 Timer                  :     1
t203 Timer                  :     10
Modulo                      :     128
TEI Assignment              :     1
Maximum DLCs for this DLSAP :     1
TEI                         :     2
MAC SAP Interface           :     network
Link Setup Arbitration      :     active
LAPD Type                   :     ccitt
Maximum Outstanding Frames  :     7
Timer Queue Upper Threshold :     1000
Timer Queue Lower Threshold :     100
Connection Timer            :     500
T201 Timer                  :     20
T202 Timer                  :     2
TEI Check Timer             :     5
N202                        :     3
Lowest Range of Automatic TEI:    64
Keep MAC Up All The Time    :     true
```

Displayed Information	Description
DChannel Number	The line that contains the D Channel.
DLSAP Index	The DLSAP index for this D Channel.
MACSAP Index	The MACSAP index for this D Channel.
DSO	The DS0 number this D Channel uses.
Frame Length	The frame length, which is the maximum number of octets in an information field. Values: 1 to 1960. Default: 1960
Window Size	The maximum number of sequentially numbered I-frames that may be outstanding. This window-size depends on the modulo. If the modulo is 8, then this range is (1 - 8) and if the modulo is 128, then the range of the window size is (1 - 128).
Retransmission Count	The maximum number of retransmissions of a frame. Values: 1 to 1023. Default: 3
Congestion Timer	The time after which DLCs are dropped during periods of network congestion, in seconds. Values: 1 to 1023. Default: 200
T200 Timer	The wait time before frame transmission may be initiated, in seconds. Values: 1 to 3. Default: 1

Displayed Information	Description
T203 Timer	The maximum time between retransmission of the TEI identity request message, in seconds. Values 20 to 60. Default: 10
Modulo	Each I-frame is sequentially numbered and may have values 0 through (N-1) where N is this modulus. Values: 8 or 128. Default: 128
TEI Assignment	The Terminal Endpoint Identifier Assignment setting: 1. automatic—TEI is selected by the ASP Layer Management procedure on the network side. 2. nonAutomatic—TEI is selected by the user. (default)
Maximum DLCs for this DLSAP	The maximum number of DLCs for this DLSAP. Values: 1 to 16. Default: 1
TEI	The starting number for reassigning TEIs. This number is used in conjunction with the previous two parameters to number TEIs. For example, if TEI Assignment is nonAutomatic, Maximum DLCs for this DLSAP is 4, and TEI is 14. When a D Channel is added, 4 TEIs starting at 14 are preconfigured. Values: 0 to 63
MACSAP Identifier	The MACSAP profile identifier. Values: 1 to 20
MACSAP Interface	The logical interface. Values: 1. user 2. network
Link Setup Arbitration	The link setup arbitration scheme. Values: 1. passive 2. active

Displayed Information	Description
LAPD Type	The LAPD interface type: • test—Test • ccitt—CCITT • att5EssBRA—AT&T 5ESS BRA • att5EssPRA—AT&T 5ESS PRA • att4Ess—AT&T 4ESS • ntDMS100BRA—NT dms100 BRA ntDMS100PRA—NT dms100 PRA • vn2or3—VN 2 or VN 3 • insNet—INS Net • tr6MPC—tr6 MPC • tr6PBX—tr6 PBX • ausb—Austel Basic • ausp—Austel Primary • nISDN1—National ISDN-1 • etsi—ETSI • bc303TMC—Bellcore tr303 tmc • bc303CSC—Bellcore tr303 csc • ntDMS250—NT dms250 • bellcore—Bellcore
Maximum Outstanding Frames	The maximum number of sequentially numbered I-frames that may be outstanding. Values: 1 to 255
Timer Queue Upper Threshold	The upper threshold for I-frame queue. When the I-frame queue size exceeds this threshold, the congestion timer is started and flow-control is turned on. Values: 1 to 32767
Timer Queue Lower Threshold	The lower threshold for I-frame queue. When the I-frame queue size falls below this threshold, the congestion timer is stopped and flow-control is turned off. Values: 1 to 32767
Connection Timer	The connection timer. Values: 1 to 1024
T201 Timer	The minimum time between transmissions of the TEI Identity check message, in seconds. Values: 1 to 1024
T202 Timer	The minimum time between retransmission of the TEI Identity request message, in seconds. Values: 1 to 1024
TEI Check Timer	The TEI check timer. The value 1025 means the TEI Check Timer is disabled. Values: 1 to 1025, where 1025 = disables
N202	Minimum time between transmissions of TEI Identity check messages.

Displayed Information	Description
Lowest Range of Automatic TEI	The allocated TEI value. When configured for Automatic TEI Assignment, ASP can allocate TEIs greater than or equal to Lowest Automatic TEI. Values: 1 to 127
Keep MAC Up All The Time	The state of the Keep MAC Up All The Time flag. Values: 1. False 2. True

To view all D Channels, use the **lsdchans** command. The system displays summary information for D Channels:

```
=============================================================
             D Channels   (lsdchans)
=============================================================
Slot.Line    Frame Len   Window Size   t200 Timer    TEI
=========   ===========  ============  ==========  ==========
    14.1        1960          7             1           2
    14.2        1960          7             1           2
    14.3        1960          7             1           2
    14.5        1960          7             1           2
```

For more information, see the description of displayed information for the **lsdchan** command.

Viewing LAPD Parameters

To view LAPD settings for a card, use the **lslapd** command. Specify the card number associated with the LAPD information.

```
========================================================================
          LAPD General Configuration Information (lslapd)
========================================================================
Physical Card Number      :    14
Number of Physical Links  :    168
Number of DLCs            :    10752
Number of DLCs per SAP    :    168
Number of ASP Links       :    168
```

Displayed Information	Description
Physical Card Number	The physical card number
Number of Physical Links	The total number of physical links for this instance of LAPD on the card
Number of DLCs	The total number of DLCs for this instance of LAPD on the card
Number of DLCs per SAP	The total number of LAPD links for this instance of LAPD on the card
Number of ASP Links	The number of Assigned Source Points

To view LAPD settings for all cards, use the **lslapds** command. The system displays summary information for LAPD:

```
=======================================================================
                       LAPD Card Entries (lslapds)
=======================================================================
Card   Physical Links     Number of DLCs    LD Links   ASP Links
=====  ==============     ==============    ========  =========
  14    168                10752               168       168
```

For more information, see the description of displayed information for the **lsdchan** command.

Configuration Tasks for IPDC

IPDC is an alternative for MGCP for controlling voice calls through the MGX 8260 Media Gateway. When using IPDC, you don't need to configure sessions or backhaul channels.

To configure IPDC, perform the following tasks:

- Switch from MGCP to IPDC
- Set IP addresses and ports
- Configure core settings
- Configure link timers
- Configure COT tones
- Activate the protocol
- View IPDC configuration and status

Switching from MGCP to IPDC

The MGX 8260 Media Gateway supports two call control protocols, MGCP and IPDC. By default, MGCP is enabled and IPDC is disabled. To switch to IPDC you must change the active protocol type and reset the chassis.

Warning   **Switching protocols interrupts service. Perform this operation during light traffic periods or in a pre-arranged maintenance window.**

To switch protocols, follow these steps:

Step 1   Change the protocol type using the **chprotocol** command, specifying 2 for IPDC; then confirm you action.

The system automatically reboots.

Step 2   After the system restarts, log in again and verify the change using the **lsndinf** command.

Configuring Soft Switch IP Addresses

Before beginning this procedure, obtain the IP addresses and ports that apply to your system. Make sure your IP and port selections do not conflict with other equipment on the network.

Step 1 Set the primary Soft Switch address and port using the **chipdcpssip** command as described in the "chipdcpssip" section on page 9-79.

Step 2 If your system includes a redundant Soft Switch, set the secondary IP address and port using the **chipdcsssip** command as described in the "chipdcsssip" section on page 9-87.

Step 3 Define the IPDC gateway IP address using the **chipdcgwip** command as described in "chipdcgwip" section on page 9-76.

Step 4 Verify the configuration using the **lsipdc** command.

Configuring a Pseudo IP Address

The MGX 8260 Media Gateway supports a single pseudo-IP address for the four broadband ports. Use this procedure to initialize this address.

To configure a pseudo-IP address, follow these steps:

Step 1 Specify a pseudo IP address for the four broadband ports using the **chpseudoip** command. Specify an IP address that is in the same subnet as the broadband ports.

Step 2 Verify the configuration using the **lsipdc** command.

Configuring IPDC Core Settings

To configure IPDC core settings, follow these steps:

Step 1 Specify the system ID using the **chipdcssid** command.

Step 2 Specify the system type **chipdcsstype.**

Step 3 Limit the number of IPDC modules supported using the **chipdcmaxm** command.

Step 4 Set the bay number using the **chipdcssbaynum** command.

Step 5 Set the numbering format using the **chipdcssnumfor** command.

Step 6 Verify the changes using the **lsipdc** command.

Configuring IPDC Timers and Counters

IPDC timers and counters control how the link behaves under abnormal or fault conditions. You can use the default settings, or provide a custom set.

To configure IPDC core settings, follow these steps:

Step 1 Set the IPDC link timers and retry counters using the **chipdctimer** command.

Step 2 Verify the changes using the **lsipdctimer** command.

Configuring COT Settings

To configure IPDC COT settings, follow these steps:

Step 1 Specify the IPDC COTs using the **chipdccot** command.

Step 2 Verify the changes using the **lsipdccot** command.

Activating IPDC and Link Health Check

To activate IPDC links, follow these steps:

Step 1 Enable the primary and secondary Soft Switch using the **chipdcssadm** command.

Step 2 Enable the primary and secondary health check feature using the **chipdcsshlth** command.

Step 3 Verify the link status using the **lsipdc** command.

Viewing IPDC Settings

You can view the following IPDC information:

- IP addresses and connection status
- IPDC status
- Protocol statistics

To view IPDC IP settings, use the **lsipdc** command.

The following information is displayed:

```
==============================================================================
          IPDC Soft Switch Configuration (lsipdc)
==============================================================================
Primary Soft Switch IP Address        :         10.1.1.2
Primary Soft Switch TCP port          :         5000
Secondary Soft Switch IP Address      :         10.1.1.3
Secondary Soft Switch TCP port        :         5000
Gateway IP Address                    :         10.1.1.1
Gateway TCP port                      :         5000
System Id                             :         Cisco_MGX-8260
System Type                           :         TDM_XCONN
Pseudo IP Address                     :         0.0.0.0
Maximum Modules                       :         16
Bay Number                            :         00000001
Numbering Format                      :         zeroBased
Current Soft Switch                   :         primary
Operation Status (Current Soft Switch) :        down
Previous Operation Status (CSS)       :         down
Date and time of last opst change     :         07/24/2000 08:31:05
Primary Soft Switch Health Check      :         enabled
Secondary Soft Switch Health Check    :         enabled
Health Check Response Timer (msec)    :         1000
Secondary Soft Switch Admin Status    :         down
Graceful Down Timer (sec)             :         0
```

Displayed Information	Description
Primary Soft Switch IP Address	The IP address of the primary Soft Switch
Primary Soft Switch TCP port	The port number of the primary Soft Switch
Secondary Soft Switch IP Address	The IP address of the secondary Soft Switch
Secondary Soft Switch TCP port	The port number of the secondary Soft Switch
Gateway IP Address	The IP address of the gateway for IPDC traffic
Gateway TCP port	The port number of the gateway for IPDC traffic
System Id	The user-defined identifier for this system
System Type	The user-defined identifier for this system type
Pseudo IP Address	A single IP address that represents up to four broadband ports
Maximum Modules	The maximum number of IPDC modules
Bay Number	The number of this bay for IPDC purposes
Numbering Format	Specifies zero-based or one-based numbering for communicating with the Soft Switch
Current Soft Switch	The active Soft Switch
Operation Status (Current Soft Switch)	The operational state of the active Soft Switch
Previous Operation Status (CSS)	The previous operational state of the active Soft Switch
Date and time of last opst change	A date stamp for the last operational status change
Primary Soft Switch Health Check	The enable state of the primary Soft Switch health check
Secondary Soft Switch Health Check	The enable state of the secondary Soft Switch health check
Health Check Response Timer (msec)	The current setting for the health check response timer

Displayed Information	Description
Secondary Soft Switch Admin Status	The operational state of the backup Soft Switch
Graceful Down Timer (sec)	The current setting of the graceful shutdown timer

Viewing IPDC Timer and Retry Counter Information

To view IPDC timer and counter information, use the **lsipdctimer** command. The system displays the following information:

```
===========================================================================
            IPDC Timer Configuration (lsipdctimer)
===========================================================================
Minimum Soft Switch Connection Retry Interval(msec) :    4000
Maximum Soft Switch Connection Retry Interval(msec) :    64000
TCP Connection Retry Interval(msec)                 :    2000
NSUP Message Retry Timer(msec)                       :    2000
Link Activity Testing Timer(msec)                   :    600000
Maximum TCP Connection Attempts                     :    1
Maximum NSUP Retransmission Attempts                :    2
Health Check Response Timer (msec)                  :    1000
Graceful Down Timer (sec)                           :    0
```

Displayed Information	Description
Minimum Soft Switch Connection Retry Interval	The minimum connection retry interval for primary or secondary Soft Switch when the link is up. The connection interval doubles with every retry attempt until the maximum value is reached.
Maximum Soft Switch Connection Retry Interval	The maximum Soft Switch connection retry interval, in milliseconds
TCP Connection Retry Interval	The retry interval for a TCP connection when the link is down, in milliseconds
NSUP Message Retry Timer	The retry interval for NSUP messages, in milliseconds
Link Activity Testing Timer	The time this device waits for a message from the Soft Switch before declaring the link down, in milliseconds. If the health check is enabled, the link stays up until the heartbeat times out.
Maximum TCP Connection Attempts	The maximum number of TCP connection attempts when the link is down.
Maximum NSUP Retransmission Attempts	The maximum NSUP retransmission attempts when the link is down.
Health Check Response Timer	Health check response timer in milliseconds
Graceful Down Timer	Graceful down timer in seconds

Viewing IPDC COT Information

To view IPDC COT information, use the **lsipdccot** command. The system displays the following statistical information:

```
=========================================================================
            IPDC COT Configuration (lsipdccot)
=========================================================================
IPDC COT Receive Tone            :      co1
IPDC COT Transmit Tone           :      co1
```

Displayed Information	Description
IPDC COT Receive Tone	The receive tone source.
IPDC COT Transmit Tone	The transmit tone source.

6

Alarm Surveillance

The MGX 8260 Media Gateway notifies maintenance or operations personnel of equipment alarms using the following features and components:

- CLI commands
- Email alerts
- SNMP trap messages
- Front panel indicators
- Relay contact closures

This chapter explains how to monitor alarms from the command line interface, and set up email and trap notifications.

Surveillance Tasks for Alarms

To monitor alarms, you perform the following tasks:

- Monitoring Shelf Alarms
- Monitoring Card Alarms
- Monitoring DS1 Alarms
- Monitoring E1 Alarms
- Monitoring DS3 Alarms
- Monitoring Fast Ethernet Alarms
- Monitoring OC-3 Alarms
- Monitoring Environmental Alarms

For more information on front panel indicators, see the "Front Panel Controls and Indicators" section on page 1-4.

Monitoring Shelf Alarms

Shelf alarms provide information on environmental, clock, and software operation. When checking alarms, start with commands that list summary information. Then use commands that provide details about the event or condition interest.

Step 1   To view shelf alarms, enter the **lsalms** command.

Step 2   Interpret the listing as follows:

```
=========================================================================
          Shelf Alarms (lsalms)
=========================================================================
Shelf Card Error       :       false
Shelf Software Error   :       false
Shelf Integrated Alarm :       major
Slot 1                 :       Clear
Slot 2                 :       Major
Slot 3                 :       Clear
Slot 4                 :       Clear
Slot 5                 :       Clear
Slot 6                 :       Major
Slot 7                 :       Clear
Slot 8                 :       Clear
Slot 9                 :       Clear
Slot 10                :       Clear
Slot 11                :       Major
Slot 12                :       Clear
Slot 13                :       Clear
Slot 14                :       Clear
Slot 15                :       Clear
Slot 16                :       Clear
Card                   :       Major
Chassis Temperature    :       Clear
Voltage                :       Clear
Fan                    :       Clear
Shelf Alarm History    :       major
```

Displayed Information	Description
Shelf Card Error	Shelf card error indication: • true • false
Shelf Software Error	Shelf software error indication: • true • false
Shelf Integrated Alarm	The shelf integrated alarm indicates the combined alarm condition for all shelf, card, line, and EMM alarms. Valid states: • clear • major • minor • info

Displayed Information	Description
Shelf Slot Alarm (Slot 1-16)	The slot integrated alarm indicates the combined alarm condition for the specified card and its associated lines and EMM alarms. Valid states: • clear • major • minor • info
Card	The card alarm indication: • clear • major • minor • info
Chassis Temperature	The chassis temperature alarm indication: • clear • major • minor • info
Voltage	The chassis voltage alarm indication: • clear • major • minor • info
Fan	The fan speed alarm indication: • clear • major • minor • info
Shelf Alarm History	The chassis alarm history indication: • no alarm • major • minor • info

Step 3   Clear active alarms as described in the "Clearing Alarms" section on page 8-6.

Monitoring Card Alarms

Card alarms provide information on card operation and events.

Viewing Card Alarms

To view card alarms, follow these steps:

Step 1 List information for a card using the **lscd** command, and specifying the slot location of the card.

The system displays the card information.

```
=======================================================================
                    Physical Card Entry (lscd)
=======================================================================
Physical Card Number         :        11
Logical Card Number          :        11
Front Card Type              :        bsc
Back Card Type               :        dmcBsc6T3
Daughter Card 1 Type         :        bim4T3E3
Daughter Card 2 Type         :        *
Card State                   :        active
Card Service                 :        0
Hardware Revision            :        1
Firmware Revision            :        BSC_B_r01.01.b1
Software Revision            :        BSC_r01.01.b1
Front Card Serial #          :        bsc-093
Back Card Serial #           :        t3e3-141
Fab Version                  :
Failure Reason               :        failResonNone
Reset Reason                 :        watchDogReset
Mismatch Reason              :        noMismatch
Integrated line alarm state  :        Clear
Line performance alarm state :        Clear
EMM temperature alarm state  :        Clear
EMM voltage alarm state      :        Clear
SW error alarm state         :        Clear
Component failure alarm state :       Clear
ATM Queue Profile #          :        1
RAM Backup                   :        disabled
Interface Mode               :        bkcd led
Interface Mode          :             bkcd
```

Step 2 Check the alarm fields for alarm indications. The alarm types vary somewhat by card type.

Step 3 Clear any active alarms as described in the "Clearing Alarms" section on page 8-6.

Monitoring DS1 Alarms

This section describes viewing DS1 alarm and line status, and setting and viewing alarm thresholds.

Viewing DS1/E1 Alarms

To view DS1/E1 alarms, follow these steps:

Step 1   List alarm information using the **lsds1ln** command, specifying the slot and line number, delimited by a period, of the line.

The system displays the following DS1 information:

```
======================================================================
               DS1 Line Entry (lsds1ln)
======================================================================
DS1 Line                                             : 16.1
E1/T1 Line Type                                      : t1
Related DS3 Line (BSC only)                          : 501
Line Type                                            : dsx1ESF
Line Coding                                          : dsx1B8ZS
Send Code                                            : dsx1SendNoCode
Line Signal Mode                                     : none
Line Signal Bits                                     : 1
Time Elapsed in Interval                             : 439
Line Valid Intervals                                 : 0
Line Idle Code                                       : 127
Line Loopback Config                                 : dsx1NoLoop
Transmit Clock Source                                : localTiming
Circuit Identifier                                   : PM4388 TOCTL Rev.0x1
IPDC Echo Cancel                                     : na
Alarm                                                : Major
Far end LOF (Yellow Alarm)                           : No
Near end sending LOF Indication                      : Yes
Far end sending AIS                                  : No
Near end sending AIS                                 : No
Near end LOF (Red Alarm)                             : Yes
Near end Loss Of Signal                              : No
Near end is looped                                   : No
E1 TS16 AIS                                          : No
Far End Sending TS16 LOMF                            : No
Near End Sending TS16 LOMF                           : No
Near End detects a test code                         : No
Far End sending Remote Multiframe Alarm Indication   : No
Near End Sending Remote Multiframe Alarm Indication  : No
Far End sending Loss of CRC Multiframe               : No
Other Failure                                        : No
LED Status                                           : Solid RED
Line Status                                          : UP
```

Step 2   Check the alarm fields for alarm indications. The alarm types vary somewhat by card and line type.

Step 3   Clear any active alarms as described in the "Clearing Alarms" section on page 8-6.

Viewing DS1 Alarm Thresholds

To view DS1 alarm thresholds, enter the **lsds1alm** command, specifying the slot and line number, delimited by a period, of the line. The system displays the alarm threshold list:

```
=====================================================================
              DS1 Line Alarm Thresholds (lsds1alm)
=====================================================================
DS1 Line            :       16.1
Red Severity        :       major
RAI Severity        :       minor
Perf Alarm Severity :       minor
LCV  15 Min Threshold:      14
LCV  24 Hr  Threshold:      134
LES  15 Min Threshold:      12
LES  24 Hr  Threshold:      121
LSES 15 Min Threshold:      10
LSES 24 Hr  Threshold:      100
PCV  15 Min Threshold:      35
PCV  24 Hr  Threshold:      50
PES  15 Min Threshold:      35
PES  24 Hr  Threshold:      50
PSES 15 Min Threshold:      35
PSES 24 Hr  Threshold:      50
SEFS 15 Min Threshold:      2
SEFS 24 Hr  Threshold:      17
PSAS 15 Min Threshold:      2
PSAS 24 Hr  Threshold:      17
UAS  15 Min Threshold:      10
UAS  24 Hr  Threshold:      10
BES  15 Min Threshold:      35
BES  24 Hr  Threshold:      50
PCSS 15 Min Threshold:      35
PCSS 24 Hr  Threshold:      50
```

Displayed Information	Description
DS1 Line	The slot and line number of the DS1 line
Red Severity	Severity of near end Loss Of Frame
RAI Severity	Severity of Remote Alarm Indication
Performance Alarm Severity	Severity of any performance alarms
Threshold counters (Table 6-1)	The thresholds for line errors that invoke a performance alarm.

Refer to the following table for a list of threshold counters and default values:

Table 6-1   DS1 Performance Alarm Thresholds

Threshold	Description	Default
LCV 15	15 minute line code violations	14
LCV 24	24 hour line code violations	134
LES 15	15 minute line errored seconds	12
LES 24	24 hour line errored seconds	121
LSES 15	15 minute severely errored seconds	10

Table 6-1   DS1 Performance Alarm Thresholds (continued)

Threshold	Description	Default
LSES 24	24 hour severely errored seconds	100
PCV 15	15 minute path coding violations	35
PCV 24	24 hour path coding violations	50
PES 15	15 minute path errored seconds	35
PES 24	24 minute path errored seconds	50
PSES 15	15 minute path severely errored seconds	35
PSES 24	24 hour path severely errored seconds	50
SEFS 15	15 minute severely errored framing seconds	2
SEFS 24	24 hour severely errored framing seconds	17
PSAS 15	15 minute alarm indication signal seconds	2
PSAS 24	24 hour alarm indication signal seconds	17
UAS 15	15 minute unavailable seconds	10
UAS 24	24 hour unavailable seconds	10
BES 15	15 minute bursty errored seconds	35
BES 24	24 hour bursty errored seconds	50
PCSS 15	15 minute path controlled slip seconds	35
PCSS 24	24 hour path controlled slip seconds	50

Setting DS1 Alarm Thresholds

This command changes the configuration settings for alarm severity, integration period, and thresholds for various error conditions, such as LCV, LES, and LSES. The performance alarm is set if the line errors exceed any of the threshold counts set by this command.

To change alarm threshold values, enter the **chds1alm** command as described in the "chds1alm" section on page 9-47.

Monitoring E1 Alarms

This section describes the procedures for viewing E1 alarm and line status, and setting and viewing alarm thresholds.

Viewing E1 Alarms

To view E1 alarms, follow these steps:

Step 1 List alarm information using the **lse1alrm** command, specifying the slot and line number, delimited by a period, of the line.

The system displays the following line information:

```
=======================================================================
              E1 Line Alarms (lse1alrm)
=======================================================================
E1 Line                          :          3.1
Receiving RAI                    :          No
Transmitting RAI                 :          No
Receiving AIS                    :          No
Transmitting AIS                 :          No
Receiving OOF                    :          No
Receiving OOMF                   :          No
Receiving LOS                    :          No
Near End Local Loopback          :          No
Near End Remote Loopback         :          No
Near End Remote Payload Loopback :          No
BERT in effect                   :          No
Far End Remote Loopback          :          No
Detected Near End Remote Loopback:          No
Receiving RMAI                   :          No
Transmitting RMAI                :          No
Receiving TS16 Alarm Indication  :          No
```

Step 2 Clear any alarms using the procedures in the "Clearing Alarms" section on page 8-6.

Viewing E1 Performance Alarms

To view individual E1 performance alarms, follow these steps:

Step 1 List 15-minute alarm information using the **lse1perf15** command, specifying the slot and line number, delimited by a period, of the line.

The system displays the following line information:

```
=========================================================================
                E1 15 min Performance  Alarms (lse1perf15)
=========================================================================
E1 Line                                :      3.1
LCV     15 minutes threshold exceeded:      No
LES     15 minutes threshold exceeded:      No
PCV     15 minutes threshold exceeded:      No
ES      15 minutes threshold exceeded:      No
SES     15 minutes threshold exceeded:      No
CSS     15 minutes threshold exceeded:      No
BES     15 minutes threshold exceeded:      No
UAS     15 minutes threshold exceeded:      No
ESR     15 minutes threshold exceeded:      No
SESR    15 minutes threshold exceeded:      No
FEESR   15 minutes threshold exceeded:      No
FESESR  15 minutes threshold exceeded:      No
FEBEESR 15 minutes threshold exceeded:      No
FEBESESR 15 minutes threshold exceeded:     No
CRCESR  15 minutes threshold exceeded:      No
CRCSESR 15 minutes threshold exceeded:      No
```

Step 2   Check the alarm fields for alarm indications.

Step 3   Clear any alarms using the procedure in the "Clearing Alarms" section on page 8-6.

Step 4   List the 24-hour alarm information using the lse1perf24 command, specifying the slot and line number, delimited by a period, of the line.

The system displays the following line information:

```
=========================================================================
                E1 24 hour Performance  Alarms (lse1perf24)
=========================================================================
E1 Line                                :      3.1
LCV     24 Hour threshold exceeded:          No
LES     24 Hour threshold exceeded:          No
PCV     24 Hour threshold exceeded:          No
ES      24 Hour threshold exceeded:          No
SES     24 Hour threshold exceeded:          No
CSS     24 Hour threshold exceeded:          No
BES     24 Hour threshold exceeded:          No
UAS     24 Hour threshold exceeded:          No
ESR     24 Hour threshold exceeded:          No
SESR    24 Hour threshold exceeded:          No
FEESR   24 Hour threshold exceeded:          No
FESESR  24 Hour threshold exceeded:          No
FEBEESR 24 Hour threshold exceeded:          No
FEBESESR 24 Hour threshold exceeded:         No
CRCESR  24 Hour threshold exceeded:          No
CRCSESR 24 Hour threshold exceeded:          No
```

Step 5   Check the alarm fields for alarm indications.

Step 6   Clear any alarms using the procedure in the "Clearing Alarms" section on page 8-6.

Viewing E1 Alarm Thresholds

To view E1 performance alarm thresholds, enter the **lse1alm** command, specifying the slot and line number, delimited by a period, of the line. The system displays the alarm thresholds:

```
E1 Line Alarm Thresholds (lse1alm)
========================================================================
E1 Line                    :   3.1
Red Severity               :   major
RAI Severity               :   minor
RMAI Severity              :   minor
T16 Severity               :   minor
Perf Alarm Severity        :   minor
LCV  15 Min Threshold      :   14
LCV  24 Hr Threshold       :   134
LES  15 Min Threshold      :   12
LES  24 Hr Threshold       :   121
UAS  15 Min Threshold      :   10
UAS  24 Hr Threshold       :   10
FE ESR 15 Min Threshold    :   800
FE ESR 24 Hr Threshold     :   800
FE SESR 15 Min Threshold   :   20
FE SESR 24 Hr Threshold    :   20
FEBE ESR 15 Min Threshold  :   800
FEBE ESR 24 Hr Threshold   :   800
FEBE SESR 15 Min Threshold:    20
FEBE SESR 24 Hr Threshold  :   20
CRC ESR 15 Min Threshold   :   800
CRC ESR 24 Hr Threshold    :   800
CRC SESR 15 Min Threshold  :   20
CRC SESR 24 Hr Threshold   :   20
ES ESR 15 Min Threshold    :   800
ES ESR 24 Hr Threshold     :   800
SES ESR 15 Min Threshold   :   20
SES ESR 24 Hr Threshold    :   20
ES 15 Min Threshold        :   35
ES 24 Hr Threshold         :   50
SES 15 Min Threshold       :   35
SES 24 Hr Threshold        :   50
BE 15 Min Threshold        :   35
BE 24 Hr Threshold         :   50
PCV 15 Min Threshold       :   35
PCV 24 Hr Threshold        :   50
CSS 15 Min Threshold       :   35
CSS 24 Hr Threshold        :   50
```

Displayed Information	Description
DS1 Line	The slot and line number of the DS1 line
Red Severity	Severity of near end Loss Of Frame
RAI Severity	Severity of Remote Alarm Indication
RMAI Severity	Severity of RMAI
Performance Alarm Severity	Severity of any performance alarms
Threshold counters (Table 6-2)	The thresholds for line errors that invoke a performance alarm.

Refer to the following table for a list of threshold counters:

Table 6-2   E1 Performance Alarm Thresholds

Threshold	Description	Default[1]
LCV 15	15 minute line code violations	14
LCV 24	24 hour line code violations	134
LES 15	15 minute line errored seconds	12
LES 24	24 hour line errored seconds	121
UAS 15	15 minute unavailable seconds	10
UAS 24	24 hour unavailable seconds	10
FE ESR 15	15 minute errored second ratio caused by frame errors	800
FE ESR 24	24 hour errored second ratio caused by frame errors	800
FE SESR 15	15 minute severely errored second ratio caused by frame errors	20
FE SESR 24	24 hour severely errored second ratio caused by frame errors	20
FEBE ESR 15	15 minute far end block error resulting from ESR	800
FEBE ESR 24	24 hour far end block error resulting from ESR	800
FEBE SESR 15	15 minute far end block error resulting from SESR	20
FEBE SESR 24	24 hour far end block error resulting from SESR	20
CRC ESR 15	15 minute errored second ratio caused by CRC errors	800
CRC ESR 24	24 hour errored second ratio caused by CRC errors	800
CRC SESR 15	15 minute severely errored second ratio caused by CRC errors	20
CRC SESR 24	24 hour severely errored second ratio caused by CRC errors	20
ESR 15	15 minute errored second ratio caused by errored seconds	800
ESR 24	24 hour errored second ratio caused by errored seconds	800
SESR 15	15 minute severely errored second ratio caused by severely errored seconds	20
SESR 24	24 hour severely errored second ratio caused by severely errored seconds	20
ES 15	15 minute errored seconds	35
ES 24	24 hour errored seconds	50
SES 15	15 minute severely errored seconds	35
SES 24	24 hour severely errored seconds	50
BE 15	15 minute burst errors	35
BE 24	24 hour burst errors	50
PCV 15	15 minute path coding violations	35
PCV 24	24 hour path coding violations	50
CSS 15	15 minute controlled slip seconds	35
CSS 24	24 hour controlled slip seconds	50

1. For ESR thresholds, the value shown equals 1000 time the actual ratio.

Setting E1 Alarm Thresholds

These commands changes the thresholds for various error conditions, such as LCV, LES, and LSES. The performance alarm is set if the line errors exceed any of the threshold counts set by this command.

To change performance alarm threshold values, enter the **che1alm15** or **che1alm24** command.

To change alarm severity threshold values, enter the **che1almsev** command.

Monitoring DS3 Alarms

This section describes viewing DS3 alarm and line status, and setting and viewing alarm thresholds.

Viewing DS3 Alarms

To view DS3 alarms, follow these steps:

Step 1 List alarm information using the **lsds3ln** command, specifying the slot and line number, delimited by a period, of the DS3 line.

The system displays the following DS3 information:

```
======================================================================
             DS3 Line Entry (lsds3ln)
======================================================================
DS3 Line               :       11.501
Line Type              :       dsx3M23
Line Coding            :       dsx3B3ZS
Send Code              :       dsx3SendNoCode
Line Status            :       464
Time Elapsed           :       559
Valid Intervals        :       0
Cable Length           :       1
Transmit Clock Source  :       localTiming
Circuit Identifier     :       0
Alarm                  :       Yes
Rcv RAI Failure        :       No
Xmit RAI Failure       :       Yes
Rcv AIS                :       No
Transmit AIS           :       No
Loss of Frame          :       Yes
Loss of Signal         :       Yes
Loopback State         :       No
Rcv Test Code          :       No
Other Failure          :       No
LED Status             :       Solid RED
```

Step 2 Check the alarm fields for alarm indications. The alarm types vary somewhat by card type.

Step 3 Clear any active alarms as described in the "Clearing Alarms" section on page 8-6.

Viewing DS3 Alarm Thresholds

To view DS3 alarm thresholds, enter the **lsds3alm** command, specifying the The slot and line number, delimited by a period, of the DS3 line.

The system displays the alarm threshold list:

```
=======================================================================
              DS3 Line Alarm Thresholds (lsds3alm)
=======================================================================
DS3 Line              :        11.501
Red Severity          :        major
RAI Severity          :        minor
Perf Alarm Severity   :        minor
NE Alarm UpCount      :        6
NE Alarm DownCount    :        1
NE Alarm Threshold    :        14
LCV  15 Min Threshold:         14
LCV  24 Hr Threshold :         134
LES  15 Min Threshold:         12
LES  24 Hr Threshold :         121
PCV 15 Min Threshold :         10
PCV 24 Hr Threshold  :         10
PES 15 Min Threshold :         10
PES 24 Hr Threshold  :         10
PSES 15 Min Threshold:         10
PSES 24 Hr Threshold :         10
SEFS 15 Min Threshold:         2
SEFS 24 Hr Threshold :         17
AIS 15 Min Threshold :         10
AIS 24 Hr Threshold  :         10
UAS  15 Min Threshold:         10
UAS  24 Hr Threshold :         10
CCV  15 Min Threshold:         10
CCV  24 Hr Threshold :         10
CES  15 Min Threshold:         10
CES  24 Hr Threshold :         10
CSES 15 Min Threshold:         10
CSES 24 Hr Threshold :         10
```

Displayed Information	Description
DS3 Line	The slot and line number of the DS3 line.
Red Severity	The near end Loss Of Frame indication severity.
RAI Severity	The Remote Alarm Indication severity.
Performance Alarm Severity	The performance alarm severity.
Performance Alarm Threshold	The performance alarm indication. The performance alarm is set if any of the thresholds is exceeded (see Table 6-3).
NE Alarm UpCount	The up counter value for NE alarms.
NE Alarm Down Count	The down counter value for NE alarms.
NE Alarm Threshold	The threshold for NE alarm indication.

Table 6-3   DS3 Performance Alarm Thresholds

Threshold	Description	Default
LCV 15	15 minute line code violations	14
LCV 24	24 hour line code violations	134
LES 15	15 minute line errored seconds	12
LES 24	24 hour line errored seconds	121
PVC 15	15 minute P-bit coding violations	10
PVC 24	24 hour P-bit coding violations	10
PES 15	15 minute P-bit errored seconds	10
PES 24	24 hour P-bit errored seconds	10
PSES 15	15 minute P-bit severely errored seconds	10
PSES 24	24 hour P-bit severely errored seconds	10
SEFS 15	15 minute severely errored framing seconds	2
SEFS 24	24 hour severely errored framing seconds	17
AISS 15	15 minute alarm indication signal seconds	10
AISS 24	24 hour alarm indication signal seconds	10
UAS 15	15 minute unavailable seconds	10
UAS 24	24 hour unavailable seconds	10
CCV 15	15 minute C-bit coding violations	10
CCV 24	24 hour C-bit coding violations	10
CES 15	15 minute C-bit errored seconds	10
CES 24	24 hour C-bit errored seconds	10
CSES 15	15 minute C-bit severely errored seconds	10
CSES 24	24 hour C-bit severely errored seconds	10

Setting DS3 Alarm Thresholds

The **chds3alm** command changes the configuration settings for alarm severity, integration period, and thresholds for various error conditions, such as LCV, LES, and LSES. The performance alarm is set if the DS3 errors exceed any of the threshold counts set by this command. To change alarm threshold values, enter the **chds3alm** command as described in the "chds3alm" section on page 9-56.

Monitoring Fast Ethernet Alarms

Fast Ethernet lines raise an alarm when an active line goes down, and invoke informational events for line configuration changes.

To view the information for configured Fast Ethernet lines, enter the **lsethlns** command. The system lists summary information for all Fast Ethernet lines:

```
=====================================================================
                     Ether Lines   (lsethlns)
=====================================================================
 Line     IP Address     Subnet Mask      Status       Gateway Addr
 ======  ===============  ===============  ================  ===============
   9.1    12.18.6.12      255.255.255.0    active            12.18.6.1
   9.2    12.18.7.11      255.255.255.0    inactive          12.18.7.1
```

Displayed Information	Description
Line	The slot and line number for the Fast Ethernet line
IP Address	The IP address for the Fast Ethernet line
Subnet Mask	The IP address mask for the Fast Ethernet line
Status	The operational status for the line, as follows: • active • inactive • failed • link down in active state • link down in inactive state
Gateway Addr	The primary IP gateway for this line

Monitoring OC-3 Alarms

This section describes viewing OC-3 alarm and line status, and setting and viewing alarm thresholds.

Viewing OC-3 Alarms

To view OC-3 alarm severity, follow these steps:

Step 1   List alarm information using the **lssonetalms** command.

The system displays the following alarm information:

```
=========================================================================
          List alarm Severity for all SONET lines (lssonetalms)
=========================================================================
Slot.Line    Red Severity       Yellow Severity    Perf Alarm Severity
=========    ================   ================   =================
    9.1        major               minor              minor
    9.2        major               minor              minor
```

Step 2   Clear any active alarms as described in the "Clearing Alarms" section on page 8-6.

To view OC-3 alarms, follow these steps:

Step 1   List alarm information using the **lssonetln** command.

The system lists information for the OC-3 line:

```
=========================================================================
              Sonet Line Entry (lssonetln)
=========================================================================
Sonet Line                        :    9.1
Medium Type                       :    sonet
Time Elapsed in Interval          :    69174
Line Valid Intervals              :    76
Line Coding                       :    sonetMediumNRZ
Line Type                         :    sonetMultiMode
Circuit Identifier                :    PMC-PM5351-S/UNI-TETRA ver.0x02
Admin Status                      :    up
Line Status(1)                    :    5402a
Line Status(2)                    :    10
Interface Type                    :    oc3
Frame Type                        :    sts3c
Loopback State                    :    sonetNoLoop
HCS masking                       :    disable
Payload Scrambling                :    enable
Frame Scrambling                  :    enable
Transmit Clock Source             :    localTiming
Support Path ERDI                 :    disable
```

Step 2   Interpret the Line Status as a bitmap with the following indicators:

Bit 0: No defect present

Bit 1: Section LOS (Loss of Signal)

Bit 2: Section LOF (Loss of frame)

Bit 3: Line AIS (Alarm Indication Signal)

Bit 4: Line RDI (Remote Defect Indication)

Bit 5: Path AIS

Bit 6: Path LOP (Loss of Pointer)

Bit 7: Path UEQ (idle)

Bit 8: Path TIM (Trace Identifier Mismatch)

Bit 9: Path SLM

Bit 10: Path RDI

Bit 11: Path ERDI server defect

Bit 12: Path ERDI connectivity defect

Bit 13: Path ERDI payload defect

Bit 14: Performance failure LOS

Bit 15: Performance failure, section LOF

Bit 16: Performance failure, line AIS

Bit 17: Performance failure, line RFI

Bit 18: Performance failure, path AIS

Bit 19: Performance failure, path LOP

Bit 20: Performance failure, path UEQ

Bit 21: Performance failure, path TIM

Bit 22: Performance failure, path SLM

Bit 23: Path ERDI server failure

Bit 24: Path ERDI connectivity failure

Bit 25: Path ERDI payload failure

Bit 26: Performance failure, path RFI

Bit 27: Line loopback (remote loop)

Bit 28: Serial loopback (local loop)

Bit 29: Parallel loopback (local loop)

Step 3   Check the alarm fields for alarm indications. The alarm types vary somewhat by card type.

Viewing OC-3 Alarm Thresholds

To view OC-3 alarm thresholds, enter the **lssonetalm** command, specifying the slot and line number, delimited by a period, of the OC-3 line.

The system displays the alarm thresholds:

```
========================================================================
            Sonet Line Alarm Thresholds (lssonetalm)
========================================================================
Sonet Line                     :           9.1
Red Severity                   :           major
Yellow(RAI) Severity           :           minor
Perf Alarm Severity            :           minor
Section CV  15 Min Threshold   :           15
Section CV  24 Hr Threshold    :           134
Section ES  15 Min Threshold   :           12
Section ES  24 Hr Threshold    :           120
Section SES 15 Min Threshold   :           10
Section SES 24 Hr Threshold    :           100
Section SEFS 15 Min Threshold  :           5
Section SEFS 24 Hr Threshold   :           20
Line CV  15 Min Threshold      :           15
Line CV  24 Hr Threshold       :           134
Line ES  15 Min Threshold      :           12
Line ES  24 Hr Threshold       :           120
Line SES 15 Min Threshold      :           10
Line SES 24 Hr Threshold       :           100
Line UAS 15 Min Threshold      :           12
Line UAS 24 Hr Threshold       :           20
Path CV  15 Min Threshold      :           15
Path CV  24 Hr Threshold       :           134
Path ES  15 Min Threshold      :           12
Path ES  24 Hr Threshold       :           120
Path SES 15 Min Threshold      :           10
Path SES 24 Hr Threshold       :           100
Path UAS 15 Min Threshold      :           12
Path UAS 24 Hr Threshold       :           20
```

Displayed Information	Description
Sonet Line	The slot and line number of the line.
Red Severity	The red alarm severity.
Yellow (RAI) Severity	The yellow alarm severity.

Table 6-4   OC-3 Performance Alarm Thresholds

Threshold	Description	Default
Section CV 15 Min Threshold	Section code violation threshold for 15 minutes.	15
Section CV 24 Hr Threshold	Section code violation threshold for 24 hours.	134
Section ES 15 Min Threshold	Section errored seconds threshold for 15 minutes.	12
Section ES 24 Hr Threshold	Section errored seconds threshold for 24 hours.	120
Section SES 15 Min Threshold	Section severely errored seconds threshold for 15 minutes.	10
Section SES 24 Hr Threshold	Section severely errored seconds threshold for 24 hours.	100
Section SEFS 15 Min Threshold	Section severely errored frame seconds threshold for 15 minutes.	5

Table 6-4   OC-3 Performance Alarm Thresholds (continued)

Threshold	Description	Default
Section SEFS 24 Hr Threshold	Section severely errored frame seconds threshold for 24 hours.	20
Line CV 15 Min Threshold	Line code violation threshold for 15 minutes.	15
Line CV 24 Hr Threshold	Line code violation threshold for 24 hours.	134
Line ES 15 Min Threshold	Line errored seconds threshold for 15 minutes.	12
Line ES 24 Hr Threshold	Line errored seconds threshold for 24 hours.	120
Line SES 15 Min Threshold	Line severely errored seconds threshold for 15 minutes.	10
Line SES 24 Hr Threshold	Line severely errored seconds threshold for 24 hours.	100
Line UAS 15 Min Threshold	Line unavailable seconds threshold for 15 minutes.	12
Line UAS 24 Hr Threshold	Line unavailable seconds threshold for 24 hours.	20
Path CV 15 Min Threshold	Path code violation threshold for 15 minutes.	15
Path CV 24 Hr Threshold	Path code violation threshold for 24 hours.	134
Path ES 15 Min Threshold	Path errored seconds threshold for 15 minutes.	12
Path ES 24 Hr Threshold	Path errored seconds threshold for 24 hours.	120
Path SES 15 Min Threshold	Path severely errored seconds threshold for 15 minutes.	10
Path SES 24 Hr Threshold	Path severely errored seconds threshold for 24 hours.	100
Path UAS 15 Min Threshold	Path unavailable seconds threshold for 15 minutes.	12
Path UAS 24 Hr Threshold	Path unavailable seconds threshold for 24 hours.	20

Setting OC-3 Alarm Thresholds

The **chsonetalm** command changes the configuration settings for alarm severity, integration period, and thresholds for various error counters. The performance alarm is set if the errors exceed any of the threshold counts set by this command. To change alarm threshold values, enter the **chsonetalm** command as described in the "chsonetalm" section on page 9-116.

Monitoring Environmental Alarms

The MGX 8260 Media Gateway monitors three key environmental conditions:

- Temperature of the SCC, BSC, NSC, and DMC
- Voltage on the backplane and at each card
- Chassis fan rotation speed

Sensor readings translate to alarm conditions according to four fixed threshold levels (see Figure 6-1).

Figure 6-1   EMM Alarm Scale

Major alarm | Minor alarm | Normal | Normal | Minor alarm | Major alarm

Major low   Minor low   Normal   Minor hi   Major hi

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Specifying Sensors

In most cases, the MGX 8260 Media Gateway monitors environmental conditions with multiple sensors located at different physical locations. When listing environmental conditions, specify the sensor ID that corresponds to the sensor you want to view. The following tables list sensors by type and id.

Table 6-5   SCC Sensors

SId	emmSensorType = temp(1)	emmSensorType = voltage(2)
1	Main board bottom	5 V
2	Main board top	3.3 V
3	Main board front	2.5 V
4	CSM board	
5	BIM board bottom	
6	BIM board top	
7	Main board middle	

Table 6-6   DMC Sensors

SId	emmSensorType = temp(1)	emmSensorType = voltage(2)
1	Main board top	5 V
2	Main board bottom	3.3 V

Table 6-7   NSC Sensors

SId	emmSensorType = temp(1)	emmSensorType = voltage(2)
1	Main board top	5 V
2	Main board bottom	3.3 V
3	Main board middle	2.5 V
4	MSM1 board bottom	1.8 V
5	MSM1 board top	
6	MSM2 board bottom	
7	MSM2 board top	
8	Main board front	

Table 6-8   BSC Sensors

SId	emmSensorType = temp(1)	emmSensorType = voltage(2)
1	Main board bottom	5 V
2	Main board top	3.3 V
3	Main board front	2.5 V
4	BIM board top	
5	BIM board bottom	
6	BIM board middle	
7	Main board middle	

Table 6-9   Chassis Sensors

SId	emmSensorType = voltage(1)	emmSensorType = fan(2)
1	1.5 Volts Bus A	Fan number 1
2	1.5 Volts Bus B	Fan number 2
3	-48 Volts Bus A	Fan number 3
4	-48 Volts Bus B	Fan number 4
5		Fan number 5
6		Fan number 6

Viewing Environmental Information

Use this section to view sensor details, such as the sensor reading and thresholds, for a single unit. To monitor a single sensor, enter the **lsemm** command, specifying the unit type, sensor type, and sensor id, as described in the "lsemm" section on page 9-249. The system displays the sensor information. The following sections show sample listings for different sensors.

Voltage Sensor Listing

To view the voltage sensor 1 information for slot 11, enter the following command:

```
lsemm slot11 2 1
```

The system displays the following information:

```
=====================================================================
              Environment Monitoring Module Reading (lsemm)
=====================================================================
EMM UnitId                        :       slot11
EMM SensorType                    :       voltage-mvolt
EMM SensorID                      :       1
EMM Alarm Status                  :       clear
EMM Sensor Reading                :       4970           voltage-mvolt
Maj Alarm Hi Threshold            :       5500
Maj Alarm Lo Threshold            :       4500
Min Alarm Hi Threshold            :       5300
Min Alarm Lo Threshold            :       4700
```

Displayed Information	Description
EMM UnitId	The slot or chassis with the sensor
EMM SensorType	The type of environmental sensor
EMM SensorID	The number of a sensor on a unit
EMM Alarm Status	The status of the environmental alarm: • clear • minor • major
EMM Sensor Reading	The sensor reading: • Temperature in degrees celsius • Chassis voltage in volts • Fan speed in rpm
Maj Alarm Hi Threshold	The threshold value separating a major alarm from a minor alarm for high readings
Maj Alarm Lo Threshold	The threshold value separating a minor alarm for a high reading from normal operation
Min Alarm Hi Threshold	The threshold value separating a major alarm from a minor alarm for a low reading
Min Alarm Lo Threshold	The threshold value separating a minor alarm for a low reading from normal operation

Temperature Sensor Listing

To view the temperature sensor 1 information for slot 11, enter the following command:

```
lsemm slot11 1 1
```

The system displays the following information:

```
========================================================================
               Environment Monitoring Module Reading (lsemm)
========================================================================
EMM UnitId                       :        slot11
EMM SensorType                   :        temp-celsius
EMM SensorID                     :        1
EMM Alarm Status                 :        clear
EMM Sensor Reading               :        30          temp-celsius
Maj Alarm Hi Threshold           :        75
Maj Alarm Lo Threshold           :        -5
Min Alarm Hi Threshold           :        70
Min Alarm Lo Threshold           :        0
```

See the Voltage Sensor Listing, page 6-21 for a description of the table.

Fan Sensor Listing

To view the fan sensor 1 information, enter the following command:

```
lsemm chassis 1 1
```

The system displays the following information:

```
========================================================================
               Environment Monitoring Module Reading (lsemm)
========================================================================
EMM UnitId                       :        chassis
EMM SensorType                   :        fan-rpm
EMM SensorID                     :        1
EMM Alarm Status                 :        clear
EMM Sensor Reading               :        3308        fan-rpm
Maj Alarm Hi Threshold           :        9999999
Maj Alarm Lo Threshold           :        2900
Min Alarm Hi Threshold           :        9999999
Min Alarm Lo Threshold           :        3100
```

See the Voltage Sensor Listing, page 6-21 for a description of the table.

Viewing Environmental Summary Information

To view a summary of environmental information, enter the **lsemms** command.

The system displays the environmental status and readings:

```
=========================================================================
            Environment Monitoring Module Readings (lsemms)
=========================================================================
   UnitId     SensorType        SensorId      AlmStatus     SensorReading
   ======   ==================   ========     =========     =============
   slot6      temp-celsius          1           clear             28
   slot6      temp-celsius          2           clear             37
   slot6      temp-celsius          3           clear             30
   slot6      temp-celsius          4           clear             31
   slot6      temp-celsius          5           clear             35
   slot6      temp-celsius          6           clear              0
   slot6      temp-celsius          7           clear              0
   slot6      temp-celsius          8           clear             33
   slot6      voltage-mvolt         1           clear           4944
   slot6      voltage-mvolt         2           clear           3271
   slot6      voltage-mvolt         3           clear           2494
   slot10     temp-celsius          1           clear             32
   slot10     temp-celsius          2           clear             38
   slot10     temp-celsius          3           clear             23
   slot10     temp-celsius          4           clear             24
   slot10     temp-celsius          5           clear             31
   slot10     temp-celsius          6           clear             40
   slot10     temp-celsius          7           clear             31
   slot10     voltage-mvolt         1           clear           4970
   slot10     voltage-mvolt         2           clear           3288
   slot10     voltage-mvolt         3           clear           2468
   slot11     temp-celsius          1           clear             30
   slot11     temp-celsius          2           clear             36
   slot11     temp-celsius          3           clear             31
   slot11     temp-celsius          4           clear             27
   slot11     temp-celsius          5           clear             36
   slot11     temp-celsius          6           clear             32
   slot11     temp-celsius          7           clear             39
   slot11     voltage-mvolt         1           clear           4970
   slot11     voltage-mvolt         2           clear           3271
   slot11     voltage-mvolt         3           clear           2455
   chassis    voltage-mvolt         2           clear           1510
   chassis    voltage-mvolt         4           clear          47320
   chassis       fan-rpm            1           clear           3292
   chassis       fan-rpm            2           clear           3308
   chassis       fan-rpm            3           clear           3409
   chassis       fan-rpm            4           clear           3461
   chassis       fan-rpm            5           clear           3341
   chassis       fan-rpm            6           clear           3443
```

For a description of the output, see Viewing Environmental Information, page 6-21.

Configuration Tasks for Alarm Notifications

To configure alarm notifications, you perform the following tasks:

- Configuring User Email Alerts
- Configuring SNMP Trap Managers

Configuring User Email Alerts

The email facility works in conjunction with SNMP traps to notify registered users of alarms or significant events in the MGX 8260 Media Gateway. A system administrator can register up to ten users for email notifications and up to twenty trap events for each user. Upon occurrence of an event, the system sends an email to all registered users that contains alarm or event details and related system information.

To use email alerts, follow these steps:

Step 1 Register the domain name and IP address of your existing email server.

Step 2 Register the trap events you want users to receive. For more information, see"Working With Traps" section on page 6-30.

Registering the Email Server

To configure the email server and source email address, follow these steps:

Step 1 Enter the email server command, **chem**, as described in the "chem" section on page 9-68.

For example, Cisco Systems could set the email server as follows:

```
chem cisco.com 10.1.1.1 admin@cisco.com
```

Step 2 Confirm your settings using the **lsem** command.

The system lists the email server information.

Registering Email Alerts

To register email traps, follow these steps:

Step 1 Identify an unused index number using the **lseregs** command.

Step 2 Add a user and trap registrations using the **addereg** command as specified in the "addereg" section on page 9-17.

For more information, refer to the section in this chapter pertaining to the alarm you want to add.

The following example registers user 1 for major shelf and EMM alarms:

```
addereg 1 user@domain.com 1000 1800
```

Step 3 Check the entry, using the **lsereg** command.

The system displays registration details.

Changing Email Alerts

This section explains how to change existing email registrations. To change optional parameters, follow the command line convention described in Chapter 1. For example, to leave a value unchanged type the # symbol as a placeholder.

To change an email trap registration, follow these steps:

Step 1   Identify the index number of the registration you want to change using the **lseregs** command.

Step 2   Get a complete list of the traps for the index you want to change using the **lsereg** command, specifying the index.

Step 3   Apply the desired changes using the **chereg** command. For trap values you don't want to change, enter the # symbol as a placeholder.

The following example adds major card alarms to trap 3 of the email alerts for user 1.

```
chereg 1 user@domain.com # # 1105
```

Step 4   Verify the entry using the **lsereg** command.

The system displays registration details.

Deleting Email Alerts

To delete an email trap registration, follow these steps.

Step 1   Identify the index number of the user to delete using the **lseregs** command.

Step 2   Delete the desired entry using the **delereg** command, specifying an index.

The system deletes the registration at the specified index.

The following example deletes all email alerts for user 1:

```
delereg 1
```

Listing Email Server and Email Alert Registrations

To list the email server information, enter the **lsem** command.

The following list is displayed:

```
=======================================================================
            Email Alert Server & Source Configuration (lsem)
=======================================================================
Server Domain Name:            cisco.com
Server IP Address:             10.1.1.1
Source Email Address:          support@cisco.com
```

Displayed Information	Description
Server Domain Name	The domain name of the email server
Server IP Address	The IP address of the email server. The IP address 0.0.0.0 disables the email feature
Source Email Address	The 'from' email address for messages from the MGX 8260 Media Gateway

To list the details of one email alert registration, enter the **lsereg** command, specifying a number 1-10 to identify the user.

The following list is displayed:

```
=======================================================================
            Email Alert Registration Entry (lsereg)
=======================================================================
EmailRegIndex :1
EmailAddress  :user@domain.com
TrapNum1 :      1000         TrapNum2 :      1800         TrapNum3 :      0
TrapNum4 :      0            TrapNum5 :      0            TrapNum6 :      0
TrapNum7 :      0            TrapNum8 :      0            TrapNum9 :      0
TrapNum10:      0            TrapNum11:      0            TrapNum12:      0
TrapNum13:      0            TrapNum14:      0            TrapNum15:      0
TrapNum16:      0            TrapNum17:      0            TrapNum18:      0
TrapNum19:      0            TrapNum20:      0
```

Displayed Information	Description
EmailRegIndex	The unique index number to the user account
Email Address	The email address where the alarm notifications are sent
TrapNum1 to TrapNum20	The number of the registered trap condition. To map the trap number to an alarm or event, see the "Working With Traps" section on page 6-30.

To list a summary of the email alert registration entries, enter the **lseregs** command. The following list is displayed:

```
=======================================================================
            Email Alert Registration Entries (lseregs)
=======================================================================
Index   Trap1   Trap2   Trap3   Trap4          EmailAddress
=====   =======  =======  =======  =======  =============================
  1      1000    1800       0       0     user@domain.com
  2      1001    3001       0       0     user2@domain.com
```

Configuring SNMP Trap Managers

You can register SNMP managers to receive SNMP trap messages on alarms or significant events in the MGX 8260 Media Gateway.

Registering SNMP Trap Managers

To register an SNMP trap manager, enter the **addtmgr** command as described in the "addtmgr" section on page 9-33. The bitmap parameter is a bitwise specification of trap categories to subscribe. Each bit represents a category of traps. For more information on trap numbers, see Understanding Trap Numbers, page 6-31.

Table 6-10   Trap Subscription Bits

Bit	Trap	Description
0	Severity	Major (trap severity selection)
1	Severity	Minor (trap severity selection)
2	Severity	Information (trap severity selection)
3	1000-1099	Shelf
4	1100-1199	Card
5	1200-1299	SNMP
6	1300-1399	Dsx1 Line
7	1400-1499	Dsx3 Line
8	1500-1599	Sonet Line
9	1600-1699	Ether Line
10	1700-1799	Voice Port
11	N/A	Ether Channel
12	N/A	Voice Channel
13	1800-1899	EMM
14	1900-1999	Clock
15	2000-2099	DSP
16	2100-2199	DMCMAP
17	2200-2299	ISDN
18	2300-2399	MGCP
19	2400-2499	Backhaul Session

The system sends the specified trap messages to registered managers as trap events occur. For more information on traps, see "Working With Traps" on page 30.

The following example subscribes the manager at address 10.1.1.10 and udp port 162 to receive trap messages for minor and informational events for cards and DS1 lines.

```
addtmgr 10.1.1.10 162 2 public 86
```

You build a trap subscription argument for the **addtmgr** command. For example, to register for minor alarms, informational messages, card alarms, and DS1 line alarms, build the following trap subscription bitmap:

Trap:	dsx1Line	SNMP	Card	Shelf	Information	Minor	Major
Bit Value	1	0	1	0	1	1	0
Bit Position	6	5	4	3	2	1	0

To use this bitmap, convert it to a decimal value and specify it as the last argument. Binary 1010110 is 86 decimal. The second argument (2) sets the in-band interface as the default interface for sending traps when the routing table has no trap manager.

Changing SNMP Trap Registrations

To change a SNMP trap registration, enter the **chtmgr** command as described in "chtmgr" section on page 9-133. The following example changes the manager at address 10.1.1.10 and udp port 162 to receive events for the traps specified by bitmap 1100110.

```
chtmgr 10.1.1.10 162 2 public 102
```

Deleting SNMP Trap Registrations

To delete a SNMP trap registration, enter the **deltmgr** command, specifying the address of the SNMP manager who wants to discontinue notification of trap events. The system discontinues trap messages to the specified IP address.

The following example deletes the trap manager at 10.1.1.10.

```
deltmgr 10.1.1.10
```

Viewing SNMP Trap Registrations

To view one SNMP trap registration, enter the **lstmgr** command. The system displays the trap registration information.

```
========================================================================
                  Trap Manager Registration Entry (lstmgr)
========================================================================
Trap Manager IP Address (Index)      :   10.15.38.22
UDP Port to Trap Manager             :   162
Network Interface for Trap Delivery  :   scc-eth-if
Trap Community String                :   public
Traps Subscription Bitmap            :   56
Manager-specific Trap Sequence Number :  0
```

Displayed Information	Description
Trap Manager IP Address	The IP address of the registered manager.
UDP Port to Trap Manager	The UDP port of the registered manager.
Network Interface for Trap Delivery	The MGX 8260 interface for delivering trap messages. Fixed at scc-eth-if.
Trap Community String	The name of the community string.
Trap Subscription Bitmap	A bitmap of traps to send to the manager (See Table 6-10).
Manager-specific Trap Sequence Number	The manager-specific trap sequence number.

To view all SNMP trap registrations, enter the **lstmgrs** command. The system displays the current trap managers.

```
========================================================================
           Trap Manager Registration Entries (lstmgrs)
========================================================================
 Mgr IP Address      UDP Port      Interface      Community String
===============     ==========    ==========     ====================
   10.15.38.22          162        scc-eth-if      public
```

Working With Traps

The MGX 8260 Media Gateway generates trap messages when significant changes occur in the chassis. These changes range from major alarms to informational events. While most alarms report chassis events, a few report summary information about current line state. The MGX 8260 Media Gateway sends these trap messages to SNMP managers and users registered to receive email notification. You can also view trap information from the command line interface.

Viewing Chronological Traps

To view traps, use the **lstraps** command.

The system displays the information such as the following:

```
08/15/2000    18:28:21    02    02    MAJOR    TRAP    Line 7 is in line major alarm 0x00000040
08/15/2000    18:28:19    02    02    INFO*    TRAP    Line 7 is modified
08/15/2000    18:28:19    02    02    INFO*    TRAP    Line 7 is added
```

Column	Description
Date	The event date
Time	The event time
Physical Slot	The physical slot number
Logical Slot	The logical slot number
Severity	The event severity
Type	The type of event
Description	A text description of the trap

Understanding Trap Numbers

Traps are identified by a unique number, starting with 1000. This section lists traps by function.

Shelf Traps

Shelf alarms create trap conditions that you can use for email alerts. The following table summarizes the alarm conditions and corresponding trap numbers for shelf and environmental alarms:

Table 6-11   Shelf Traps

Event	Severity	Trap Number
Shelf major alarm	Major	1000
Shelf minor alarm	Minor	1001
Shelf alarm clear	Info	1002
Shelf security alert	Minor	1003
Shelf cold start	Major	1004
Shelf alarm history change	Info	1005
Shelf DS1 type change	Major	1006
Shelf configuration cleared	Info	1007
EMM major alarm	Major	1800
EMM minor alarm	Minor	1801
EMM alarm clear	Info	1802
Clock major alarm	Major	1900
Clock minor alarm	Minor	1901
Clock alarm cleared	Info	1902
Clock switched	Info	1903

Card Traps

The following table summarizes the alarm conditions and corresponding trap numbers for card alarms:

Table 6-12   Card Traps

Event	Severity	Trap Number
Card inserted	Info	1100
Card removed	Info	1101
Card failed	Major	1102
Core card switchover	Major	1103
Service card switchover	Minor	1104
Card major alarm	Major	1105
Card minor alarm	Minor	1106
Card alarm cleared	Info	1107
Card active	Info	1108
Core redundancy failed	Major	1109
Service module redundancy failed	Major	1110
Multiservice Media module major alarm	Major	1111
Physical card mismatched	Minor	1112
Physical card configuration cleared	Info	1113
Card in standby	Info	1114
Physical back card inserted	Info	1115
Physical back card removed	Info	1116
DMC map added	Info	2000
DMC map deleted	Info	2001
DMC map modified	Info	2002
DSP minor alarm (1 DSP down)	Major	2101
DSP major alarm (all DSPs down)	Major	2102

DS1 Traps

The following table summarizes the alarm conditions and corresponding trap numbers for DS1 alarms:

Table 6-13   DS1 Traps

Event	Severity	Trap Number
DS1 line added	Info	1300
DS1 line deleted	Info	1301
DS1 line modified	Info	1302
DS1 line major alarm	Major	1303
DS1 line minor alarm	Minor	1304

Table 6-13   DS1 Traps (continued)

Event	Severity	Trap Number
DS1 line alarm cleared	Info	1305
DS1 line performance major alarm	Major	1306
DS1 line performance minor alarm	Minor	1307
DS1 line performance alarm clear	Info	1308
DS1 line update threshold	Info	1309
DS1 line payload loopback up	Info	1310
DS1 line - line loopback up	Info	1311
DS1 line other loopback up	Info	1312
DS1 line loopback down	Info	1313
DS1 line BERT on	Info	1314
DS1 line BERT off	Info	1315
E1 line performance major alarm	Major	1316
E1 line performance minor alarm	Minor	1317
E1 line performance alarm cleared	Info	1318
E1 line threshold updated	Major	1319
DS1 trap update sent[1]	Info	1320

1. Trap sends information for all lines, not a single event.

DS3 Traps

The following table summarizes the alarm conditions and corresponding trap numbers for DS3 alarms:

Table 6-14   DS3 Traps

Event	Severity	Trap Number
DS3 line added	Info	1400
DS3 line deleted	Info	1401
DS3 line modified	Info	1402
DS3 line major alarm	Major	1403
DS3 line minor alarm	Minor	1404
DS3 line alarm cleared	Info	1405
DS3 line performance major alarm	Major	1406
DS3 line performance minor alarm	Minor	1407
DS3 line performance alarm clear	Info	1408
DS3 line threshold update	Info	1409
DS3 line payload loopback up	Info	1410
DS3 line - line loopback up	Info	1411

Table 6-14   DS3 Traps (continued)

Event	Severity	Trap Number
DS3 line other loopback up	Info	1412
DS3 line loopback down	Info	1413

SONET Traps

Table 6-15   SONET Traps

Event	Severity	Trap Number
SONET line added	Info	1500
SONET line deleted	Info	1501
SONET line modified	Info	1502
SONET line major alarm	Major	1503
SONET line minor alarm	Minor	1504
SONET line alarm cleared	Info	1505
SONET line performance major alarm	Major	1506
SONET line performance minor alarm	Minor	1507
SONET line performance alarm clear	Info	1508
SONET line threshold update	Info	1509
SONET line - line loopback up	Info	1510
SONET line serial loopback up	Info	1511
SONET line parallel loopback up	Info	1512
SONET line loopback down	Info	1513

Fast Ethernet Traps

The following table summarizes the alarm conditions and corresponding trap numbers for Fast Ethernet alarms and events:

Table 6-16   Fast Ethernet Traps

Event	Severity	Trap Number
Ether line active or added	Info	1600
Ether line delete	Info	1601
Ether line config change	Info	1602
Ether line alarm while in active state	Major	1603
Ether line alarm while inactive	Info	1604
Ether line alarm clear	Info	1605
Ether line non-recoverable failure	Major	1606

Voice Port Events

Voice ports generate informational events for configuration changes. The only way to access these events is by using SNMP traps or email alerts. The following table summarizes the events and corresponding trap numbers for the voice ports:

Table 6-17   Voice Port Events

Event	Severity	Trap
Voice port added	Info	1700
Voice port deleted	Info	1701
Voice port modified	Info	1702

ISDN Traps

The following table summarizes the ISDN conditions and corresponding trap numbers for ISDN alarms and events:

Table 6-18   ISDN Traps

Event	Severity	Trap
D-Channel added to DS1 or E1	Info	2200
D-Channel deleted	Info	2201
DLSAP profile added	Info	2202
DLSAP profile deleted	Info	2203
MACSAP profile added	Info	2204
MACSAP profile deleted	Info	2205
D-Channel connected	Info	2206
D-Channel disconnected	Info	2207
D-Channel information about a card	Info	2208

MGCP Traps

The following table summarizes the MGCP conditions and corresponding trap numbers for MGCP alarms and events:

Table 6-19   MGCP Traps

Event	Severity	Trap
MGCP core parameter changed	Info	2300
MGCP IP address, port, or domain changed	Info	2301

Backhaul Traps

The following table summarizes the Backhaul conditions and corresponding trap numbers for Backhaul alarms and events:

Table 6-20   Backhaul Traps

Event	Severity	Trap
Backhaul set added	Info	2400
Backhaul set deleted	Info	2401
Backhaul group added	Info	2402
Backhaul group deleted	Info	2403
Backhaul session added	Info	2404
Backhaul session deleted	Info	2405

Performance Monitoring

Monitoring the performance of a communication system is part of a proactive strategy that catches problems before they affect service. The MGX 8260 Media Gateway provides performance information for DS1/E1 and DS3 lines.

Monitoring DS1 Performance

You can view current or historical statistics that the system collects on DS1 performance. Current statistics are performance statistics collected over the last fifteen minutes.

Viewing Current T1 Statistics

To view current statistics for a single T1 line, enter the **lsds1curst** command, specifying the slot and line number, delimited by a period, of the line. The system displays current statistics:

```
========================================================================
                DS1 Line Current Statistics (lsds1curst)
========================================================================
DS1 Slot.Line                         :      13.1
Path Errored Seconds                  :      0
Path Severely Errored Seconds         :      0
Path Severely Errored Framing Seconds :      0
Path UnAvailable Seconds              :      606
Path Control Slip Seconds             :      0
Path Code Violations                  :      0
Path SEF or AIS                       :      0
Path Bursty Errored Seconds           :      0
Line Errored Seconds                  :      0
Line Severely Errored Seconds         :      0
Line Code Violations                  :      0
```

To view current statistics for all T1 lines, enter the **lsds1cursts** command.

The system displays the current statistics summary:

```
========================================================================
           DS1 Current Statistics for all Lines (lsds1cursts)
========================================================================
Slot.Line    Error Secs    SeverSecs    FrameSecs    UnAvailSecs
========     ===========   =========    =========    ===========
   13.1              0            0            0           473
   13.2              0            0            0           473
   13.3              0            0            0           473
   13.4              0            0            0           472
   13.5              0            0            0           472
```

Viewing Total T1 Statistics

Total statistics are performance statistics collected since the previous midnight. So just before midnight there are almost 24 hours of statistics available, at midnight the statistic counters are reset, and after midnight the system starts accumulating new data. To view total statistics for a T1 line, enter the **lsds1totst** command, specifying the slot and line number, delimited by a period, of the line. The system displays current statistics:

```
========================================================================
              DS1 Line Total Statistics (lsds1totst)
========================================================================
DS1 Slot.Line                        :      13.1
Path Errored Seconds                 :      2
Path Severely Errored Seconds        :      0
Path Severely Errored Framing Seconds :     0
Path UnAvailable Seconds             :      11162
Path Control Slip Seconds            :      2
Path Code Violations                 :      0
Path SEF or AIS                      :      0
Path Bursty Errored Seconds          :      0
Line Errored Seconds                 :      11
Line Severely Errored Seconds        :      11
Line Code Violations                 :      0
```

To view 24-hour statistics for all lines, enter the **lsds1totsts** command.

The system displays the 24-hour statistics summary:

```
========================================================================
              DS1 Total Stats (lsds1totsts)
========================================================================
Slot.Line ErrSecs   SeverErrSecs   FrameErrSecs UnAvailSecs LineErSecs
========= =======   ============   ============ =========== ==========
   13.1      2             0              0         11029        11
   13.2      2             0              0         11029        11
   13.3      2             0              0         11029        11
   13.4      1             0              0         11028        11
   13.5      2             0              0         11028        11
```

Viewing Interval T1 Statistics

Interval statistics are collected by each DS1 Interface for the previous 24 hours of operation. The 24 hours are broken into 96 15-minute intervals, where interval 1 is the most recent and 96 is the oldest. As time progresses, the system drops the oldest interval and adds the latest one, creating a sliding 24-hour window that moves with time.

To list interval statistics for a T1 line, enter the **lsds1intst** command, specifying the slot and line number, delimited by a period, of the line and the number (1-96) of the interval of interest. The system displays the interval statistics:

```
========================================================================
               DS1 Line Interval Statistics Entry (lsds1intst)
========================================================================
          Slot.Line                             :13.1
          Interval                              :1
          Path Errored Seconds                  :0
          Path Severely Errored Seconds         :0
          Path Severely Errored Framing Seconds :0
          Path UnAvailable Seconds              :0
          Path Control Slip Seconds             :0
          Path Code Violations                  :0
          Path SEF or AIS                       :0
          Path Bursty Errored Seconds           :0
          Line Errored Seconds                  :0
          Line Severely Errored Seconds         :0
          Line Code Violations                  :0
```

Viewing T1 Real-Time Alarm Statistics

To view real-time statistics for a single T1 line, enter the **lsds1lnst** command, specifying the slot and line number, delimited by a period, of the DS1 line. The system displays the following real-time DS1 information:

```
========================================================================
               DS1 Line Real-time statistics (lsds1lnst)
========================================================================
DS1 Line               :      13.1
Loss of Signal         :      1
Out Of Frame           :      1
Yellow Alarm           :      0
Frame Pattern Errors   :      1
Alarm State            :      42
Performance Alarm State:      196608
```

Displayed Information	Description
DS1 Line	The Slot.Line for these statistics
Loss of Signal	The number of times Loss of Signal was detected, with or without integrating to a LOS alarm
Out of Frame	The number of times Out of Frame was detected, with or without integrating to a OOF alarm
Yellow Alarm	The number of times Yellow alarm was detected, with or without integrating to a RAI alarm
Frame Pattern Errors	The number of framing pattern errors per second encountered by the DS1 interface

Displayed Information	Description
Alarm State	A bitmap of the DS1 line alarms. Zero means no alarm. • bit 0: Receiving RAI • bit 1: Transmitting RAI • bit 2: Receiving AIS • bit 3: Transmitting AIS • bit 4: Receiving OOF • bit 5: Receiving LOS • bit 6: Near end local loopback in effect • bit 7: Near end remote loopback in effect • bit 8: Near end remote payload loopback • bit 13: BERT in effect • bit 14: Far end remote loopback in effect • bit 15: Detected near end remote loopback in effect
Performance Alarm State	The DS1 line performance alarms, displayed as a row of indicators. • Indicator 0: LCV 15 minute threshold exceeded • Indicator 1: LCV 24 hour threshold exceeded • Indicator 2: LES 15 minute threshold exceeded • Indicator 3: LES 24 hour threshold exceeded • Indicator 4: LSES 15 minute threshold exceeded • Indicator 5: LSES 24 hour threshold exceeded • Indicator 6: PCV 15 minute threshold exceeded • Indicator 7: PCV 24 hour threshold exceeded • Indicator 8: PES 15 minute threshold exceeded • Indicator 9: PES 24 hour threshold exceeded • Indicator 10: PSES 15 minute threshold exceeded • Indicator 11: PSES 24 hour threshold exceeded • Indicator 12: SEFS 15 minute threshold exceeded • Indicator 13: SEFS 24 hour threshold exceeded • Indicator 14: AISS 15 minute threshold exceeded • Indicator 15: AISS 24 hour threshold exceeded • Indicator 16: UAS 15 minute threshold exceeded • Indicator 17: UAS 24 hour threshold exceeded • Indicator 18: BES 15 minute threshold exceeded • Indicator 19: BES 24 hour threshold exceeded • Indicator 20: PCSS 15 minute threshold exceeded • Indicator 21: PCSS 24 hour threshold exceeded

Clearing Real-Time T1 Statistics

To clear T1 real-time statistics, enter the **clrds1lnst** command, specifying the slot and line number, delimited by a period, of the DS1 line and the statistic to clear.

The system clears the specified real-time statistic.

Monitoring E1 Performance

You can view current or historical statistics that the system collects on E1 performance. Current statistics are performance statistics collected over the last fifteen minutes.

Viewing Current E1 Statistics

To view current statistics for a single E1 line, enter the **lse1curst** command, specifying the slot and line number, delimited by a period, of the line. The system displays current statistics:

```
=========================================================================
                E1 Line Current Statistics  (lse1curst)
=========================================================================
E1 Slot.Line                                   :    2.1
Path Errored Seconds                           :    12
Path Severely Errored Seconds                  :    0
Path UnAvailable Seconds                       :    0
Path Control Slip Seconds                      :    12
Path Code Violations                           :    0
Path Bursty Errored Seconds                    :    0
Line Errored Seconds                           :    0
Line Code Violations                           :    0
Errored Seconds Ratio                          :    158
Severly Errored Seconds Ratio                  :    0
Frame Error Errored Seconds                    :    0
Severly Errored Frame Error Seconds            :    0
Unavailable Errored Frame Error Seconds        :    0
ESR by Frame Errors                            :    0
SESR by Frame Errors                           :    0
Unavailable Errored CRC Seconds                :    0
Errored Seconds by CRC Errors                  :    0
Severely Errored Seconds by CRC Errors         :    0
Error Seconds Ratio Caused by CRC Errors       :    0
SESR Caused by CRC Errors                      :    0
Error Seconds by Far End Block Errors          :    0
Severely Errored Seconds by Far End Block Errors :  0
Unavailable Seconds by Far End Block Errors    :    0
ESR by Far End Block Errors                    :    0
SESR by Far End Block Errors                   :    0
```

To view current statistics for all E1 lines, enter the **lse1cursts** command.

The system displays the current statistics summary:

```
========================================================================
           E1 Current Statistics for all Lines (lse1cursts)
========================================================================
Slot.Line    Error Secs   SeverSecs    SlipSecs    UnAvailSecs
=========    ===========  =========    =========   ===========
     3.1              0           0            0             0
     3.2              0           0            0             0
     3.3              0           0            0             0
     3.4              0           0            0             0
```

Viewing Total E1 Statistics

Total statistics are performance statistics collected since the previous midnight. So just before midnight there are almost 24 hours of statistics available, at midnight the statistic counters are reset, and after midnight the system starts accumulating new data. To view total statistics for an E1 line, enter the **lse1totst** command, specifying the slot and line number, delimited by a period, of the line. The system displays current statistics:

```
========================================================================
              E1 Line Total Statistics (lse1totst)
========================================================================
E1 Slot.Line                                 : 2.1
Path Errored Seconds                         : 572
Path Severely Errored Seconds                : 0
Path UnAvailable Seconds                     : 0
Path Control Slip Seconds                    : 572
Path Code Violations                         : 0
Path Bursty Errored Seconds                  : 0
Line Errored Seconds                         : 0
Line Code Violations                         : 0
Error Seconds Ratio(ESR)                     : 0
Severely Errored Seconds Ratio(SESR)         : 0
Unavailable Seconds by Frame Errors          : 0
Error Seconds by Frame Errors                : 0
Severely Errored Seconds by Frame Errors     : 0
ESR by Frame Errors                          : 0
SESR by Frame Errors                         : 0
Unavailable Seconds by CRC                   : 0
Error Seconds by CRC                         : 0
ESR by Frame Errors                          : 0
SESR by Frame Errors                         : 0
Unavailable Seconds by Far End Block Errors: 0
ESR by Far End Block Errors                  : 0
SES by Far End Block Errors                  : 0
ESR by Far End Block Errors                  : 0
SESR by Far End Block Errors                 : 0
```

To view 24-hour statistics for all E1 lines, enter the **lse1totsts** command.

The system displays the 24-hour statistics summary:

```
===============================================================================
               E1 Total Stats (lse1totsts)
===============================================================================
Slot.Line   ErrSecs   SeverErrSecs    SlipSecs    UnAvailSecs  LineErSecs
=========   =======   ============    ============   ===========  ==========
      3.1         2              0               2             0           0
      3.2         2              0               2             0           0
      3.3         2              0               2             0           0
      3.4         2              0               2             0           0
```

Viewing Interval E1 Statistics

Interval statistics are collected by each E1 Interface for the previous 24 hours of operation. The 24 hours are broken into 96 15-minute intervals, where interval 1 is the most recent and 96 is the oldest. As time progresses, the system drops the oldest interval and adds the latest one, creating a sliding 24-hour window that moves with time.

To list interval statistics for an E1 line, enter the **lse1intst** command, specifying the slot and line number, delimited by a period, of the line and the number (1-96) of the interval of interest.

The system displays the interval statistics:

```
=======================================================================
             E1 Line Interval Statistics (lse1intst)
=======================================================================
E1 Slot.Line                               : 3.1
Interval                                    : 1
Path Errored Seconds                        : 0
Path Severely Errored Seconds               : 0
Path UnAvailable Seconds                    : 0
Path Control Slip Seconds                   : 0
Path Code Violations                        : 0
Path Bursty Errored Seconds                 : 0
Line Errored Seconds                        : 0
Line Code Violations                        : 0
Errored Seconds Ratio                       : 0
Severely Errored Seconds Ratio              : 0
Frame Error Errored Seconds                 : 0
Severly Errored Frame Error Seconds         : 0
Far End Unavailable Error Seconds           : 0
ESR by Far End Errors                       : 0
SESR by Far End Errors                      : 0
Unavailable Errored CRC Seconds             : 0
Errored CRC Seconds                         : 0
Severely Errored CRC Seconds                : 0
ESR Caused by CRC Errors                    : 0
SESR Caused by CRC Errors                   : 0
Far End Block Errors                        : 0
Severely Errored Secs by Far End Errors     : 0
Unavailable Seconds by Far End Block Errors: 0
ESR by Far End Block Errors                 : 0
SESR by Far End Block Errors                : 0
```

Viewing E1 Real-Time Alarm Statistics

To view real-time statistics for a single E1 line, enter the **lse1lnst** command, specifying the slot and line number, delimited by a period, of the line. The system displays the following real-time E1 information:

```
====================================================================
              E1 Line statistics (lse1lnst)
====================================================================
E1 Line                 :       3.1
Loss of Signal          :       0
Out Of Frame            :       0
Yellow Alarm            :       0
Remote Multiframe Alarm:        0
Frame Pattern Errors    :       0
Far End Block Errors    :       0
CRC Errors              :       0
Alarm State             :       0
Performance Alarm State:        0
```

Displayed Information	Description
E1 Line	The Slot.Line for these statistics
Loss of Signal	The number of times Loss of Signal was detected, with or without integrating to a LOS alarm
Out of Frame	The number of times Out of Frame was detected, with or without integrating to a OOF alarm
Yellow Alarm	The number of times RAI was detected, with or without integrating to a RAI alarm
Remote Multiframe Alarm	The number of times the Remote Multiframe Alarm Indications was detected, with or without integrating to Yellow alarm
Frame Pattern Errors	The number of framing pattern errors encountered by the E1 interface
Far End Block Errors	The number of times the Far End Block Error was encountered by the E1 interface
CRC Errors	The number of times the CRC was encountered by an E1 interface

Displayed Information	Description
Alarm State	A bitmap of the E1 line alarms. Zero means no alarm.
	• Bit 0: Receiving RAI
	• Bit 1: Transmitting RAI
	• Bit 2: Receiving AIS
	• Bit 3: Transmitting AIS
	• Bit 4: Receiving OOF
	• Bit 5: Receiving LOS
	• Bit 6: Near End Local Loopback
	• Bit 7: Near End Remote Loopback
	• Bit 8: Near End Remote Payload Loopback
	• Bit 9: BERT in effect
	• Bit 10: Far End Remote Loopback in effect
	• Bit 11: Detected Near End Remote Loopback
	• Bit 12: Receiving Out of CRC Multi-Frame
	• Bit 13: Receiving Remote Multiframe Alarm Indication (RMAI)
	• Bit 14: Transmitting Remote Multiframe Alarm Indication (RMAI)
	• Bit 15: Receiving TS16 Alarm Indication Signal
	• Bit 16: Receiving Out of Multi-Signaling Frame

Displayed Information	Description
Performance Alarm State	A bitmap of E1 line performance alarms. Zero means no alarm. • Bit 0: LCV 15 minutes threshold exceeded • Bit 1: LCV 24 hour threshold exceeded • Bit 2: LES 15 minutes threshold exceeded • Bit 3: LES 24 hour threshold exceeded • Bit 4: PCV 15 minutes threshold exceeded • Bit 5: PCV 24 hour threshold exceeded • Bit 6: ES 15 minutes threshold exceeded • Bit 7: ES 24 hour threshold exceeded • Bit 8: SES 15 minutes threshold exceeded • Bit 9: SES 24 hour threshold exceeded • Bit 10: CSS 15 minutes threshold exceeded • Bit 11: CSS 24 hour threshold exceeded • Bit 12: BES 15 minutes threshold exceeded • Bit 13: BES 24 hour threshold exceeded • Bit 14: UAS 15 minutes threshold exceeded • Bit 15: UAS 24 hour threshold exceeded • Bit 16: ESR 15 minutes threshold exceeded • Bit 17: ESR 24 hour threshold exceeded • Bit 18: SESR 15 minutes threshold exceeded • Bit 19: SESR 24 hour threshold exceeded • Bit 20: FEESR 15 minutes threshold exceeded • Bit 21: FEESR 24 hour threshold exceeded • Bit 22: FESESR 15 minutes threshold exceeded • Bit 23: FESESR 24 hour threshold exceeded • Bit 24: FEBEESR 15 minutes threshold exceeded • Bit 25: FEBEESR 24 hour threshold exceeded • Bit 26: FEBESESR 15 minutes threshold exceeded • Bit 27: FEBESESR 24 hour threshold exceeded • Bit 28: CRCESR 15 minutes threshold exceeded • Bit 29: CRCESR 24 hour threshold exceeded • Bit 30: CRCSESR 15 minutes threshold exceeded • Bit 31: CRCSESR 24 hour threshold exceeded

To view real-time statistics for all E1 lines, enter the **lse1lnst**s command.

The system displays the real-time statistics summary:

```
=======================================================================
         E1 Statistics for all Lines (lse1lnsts)
=======================================================================
Slot.Line   LossOfSignal OutOfFrame   CRCErrs     FrameErrs
========    ============ ==========   =========   ===========
    3.1            0          0           0             0
    3.2            0          0           0            91
    3.3            0          0           0            84
    3.4            0          0           0            90
```

Displayed Information	Description
Slot.Line	The Slot.Line for these statistics
LossOf Signal	The number of times Loss of Signal was detected, with or without integrating to a LOS alarm
Out Of Frame	The number of times Out of Frame was detected, with or without integrating to a OOF alarm
CRC Errors	The number of times the CRC was encountered by an E1 interface
FrameErrs	The number of framing pattern errors per second encountered by the E1 interface

Clearing Real-Time E1 Statistics

To clear E1 real-time statistics, enter the **clre1lnst** command, specifying the slot and line number, delimited by a period, of the line and the statistic to clear.

The system clears the specified real-time statistic.

Monitoring DS3 Performance

You can view current or historical statistics on DS3 performance.

Viewing Current DS3 Statistics

Current statistics are performance statistics collected over the last fifteen minutes. To view current statistics for a single DS3, enter the **lsds3curst** command, specifying the slot and line number, delimited by a period, of the DS3 line. The system displays current statistics:

```
=========================================================================
                DS3 Line Current Statistics (lsds3curst)
=========================================================================
DS3 Slot.Line                      :      14.501
P-bit Errored Seconds              :      0
P-bit Severely Error Seconds       :      0
Severely Errored Framing Seconds   :      0
Path UnAvailable Seconds           :      35
Line Code Violations               :      0
P-bit Code Violations              :      0
Line Errored Seconds               :      0
Alarm Indication Signal Seconds    :      0
```

Note   All C-Bit counters are not increment for the M23 option.

To view current statistics for all DS3 lines, enter the **lsds3cursts** command. The system displays all current DS3 statistics:

```
=========================================================================
         DS3 Current Statistics for all Lines (lsds3cursts)
=========================================================================
Slot.Line    PBitErr Secs   SevErrFrm Secs   UAS Secs    LCV Count
=========    ============   ==============   ==========  ===========
  14.501           0             0              24            0
  14.502           0             0              24            0
```

Viewing Total DS3 Statistics

Total statistics are performance statistics collected since the previous midnight. So just before midnight there are almost 24 hours of statistics available, at midnight the statistic counters are reset, and after midnight the system starts accumulating new data. To view total statistics for a DS3, enter the **lsds3totst** command, specifying the slot and line number, delimited by a period, of the DS3 line. The system displays current statistics:

```
=========================================================================
                DS3 Line Total Statistics (lsds3totst)
=========================================================================
DS3 Slot.Line                      :      14.501
P-bit Errored Seconds              :      3
P-bit Severely Error Seconds       :      3
Severely Errored Framing Seconds   :      3
Path UnAvailable Seconds           :      896
Line Code Violations               :      0
P-bit Code Violations              :      14966
Line Errored Seconds               :      0
Alarm Indication Signal Seconds    :      0
```

Note   All C-Bit counters are not increment for the M23 option.

Viewing Interval DS3 Statistics

Interval statistics are collected by each DS3 Interface for the previous 24 hours of operation. The 24 hours are broken into 96 15-minute intervals, where interval 1 is the most recent and 96 is the oldest. As time progresses, the system drops the oldest interval and adds the latest one, creating a sliding 24-hour window that moves with time.

To list interval statistics for a DS3, enter the **lsds3intst** command, specifying the slot and line number and the interval of interest. The system displays the interval statistics:

```
=======================================================================
                 DS3 Line Interval Statistics Entry (lsds3intst)
=======================================================================
DS3 Slot.Line                       : 14.501
Interval                            : 1
P-bit Errored Seconds               : 3
P-bit Severely Errored Seconds      : 3
Severely Errored Framing Seconds    : 3
Path UnAvailable Seconds            : 896
Line Code Violations                : 0
P-bit Code Violations               : 14966
Line Errored Seconds                : 0
Alarm Indication Signal Seconds     : 0
```

Viewing DS3 Real-Time Alarm Statistics

To view real-time statistics for a single DS3, enter the **lsds3lnst** command, specifying the slot and line number, delimited by a period. The system displays the following real-time DS3 information:

```
=======================================================================
                 DS3 Line statistics (lsds3lnst)
=======================================================================
DS3 Line               :    14.501
Loss of Signal         :    58884
Out Of Frame           :    58884
Remote Alarm Indication :    0
Framing Pattern Errors  :    0
PBit Parity Errors      :    0
Far End Block Errors    :    0
Excessive Zero Errors   :    0
```

Clearing Real-Time Statistics

To clear real-time statistics, enter the **clrds3lnst** command, specifying the slot and line number, delimited by a period.

The system clears the real-time statistic.

Monitoring SONET Performance

The system collects performance statistics at three levels:

• Section

- Line
- Path

Monitoring SONET Section Statistics

Viewing Section Current Statistics

Current statistics are performance statistics collected over the last fifteen minutes. To view current statistics for a single line, enter the **lsssectioncst** command, specifying the slot and line number delimited by a period. The system displays current statistics for the specified line:

```
=======================================================================
             Sonet Section Current Statistics (lsssectioncst)
=======================================================================
Sonet section Slot.Line             :      9.1
Section Current Status              :      6
Errored Seconds                    :      339
Severely Errored Seconds           :      339
Severely Errored Framing Seconds   :      339
Coding Voilations                  :      0
```

To view current statistics for all lines, enter the **lsssectioncsts** command. The system displays the current statistics for all lines:

```
=======================================================================
        Sonet Section Current Statistics for all Lines (lsssectioncsts)
=======================================================================
Slot.Line    Error Secs    SeverSecs    FrameSecs    CodingVoilations
=========    ==========    =========    =========    ===========
    9.1           368          368          368            0
    9.2           848          848          848            0
```

Clearing Section Current Statistics

To clear statistics, enter the **clrssectioncst** command, specifying the slot and line number, delimited by a period, and the statistical counter to clear. Specify the counter as follows:

1—None

2—All

3—ES

4—SES

5—SEFS

6—CV

For example, the following command clears all current section statistics for slot 9 line 1:

```
clrssectioncst 9.1 2
```

Viewing Section Total Statistics

Total statistics are performance statistics collected since the previous midnight. So just before midnight there are almost 24 hours of statistics available, at midnight the statistic counters are reset, and after midnight the system starts accumulating new data. To view total statistics for a single line, enter the **lsssectiontst** command, specifying the slot and line number delimited by a period. The system displays the total statistics for the specified line:

```
=======================================================================
        Sonet Section Total Statistics (lsssectiontst)
=======================================================================
Sonet section Slot.Line              :      9.1
Errored Seconds                      :      87293
Severely Errored Seconds             :      87293
Severely Errored Framing Seconds     :      87293
Coding Voilations                    :      0
```

To view total statistics for all lines, enter the **lsssectiontsts** command. The system displays total statistics for all lines:

```
=======================================================================
        Sonet Section Total Statistics for all Lines (lsssectiontsts)
=======================================================================
Slot.Line    Error Secs    SeverSecs    FrameSecs    CodingVoilations
=========    ==========    =========    =========    ===========
     9.1         87293        87293        87293            0
     9.2         63892        63892        63892            0
```

Clearing Section Total Statistics

To clear statistics, enter the **clrssectiontst** command, specifying the slot and line number delimited by a period and the statistical counter to clear. Specify the counter as follows:

    1—None

    2—All

    3—ES

    4—SES

    5—SEFS

    6—CV

For example, the following command clears all total section statistics for slot 9 line 1:

```
clrssectiontst 9.1 2
```

Viewing Section Interval Statistics

Interval statistics are collected by each interface for the previous 24 hours of operation. The 24 hours are broken into 96 15-minute intervals, where interval 1 is the most recent and 96 is the oldest. As time progresses, the system drops the oldest interval and adds the latest one, creating a sliding 24-hour window that moves with time.

To view interval statistics for a single line, enter the **lsssectionist** command, specifying the slot and line number, delimited by a period, and the desired interval. The system displays the interval statistics:

```
========================================================================
            Sonet Section Interval Statistics (lsssectionist)
========================================================================
Sonet section Slot.Line               :      9.1
Interval                              :      1
Errored Seconds                       :      900
Severely Errored Seconds              :      900
Severely Errored Framing Seconds      :      900
Coding Voilations                     :      0
```

To view interval statistics for all lines, enter the **lsssectionists** command. The system displays interval statistics for all lines:

```
========================================================================
          Sonet Section Interval Statistics for all Lines (lsssectionists)
========================================================================
Slot.Line    Interval    ErrSecs    SeverSecs    CVSecs    SEFSecs
=========    =========   =========  =========    =========  =========
      9.1            1        900          900         0        900
      9.1            2        900          900         0        900
      9.1            3        900          900         0        900
      9.1            4        900          900         0        900
      9.1            5        900          900         0        900
      9.1            6        900          900         0        900
      9.1            7        900          900         0        900
      9.1            8        900          900         0        900
      9.1            9        900          900         0        900
      9.1           10        900          900         0        900
      9.1           11        900          900         0        900
      9.1           12        900          900         0        900
      9.1           13        900          900         0        900
      9.1           14        900          900         0        900
      9.1           15        900          900         0        900
      9.1           16        900          900         0        900
      9.1           17        900          900         0        900
      9.1           18        900          900         0        900
      9.1           19        900          900         0        900
      9.1           20        900          900         0        900
```

Monitoring SONET Line Statistics

Viewing Line Current Statistics

Current statistics are performance statistics collected over the last fifteen minutes. To view current statistics for a single line, enter the **lsslinecst** command, specifying the slot and OC-3 line number delimited by a period. The system displays current statistics for the specified line:

```
======================================================================
            Sonet Line Current Statistics (lsslinecst)
======================================================================
Sonet Line Slot.Line                   :      9.1
Line Current Status                    :      2
Errored Seconds                        :      0
Severely Errored Seconds               :      0
Coding Voilations                      :      0
UnAvailable Seconds                    :      668
```

To view current statistics for all lines, enter the **lsslinecsts** command. The system displays the current statistics for all lines:

```
======================================================================
          Sonet Line Current Statistics for all Lines (lsslinecsts)
======================================================================
Slot.Line   Error Secs   SeverSecs   CodingVoilations   UnAvailSecs
=========   ===========  =========   ==============     ===========
    9.1          0           0             0                689
    9.2          0           0             0                269
```

Clearing Line Current Statistics

To clear statistics, enter the **clrslinest** command, specifying the slot and line number, delimited by a period, and the statistical counter to clear. Specify the counter as follows:

1—None

2—All

3—ES

4—SES

5—CV

6—UAS

For example, the following command clears all current line statistics for slot 9 line 1:

```
clrslinest 9.1 2
```

Viewing Line Total Statistics

Total statistics are performance statistics collected since the previous midnight. So just before midnight there are almost 24 hours of statistics available, at midnight the statistic counters are reset, and after midnight the system starts accumulating new data. To view total statistics for a single line, enter the **lsslinetst** command, specifying the slot and line number delimited by a period. The system displays the total statistics for the specified line:

```
=======================================================================
        Sonet Line Total Statistics (lsslinetst)
=======================================================================
Sonet Line Slot.Line              :      9.1
Errored Seconds                   :      0
Severely Errored Seconds          :      0
Coding Voilations                 :      0
UnAvailable Seconds               :      8729
```

To view total statistics for all lines, enter the **lsslinetsts** command. The system displays total statistics for all lines:

```
=======================================================================
      Sonet Line Total Statistics for all Lines (lsslinetsts)
=======================================================================
Slot.Line    Error Secs   SeverSecs    CodingVoilations  UnAvailSecs
=========    ===========  =========    =============     ===========
    9.1            0           0             0               87293
    9.2            0           0             0               63892
```

Clearing Line Total Statistics

To clear statistics, enter the **clrslinetst** command, specifying the slot and line number, delimited by a period, and the statistical counter to clear. Specify the counter as follows:

> 1—None
>
> 2—All
>
> 3—ES
>
> 4—SES
>
> 5—CV
>
> 6—UAS

For example, the following command clears all total section statistics for slot 9 line 1:

```
clrslinetst 9.1 2
```

Viewing Line Interval Statistics

Interval statistics are collected by each interface for the previous 24 hours of operation. The 24 hours are broken into 96 15-minute intervals, where interval 1 is the most recent and 96 is the oldest. As time progresses, the system drops the oldest interval and adds the latest one, creating a sliding 24-hour window that moves with time.

To view interval statistics for a single line, enter the `lsslineist` command, specifying the slot and line number, delimited by a period, and the desired interval. The system displays the interval statistics:

```
=======================================================================
             Sonet Line Interval Statistics (lsslineist)
=======================================================================
Sonet Line Slot.Line                    :     9.1
Interval                                :     1
Errored Seconds                         :     0
Severely Errored Seconds                :     0
Coding Voilations                       :     0
UnAvailable Seconds                     :     900
```

To view interval statistics for all lines, enter the `lsslineists` command. The system displays interval statistics for all lines:

```
=======================================================================
         Sonet Line Interval Statistics for all Lines (lsslineists)
=======================================================================
Slot.Line    Interval    ErrSecs    SeverSecs   CVSecs    UASecs
=========    =========   =========  =========   ========= =========
    9.1          1          0          0          0         900
    9.1          2          0          0          0         900
    9.1          3          0          0          0         900
    9.1          4          0          0          0         900
    9.1          5          0          0          0         900
    9.1          6          0          0          0         900
    9.1          7          0          0          0         900
    9.1          8          0          0          0         900
    9.1          9          0          0          0         900
    9.1         10          0          0          0         900
    9.1         11          0          0          0         900
    9.1         12          0          0          0         900
    9.1         13          0          0          0         900
    9.1         14          0          0          0         900
    9.1         15          0          0          0         900
    9.1         16          0          0          0         900
    9.1         17          0          0          0         900
    9.1         18          0          0          0         900
    9.1         19          0          0          0         900
    9.1         20          0          0          0         900
```

Monitoring SONET Path Statistics

Viewing Path Current Statistics

Current statistics are performance statistics collected over the last fifteen minutes. To view current statistics for a single line, enter the **lsspathcst** command, specifying the slot and OC-3 line number delimited by a period. The system displays current statistics for the specified line:

```
========================================================================
               Sonet Path Current Statistics (lsspathcst)
========================================================================
Sonet Path Slot.Line              :      9.1
Path Current Status               :      c
Errored Seconds                   :      0
Severely Errored Seconds          :      0
Coding Voilations                 :      0
UnAvailable Seconds               :      866
```

To view current statistics for all lines, enter the **lsspathcsts** command. The system displays the current statistics for all lines:

```
========================================================================
          Sonet Path Current Statistics for all Lines (lsspathcsts)
========================================================================
Slot.Line   Error Secs   SeverSecs   CodingVoilations  UnAvailSecs
=========   ===========  =========   =============     ===========
     9.1          0           0            0                896
     9.2          0           0            0                477
```

Clearing Path Current Statistics

To clear statistics, enter the **clrspathcst** command, specifying the slot and line number, delimited by a period, and the statistical counter to clear. Specify the counter as follows:

1—None

2—All

3—ES

4—SES

5—CV

6—UAS

For example, the following command clears all current line statistics for slot 9 line 1:

```
clrspathcst 9.1 2
```

Viewing Path Total Statistics

Total statistics are performance statistics collected since the previous midnight. So just before midnight there are almost 24 hours of statistics available, at midnight the statistic counters are reset, and after midnight the system starts accumulating new data. To view total statistics for a single line, enter the **lsspathtst** command, specifying the slot and line number delimited by a period. The system displays the total statistics for the specified line:

```
=======================================================================
     Sonet Path Total Statistics (lsspathtst)
=======================================================================
Sonet Path Slot.Line              :      9.1
Errored Seconds                   :      0
Severely Errored Seconds          :      0
Coding Voilations                 :      0
UnAvailable Seconds               :      87293
```

To view total statistics for all lines, enter the **lsspathtsts** command. The system displays total statistics for all lines:

```
=======================================================================
     Sonet Path Total Statistics for all Lines (lsspathtsts)
=======================================================================
Slot.Line   Error Secs   SeverSecs   CodingVoilations   UnAvailSecs
=========   ===========  =========   ==============     ===========
    9.1          0           0              0               87293
    9.2          0           0              0               63892
```

Clearing Path Total Statistics

To clear statistics, enter the **clrspathtst** command, specifying the slot and line number, delimited by a period, and the statistical counter to clear. Specify the counter as follows:

> 1—None
>
> 2—All
>
> 3—ES
>
> 4—SES
>
> 5—CV
>
> 6—UAS

For example, the following command clears all total section statistics for slot 9 line 1:

```
clrspathtst 9.1 2
```

Viewing Path Interval Statistics

Interval statistics are collected by each interface for the previous 24 hours of operation. The 24 hours are broken into 96 15-minute intervals, where interval 1 is the most recent and 96 is the oldest. As time progresses, the system drops the oldest interval and adds the latest one, creating a sliding 24-hour window that moves with time.

To view interval statistics for a single line, enter the **lsspathist** command, specifying the slot and line number, delimited by a period, and the desired interval. The system displays the interval statistics:

```
=======================================================================
            Sonet Path Interval Statistics (lsspathist)
=======================================================================
Sonet Path Slot.Line               :      9.1
Interval                           :      1
Errored Seconds                    :      0
Severely Errored Seconds           :      0
Coding Voilations                  :      0
UnAvailable Seconds                :      900
```

To view interval statistics for all lines, enter the **lsspathists** command. The system displays interval statistics for all lines:

```
=======================================================================
          Sonet Path Interval Statistics for all Lines (lsspathists)
=======================================================================
Slot.Line    Interval    ErrSecs    SeverSecs    CVSecs    UASecs
=========    =========   =========  =========    =========  =========
      9.1           1          0           0           0        900
      9.1           2          0           0           0        900
      9.1           3          0           0           0        900
      9.1           4          0           0           0        900
      9.1           5          0           0           0        900
      9.1           6          0           0           0        900
      9.1           7          0           0           0        900
      9.1           8          0           0           0        900
      9.1           9          0           0           0        900
      9.1          10          0           0           0        900
      9.1          11          0           0           0        900
      9.1          12          0           0           0        900
      9.1          13          0           0           0        900
      9.1          14          0           0           0        900
      9.1          15          0           0           0        900
      9.1          16          0           0           0        900
      9.1          17          0           0           0        900
      9.1          18          0           0           0        900
      9.1          19          0           0           0        900
      9.1          20          0           0           0        900
```

Monitoring SONET Alarm Statistics

To view real-time statistics for a single line, enter the **lssonetstat** command, specifying the slot and line number, delimited by a period. The system displays the following alarm statistics:

```
======================================================================
            Sonet Line statistics (lssonetstat)
======================================================================
Sonet Line               :     9.1
Loss of Signal           :     472938
Loss of Frame            :     0
Line AIS                 :     472938
Line RDI                 :     0
Path LOP                 :     0
Path AIS                 :     472938
Path RDI                 :     0
Path SLM                 :     0
Alarm State              :     15
Performance Alarm State  :     c0c03c
```

The Alarm State and Performance Alarm State are bitmap indicators, as follows:

Displayed Information	Description
Alarm State	A bitmap of the SONET line alarms. Zero means no alarm.
	Bit 0: sonetStatsLOS
	Bit 1: sonetStatsLOF
	Bit 2: sonetStatsLineAIS
	Bit 3: sonetStatsLineRFI
	Bit 4: sonetStatsPathAIS
	Bit 5: sonetStatsPathLOP
	Bit 6: sonetStatsPathUEQ
	Bit 7: sonetStatsPathTIM
	Bit 8: sonetStatsPathSLM
	Bit 9: sonetStatsPathRFI
	Bit 10: sonetStatsPathRFIServer
	Bit 11: sonetStatsPathRFIConnectivity
	Bit 12: sonetStatsPathRFIPayload

Displayed Information	Description
Performance Alarm State	A bitmap of SONET line performance alarms. Zero means no alarm.
	Bit 0: SCV(section CV) 15 minute threshold exceeded
	Bit 1: SCV 24 hour threshold exceeded
	Bit 2: SES(section ES) 15 minute threshold exceeded
	Bit 3: SES 24 hour threshold exceeded
	Bit 4: SSES(section SES) 15 minute threshold exceeded
	Bit 5: SSES 24 hour threshold exceeded
	Bit 6: SSEFS(section SEFS)15 minute threshold exceeded
	Bit 7: SSEFS 24 hour threshold exceeded
	Bit 8: LCV(line CV) 15 minute threshold exceeded
	Bit 9: LCV 24 hour threshold exceeded
	Bit 10: LES(line ES) 15 minute threshold exceeded
	Bit 11: LES 24 hour threshold exceeded
	Bit 12: LSES(line SES) 15 minute threshold exceeded
	Bit 13: LSES 24 hour threshold exceeded
	Bit 14: LUAS(line ES) 15 minute threshold exceeded
	Bit 15: LUAS 24 hour threshold exceeded
	Bit 16: PCV(path CV) 15 minute threshold exceeded
	Bit 17: PCV 24 hour threshold exceeded
	Bit 18: PES(path ES) 15 minute threshold exceeded
	Bit 19: PES 24 hour threshold exceeded
	Bit 20: PSES(path SES) 15 minute threshold exceeded
	Bit 21: PSES 24 hour threshold exceeded
	Bit 22: PUAS(path UAS) 15 minute threshold exceeded
	Bit 23: PUAS 24 hour threshold exceeded

To view interval statistics for all lines, enter the **lssonetstats** command. The system displays interval statistics for all lines:

```
==========================================================================
         List statistics for all Sonet line (lssonetstats)
==========================================================================
Slot.Line    LOS          LOF          AlarmState      PerAlarmState
=========    =========    =========    =============   =============
     9.1     2265048      2265048      67              c0c0fc
     9.2      426423       426423      67              c0c0fc
```

Clearing SONET Performance Alarm Statistics

To clear statistics, enter the **clrsonetstats** command, specifying the slot and line number, delimited by a period, and the statistical counter to clear. Specify the counter as follows:

1—noAction

2—clearAll

3—clearSeCV15Min

4—clearSeCV24Hr

5—clearSeES15Min

6—clearSeES24Hr

7—clearSeSES15Min

8—clearSeSES24Hr

9—clearSeSEFS15Min

10—clearSeSEFS24Hr

11—clearLCV15Min

12—clearLCV24Hr

13—clearLES15Min

14—clearLES24Hr

15—clearLSES15Min

16—clearLSES24Hr

17—clearLUAS15Min

18—clearLUAS24Hr

19—clearPCV15Min

20—clearPCV24Hr

21—clearPES15Min

22—clearPES24Hr

23—clearPSES15Min

24—clearPSES24Hr

25—clearPUAS15Min

26—clearPUAS24Hr

27—clearAll15Min

28—clearAll24Hr

For example, the following command clears all total section statistics for slot 9 line 1:

```
clrsonetstats 9.1 2
```

CHAPTER **8**

Troubleshooting

The MGX 8260 Media Gateway includes diagnostic features that facilitate fault location, such as loopback and bit error rate tests. See the following sections for information on how to locate and clear trouble conditions.

- Performing Loopback Tests
- Performing BERT Tests
- Clearing Alarms

Performing Loopback Tests

Loopback tests are powerful troubleshooting tools that help maintenance personnel locate faults along the transmission path. DS1/E1 and DS3 lines provide both local and line loopbacks.

Figure 8-1   DS1/E1 and DS3 Loopback Options

The local loopback option loops the DS1 signal back towards the backplane and helps isolate problems on the MGX 8260 side of the signal path. The line loopback option loops the signal back towards the DS1 or DS3 line and helps identify problems in the signal path between the MGX 8260 Media Gateway and other network equipment. A third option, payload loopback, is similar to line loopback, except that the RX signal loops through the card's DS1 or DS3 framer logic before being returned on the TX line. Payload loopback helps determine whether the card itself is functioning properly.

Warning   **Loopback testing interrupts service. Perform during in a pre-arranged maintenance window or when the line is down.**

DS1/E1 Loopback

To perform a DS1/E1 loopback test, follow these steps:

Step 1   Activate the loopback using the **chds1ln**. Specify the first and last parameters—the slot and line number, delimited by a period, of the DS1 line and the type of loopback test. Refer to the following table for loopback types:

Value	Name
1	dsx1NoLoop
2	dsx1PayloadLoop
3	dsx1LineLoop
4	dsx1OtherLoop (local)

For example, the following command loops line 2 on slot 3:

```
chds1ln 3.2 # # # # 2
```

The system activates the loopback and changes the corresponding line LED to blinking yellow.

Step 2   Perform DS1/E1 signal tests, such as the BERT test. For more information, see the "Performing BERT Tests" section on page 8-4.

Step 3   Release the loopback by entering the **chds1ln** command again, but specify the dsx1NoLoop parameter. For example, to release the loopback on slot 3, line 2, enter the command as follows:

```
chds1ln 3.2 # # # # 1
```

The system releases the loopback, changes the line LED to green, and returns the line to normal operation.

Step 4   Verify that the loopback is clear using the **lsds1ln** command.

DS3 Loopback

To perform a DS3 loopback test, follow these steps:

Step 1   Activate the loopback using the **chds3ln** command. Specify the first and last parameters—the slot and line number, delimited by a period, of the DS1 line and the type of loopback test. Refer to the following table:

Value	Name
1	dsx3NoLoop
2	dsx3PayloadLoop
3	dsx3LineLoop
4	dsx3OtherLoop

Note   Local loopback for DS3 lines is not supported.

For example, the following command loops line 2 on slot 7:

```
chds1ln 7.2 # # # # 2
```

The system activates the loopback and changes the corresponding line LED to blinking yellow.

Step 2   Perform DS3 signal tests, as appropriate.

Step 3   Release the loopback by reentering the **chds3ln** command, but specify the dsx3NoLoop parameter. For example, to release the loopback on slot 7, line 2, enter the command as follows:

```
chds3ln 7.2 # # # # 1
```

The system releases the loopback, changes the line LED to green, and returns the line to normal operation.

Step 4   Verify that the loopback is clear using the **lsds3ln** command.

SONET Loopback

To perform a SONET loopback test, follow these steps:

Step 1   Activate the loopback using the **chsonetln** command, specifying the slot, line, and loopback type. Refer to the following table for the loopback type:

Value	Name
1	No loop
2	Line loop
3	Serial loop
4	Parallel loop

Note   Serial and parallel loops are both local loopback states.

For example, the following command loops line 2 on slot 9:

```
chsonetln 9.2 # # # 2
```

The system activates the loopback and changes the corresponding line LED to blinking yellow.

Step 2   Perform SONET signal tests, as appropriate.

Step 3   Release the loopback by reentering the **chds3ln** command, but specify the dsx3NoLoop parameter. For example, to release the loopback on slot 7, line 2, enter the command as follows:

```
chsonetln 7.2 # # # # 1
```

The system releases the loopback, changes the line LED to green, and returns the line to normal operation.

Step 4   Verify that the loopback is clear using the **lssonetln** command.

Performing BERT Tests

Bit Error Rate Tests (BERT) check the error performance of DS1/E1 lines. Often used in conjunction with loopback tests, this test helps isolate equipment or line segments with degraded performance. Typically, you activate loopback on one end of the communications link and activate the BERT test on the other. Do not activate loopback and BERT together on the same equipment.

Warning   **BERT tests interrupt service. Perform in a pre-arranged maintenance window or when the line is down.**

DS1/E1 BERT Test

To use the DS1/E1 BERT test, follow these steps:

Step 1   Activate the test signal using the **onbertds1** command as described in the "onbertds1" section on page 9-357. For example, the following command activates the bert test on channel 1 of line 1 in slot 11 using a rand9Bit pattern with no error injection.

```
onbertds1 11.1 1 1 1
```

Step 2   Check the test results using the **lsbertds1** command, specifying the slot and line number, delimited by a period, of the DS1 line.

The system displays the BERT status:

```
=====================================================================
             DS1 Bert Status (lsbertds1)
=====================================================================
DS1 Line              :      11.1
Bert Status           :      inSync
Received Bit Pattern  :      4050854036
Receive Count         :      9345256
Receive Error Count   :      0
```

Displayed Information	Description
DS1 Line	The line for the test results.
Bert Status	The status of the test, as follows:
	1: idle
	2: in-sync
	3: out-of-sync
	4: failed
Received Bit Pattern	The bit pattern the receiver synchronized on.
Receive Count	The number of bits received during the BERT test. Use this parameter with the Receive Error Count to calculate the Bit Error Rate (BER).
Receive Error Count	The number of error bits received during the BERT test. Use this parameter with the Receive Count to calculate the Bit Error Rate (BER).

Step 3   Stop the test using the offbertds1 command, specifying the slot and line number. For example:

```
offbertds1 11.1
```

The system stops the bert test and resumes transport of normal traffic.

Clearing Alarms

The MGX 8260 Media Gateway has the following alarm categories:

- Shelf
- Card
- DS1, E1, and DS3
- Fast Ethernet
- OC-3
- Environmental

If you know the alarm source, proceed to the corresponding section of this chapter. Otherwise, start at the shelf level and work toward the cause.

Clearing Chassis Alarms

Chassis alarms report the state of chassis environmental sensors, fan speed, card state, and 48 supply status.

To view chassis alarms, follow these steps:

Step 1 Enter the **lsalms** command.

The system displays a summary of environmental, card, and software alarms.

Step 2 Use the information to identify the most severe alarm.

Step 3 Clear the most severe alarm.

Step 4 If the system alarm identifies a card, follow instructions in "Clearing Card Alarms".

Clearing Card Alarms

Card alarms pertain to functions that affect general card operation. To view card alarms, enter the **lscd** command, specifying the card number.

The system displays information about the card, including alarm and failure details. Using the integrated alarm field described in the following table, find the description that matches your problem, and follow the instructions:

Displayed Information	Description
Integrated line alarm	One of the lines raised an alarm. Follow the instructions in section of this chapter that describes the type of line.
Line performance alarm	One of the lines raised a performance alarm. Follow the instructions in section of this chapter that describes the type of line.
Integrated port alarm	One of the ports raised an alarm. Check the port configuration and make necessary changes.

Displayed Information	Description
EMM temperature alarm	A temperature sensor raised an environmental alarm. Follow instructions in the "Clearing Environmental Alarms" section on page 8-11.
EMM voltage alarm	A voltage sensor raised an environmental alarm. Follow instructions in the "Clearing Environmental Alarms" section on page 8-11.
Component failure alarm	A hardware component of the card failed. Try the following possible remedies: • Reset the card and check to see if the alarm clears. • Remove and replace the card.

Clearing DS1/E1 and DS3 Alarms

The MGX 8260 Media Gateway supports DS1 and DS3 physical layer alarm signalling. To view current DS1 alarm conditions, enter the **lsds1lns** command. To view current DS3 alarms, enter the **lsds3lns** command.

The system lists a summary of line type, code, status, and signal code for each line. Use the Line Status field and the following guidelines to clear an alarm.

Displayed Information	Possible Cause and Corrective Action
LOF	A Loss of Frame alarm occurs when the MGX 8260 cannot synchronize on frames. Try the following possible remedies: • Verify that the framing format and clock settings for the line match the port settings. • Check the statistics for the line and look for abnormally high error rates. • If the line appears to have problems, use loopback tests to diagnose the condition.
LOS	A Loss of Signal alarm occurs when the MGX 8260 cannot detect a signal at the line. Try the following possible remedies: • Check for obvious physical cable damage, tight bends, or other unusual conditions. • If the line appears to have problems, use loopback tests to diagnose the condition.
AIS	An Alarm Indication Signal (0/1 pattern) occurs when the receive link encounters problems for a set number of frames.
RDI	A Remote Defect Indication occurs when the remote equipment encounters problems for a set number of frames at that layer.
LOMF (E1 only)	Check for framing format misconfiguration Check for CRC bits errors in the frame Check for line coding misconfiguration

Displayed Information	Possible Cause and Corrective Action
LOSMF (E1 only)	• Check for framing format misconfiguration • Check for TS16 alteration • Check for bit errors in TS16 • Check for line coding misconfiguration
Yellow (RAI)	• Check the transmit on the near end • Check the physical connection • Perform a BERT to verify the line condition
RMAI (E1 only)	• Check the transmit of TS16 at the near end • Check the physical connection • Perform a BERT to verify the line condition
Red Alarm (LOS or LOF)	See LOS of LOF above.
Yellow Alarm (RAI or RMAI)	See RAI or RMAI above.

Use the following guidelines to solve general DS1/E1 configuration problems.

Problem	Possible Cause
Failure to configure CAS	• D-channel is enabled • Framing format conflict
Failure to change framing type	• D-channel is enabled • Failure to set hardware device
Failure to delete a line	• Voice port exists • Hardware failure
Failure to change system line interface mode	• BSC configured, even if not physically installed, when changing from the T1 to E1 mode • T1 line exists when changing from the T1 to E1 mode • E1 line exists when changing from the E1 to T1 mode

Clearing Fast Ethernet Alarms

The MGX 8260 Media Gateway monitors the Fast Ethernet trunks for conditions that can cause service interruption. To view Fast Ethernet line state, enter the **lsethlns** command.

The system displays a summary of the trunk status, including the Operational Status for each line. Respond to alarms depending on the displayed alarm indication as shown in the following table:

Displayed Information	Possible Cause and Corrective Action
Failed	The Fast Ethernet failed. Make sure the SCC is in the standby mode and replace the card.
Link down in active state	The Fast Ethernet carrier is down. Try the following possible remedies: • Check the corresponding Fast Ethernet cable at the rear of the MGX 8260 chassis. It should be fully inserted and snapped in place. • Trace the Fast Ethernet network, checking for faults in other network components.
Link down in inactive state	The Fast Ethernet carrier is down, but the link is inactive. Try the following possible remedies: • Check for network administration or maintenance activity on the Fast Ethernet. • Check the corresponding Fast Ethernet cable at the rear of the MGX 8260 chassis. It should be fully inserted and snapped in place. • Trace the Fast Ethernet network, checking for faults in other network components.

Clearing SONET Alarms

The MGX 8260 Media Gateway continuously monitors lines for defect conditions and integrates alarm events over time. An alarm is declared when the defect persists for 2 seconds, and is cleared when the alarm is absent for 10 seconds. Alarm changes generate traps that notify managers of the state change.

To view alarms, use the **lssonetstat** command.

Respond to major alarms according to the guidelines in the following table:

Major Alarm	Corrective Action
LOS	• Verify the physical connection (cables, connectors) in the receive direction • Verify that the OC3 line on remote node is transmitting
OOF	• Verify that incoming signal is OC3 • Verify that the MGX8260 and remote node use to the same clock source
LOP-P	• Verify that the incoming signal is OC3 with STS3c frame structure • Verify that the SONET frame scrambling is enabled on both sides

Respond to minor alarms according to the guidelines in the following table:

Minor Alarm	Corrective Action[1]
AIS-L	The problem originated from an upstream node; investigate nodes in upstream direction
RFI-L	• Activate a line loopback at the remote node and isolate problem by checking the looped signal • Verify the physical connection (cables and connectors) in the MGX 8260 Media Gateway transmit direction
AIS-P	The problem originated from an upstream node; investigate nodes in upstream direction
RFI-P	• This is ok if MGX 8260 Media Gateway is currently transmitting AIS-P to the remote node • Otherwise, check for conditions on MGX 8260 Media Gateway that could lead to LOP-P on the remote side
TIM-P	• Verify that the expected path trace identifier (J1) is configured properly • Investigate why the remote node is transmitting a path trace identifier that does not match the expected value
UNEQ-P	• Verify that the remote node has the signal label (C2) byte configured properly • Investigate why the remote node is transmitting a signal label that does not match the expected value
PLM-P	• Verify that the remote node has the signal label (C2) byte configured properly • Investigate why the remote node is transmitting a signal label that does not match the expected value
RFI-P server	• Not a problem if MGX8260 is currently transmitting AIS-P to the remote node • Otherwise, check for conditions on MGX8260 that could lead to LOP-P on the remote side
RFI-P connectivity	• Check for conditions on MGX8260 that could lead to TIM-P or UNEQ-P on the remote side
RFI-P payload	• Check for conditions on MGX8260 that could lead to PLM-P on the remote side

1.   Applicable only if ERDI-P is enabled

Respond to other card and line alarms according to the guidelines in the following table:

Symptom	Corrective Action
SCC in mismatch state	• Verify that both SCCs have the identical BIM and back card configuration
OC3 line in major alarm after SCC switch over	• Verify that the Y-cable set up is correct • Prior to using a SCC as a stand by card, verify that all four OC3 lines on that SCC can function properly

Symptom	Corrective Action
SCC fails initialization	• Use the **lsevt** command to check for error events logged during initialization and look for a possible OC3 hardware failure
SCC back card type not properly programmed	• escalate problem to customer support

Clearing Environmental Alarms

The MGX 8260 Media Gateway monitors temperature and voltage at several points in the shelf and on the cards. To view environmental alarms, enter the **lsemms** command.

The system displays a summary of sensor types, status, and readings. Use the sensor type field described in the following table, find the description that matches your problem, and follow the instructions.

Displayed Information	Description
Temperature	The sensor temperature exceeds the maximum threshold value. Try the following possible remedies: • Check the fan assembly and verify that all fans are operational. • Make sure airflow is not blocked or inhibited. • Remove and replace affected cards.
Voltage	The voltage is over or under the threshold value. Try the following possible remedies: • Check the front panel PWR circuit LEDs. If PWR A or PWR B is off, check the corresponding fuse. • Check the DC power source for proper operation. • Check interconnecting power cables and connectors.
Fan speed	A fan has failed or is running too slow. Try the following possible remedies: • Check for 6 in. clearance between the top chassis in the rack and other equipment. Remove or move any equipment that is too close. • Physically inspect the fan assembly. Remove and replace a fan that is not rotating.

CHAPTER **9**

Command Reference

The MGX 8260 Media Gateway Media Gateway uses a command line interface for system administration, configuration, and service provisioning. This chapter covers the security requirement, syntax, general description, example, and related topics for each command.

Command Line Interface Guidelines

The MGX 8260 Media Gateway command line interface supports write and read commands. The MGX 8260 Media Gateway command line interface translates write commands to SNMP Set requests. You can often identify write commands by their names—add, delete (del), and change (ch). Read commands are translated into SNMP Get requests, and often have a list (ls) prefix.

Command Syntax

In this document, the command name is shown first in bold type, followed by parameters in italics. If the parameters are optional, they are enclosed in square brackets. In the online Help, parameters are shown in angle brackets.

Optional Parameters

If you do not enter optional parameters for a command, either the default values take effect or there is no change in the optional settings. Default values take effect when you use add commands without the optional parameters. No change is made when you omit parameters for other commands, such as add and change.

You can simply omit optional parameters at the end of a command string, but you must use a # symbol if you omit optional parameters in the middle of a command string.

```
chds1alm 1.1 # # # 15 144
```

Security Levels

The MGX 8260 Media Gateway command line interface enforces security with user names, passwords, and access privileges. The Command Modes section of the command reference shows a security level for each command. See Table 2-1 on page 2-2 for a definition of these levels.

Understanding Bitmaps

The MGX-8260 command line interface reports some parameters as binary bitmaps. A bitmap is a compact way of representing multiple binary indicators using a single decimal value. To interpret the bitmap, you must convert it to a binary number and then interpret the individual bit positions.

For example, the MGX-8260 Media Gateway reports the card service type as a decimal value that indicates one of four possible service types. To interpret the decimal value, convert it to a binary value using a decimal to binary conversion tool such as the Microsoft Calculator in the scientific mode.

Assume the MGX-8260 command line interface reports a decimal value of 4. The binary equivalent is 0100. Each bit of the binary number is mapped to a specific card service type:

Table 9-1   Binary Bits versus Binary Values

Bit Position	3	2	1	0
Binary Value	0	1	0	0

A bit position is set when it contains a one. In this case, the binary value sets bit position two. To determine the card service state, use the following service translation table:

Table 9-2   Bitmap Translations

Bit position	Service
Bit 0	ATM (reserved for future use)
Bit 1	Frame Relay (reserved for future use)
Bit 2	Voice
Bit 3	IP Emulation (reserved for future use)

Therefore, the service state is Voice. In this example the bit positions are mutually exclusive because you can only have one service state at a time. There following values are possible:

Table 9-3   Valid Bitmaps for Service State

Decimal value	Binary value	Service
1	0001	ATM
2	0010	Frame Relay
4	0100	Voice
8	1000	IP Emulation

The values of other bitmaps, such as alarm bitmaps, are not mutually exclusive, and any value is permitted. The conversion process is the same in both cases.

Using Online Help

The MGX-8260 command line interface includes online help.

Command Syntax Help

To get help for a command, type the command without parameters. For example, to get help on the parameters for the command that adds community strings, type the command without parameters as follows:

```
addcms
```

The system responds with a description of the command syntax and parameter definitions as follows:

```
addcms <commStrCommString> <commStrMgrIpAddr> <commStrPrivilege>
  commStrCommString: <string>
        Community String.
  commStrMgrIpAddr: <string>
        The manager's IP address associated with this Community String.
         If it is set to 0.0.0.0, the managers with any IP addresses are allowed.
  commStrPrivilege: <num>    1: read-only,   2: read-write
        The manager's privilege for read-only(1) or read-write(2).
```

Command Summary Help

To get a list of all commands for your user level, type **help**. To get a list of commands that start with a particular pattern, type help and then the characters to match. For example, the following command lists all commands that begin with add:

```
help add
```

acannfile

Activate an announcement file.

acannfile *fid*

Syntax Description

fid	The announcement file ID. Values: 1-100

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

You use this command to activate an announcement file. To view announcement file ID numbers, use the **lsannfiles** command.

Examples

The following command activates announcement file 25:

```
acannfile 25
```

Related Commands

Command	Description
deacannfile	Deactivate an announcement file
rmannfile	Remove an announcement file
lsannfile	List the given announcement file
lsannfiles	List all announcement files
lsdurationif	List duration information about announcement files

addcms

Add the community string that applies to an SNMP manager who subscribes to receive information on traps.

addcms *Comm-Str MgrAddr* [*Privilege*]

Syntax Description	Comm-Str	An SNMP community string, such as "Public". Values: string of up to 20 characters.
	MgrAddr	The IP address of the SNMP manager who wants to receive trap events. If the management IP address is set to 0.0.0.0, the community string applies to all IP addresses.
	Privilege	Read permission. Values: 1 = read-only, 2 = read-write.

Defaults *Privilege*: 1

Command Modes Security level 1

Command History	Release	Modification
	1.0	This command was first introduced.

Usage Guidelines You specify the access permission, read-only or read-write, to community strings. You can configure up to 15 community strings.

Examples The following command adds a public community string with read-write privilege for all SNMP managers:

```
addcms Public 0.0.0.0 2
```

Related Commands	Command	Description
	addtmgr	Add trap manager
	delcms	Delete community string
	lscms	List community string
	lscmss	List community strings
	lstmgr	List trap manager
	lstmgrs	List trap managers

adddchan

Add a D Channel.

adddchan *Index Repetitions DlSapProfile MacSapProfile DS0 DS0format*

Syntax Description

Index	The slot and line number, delimited by a period, of the new D Channel.
Repetitions	The number of sequential lines to add. Values: 1 to 1136.
DlSapProfile	The DLSAP profile number associated with the D Channel. Values: 1-10.
MacSapProfile	The MACSAP profile number associated with the D Channel. Values: 1-10.
DS0	The DS0 number for this D Channel. Values: Integer 1-24.
DS0format	The DS0 format for this D Channel. Values: 56 or 64.

Defaults

Repetitions: 1

DlSapProfile: 1

MacSapProfile: 1

DS0: 24

DS0format: 64

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added repetitions and DS0 format parameters.

Usage Guidelines   Use this command to assign a DLSAP (Digital Link Service Access Point) and MACSAP (Media Access Service Access Point) profile to the D Channel. These profiles define the operational characteristics of the channel's protocol stack. Before adding a D channel, you must define MACSAP and DLSAP profiles.

Examples   The following example adds a 56 kpbs D Channel (DS0 = 1) of line 1 on slot 14 using DLSAP profile 2 and MACSAP profile 3:

```
adddchan 14.1 2 3 1 56
```

Related Commands

Command	Description
adddslp	Add a DLSAP profile
addmacsapprof	Add a MACSAP profile

Command	Description
deldchan	Delete a D Channel
lsdchan	List information about a D Channel
lsdchans	List information about D Channels

adddlsp

Add a DLSAP profile.

> **adddlsp** *dlsapProfIndex* [*dlsapFrameLen dlsapWinSize dlsapRetransCount dlsapCongestionTimer dlsapt200Timer dlsapt203Timer dlsapModulo dlsapTEIAssign dlsapMaxDlcs dlsapTEI*]

Syntax Description

dlsapProfIndex	The identifier of a DLSAP Profile. Values: 1 - 20
dlsapFrameLen	The frame length, which is the maximum number of octets in an information field. Values: 1 - 1960
dlsapWinSize	The window size, which is the maximum number of sequentially numbered I-frames that may be outstanding. Values: 1 - 128
dlsapRetransCount	The maximum number of retransmissions of a frame. Values: 1 - 1023
dlsapCongestionTimer	The timer at the end of which DLCs are dropped if the congestion persists. Values: 1 - 1023
dlsapt200Timer	The number of seconds that must expire before initiating a frame. Values: Integer. Values: 1 to 3
dlsapt203Timer	The maximum time allowed without frames being exchanged. Values: Integer.Values 20 to 60
dlsapModulo	The modulus that sequentially numbers each I-frame. Values: 8 or 128
dlsapTEIAssign	The Terminal Endpoint Identifier assignment setting: • automatic—TEI is selected by the ASP Layer Management procedure on the network side. Default: 2, which yields a TEI of 1 • nonAutomatic—TEI is selected by the user
dlsapMaxDlcs	The maximum number of DLCs for this DLSAP. Values: 1 to 16
dlsapTEI	The starting number for reassigning TEIs. This number is used in conjunction with the previous two parameters to number TEIs. For example, if TEI Assignment is nonAutomatic, Maximum DLCs for this DLSAP is 4, and TEI is 14. When a D Channel is added, 4 TEIs starting at 14 are preconfigured. Values: 0 to 63

Defaults

dlsapFrameLen: 1960

dlsapWinSize: 7

dlsapRetransCount: 3

dlsapCongestionTimer: 200

dlsapt200Timer: 1

dlsapt203Timer: 10

dlsapModulo: 128

dlsapTEIAssign: 2

dlsapMaxDlcs: 1

dlsapTEI: 1

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   The DLSAP (Digital Link Service Access Point) profile defines a collection of settings for the D Channel protocol stack. These settings describe the operating characteristics of the interface between LAPD and Q.931 call control.

You assign a DLSAP profile when adding a D Channel management path. The window-size parameter, dlsapWinSize, depends on the modulo. For example, if the modulo is 8, then the range of the window size is 1 - 8. If the modulo is 128, then the range is 1 - 128.

Examples   The following example adds a DLSAP profile with default settings:

    adddlsp 1

Related Commands

Command	Description
deldlsp	Delete a DLSAP profile
lsdlsapstat	List statistics for a DLSAP
lsdlsapstats	List DLSAP statistics
lsdlsapstatus	List status for a DLSAP
lsdlsp	List a DLSAP profile
lsdlsps	List DLSAP profiles

adddds1ln

Add DS1 (T1 or E1) lines.

adddds1ln *Location numOfLines* [*LineType LineCoding SendCode LoopConfig LineSignalMode XmitClkSrc SignalBits IdleCode*]

Syntax Description		
Location		The slot and line number, delimited by a period, of the new DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:
		• NSC: 1-8 and 11-16
		• BSC: 11-16
		Valid line numbers:
		• NSC: 1-16
		• BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.
	DS3 Line Number	DS1 Line Number
	501	1-28
	502	29-56
	503	57-84
	504	85-112
	505	113-140
	506	141-168
numOfLines		Number of lines to add. The MGX 8260 stops adding lines at the first failure. Values: 1-1136.
LineType		The type of framing. The T1 values are:
		2=dsx1ESF, means use Extended superframe DS1
		3=dsx1D4, means use AT&T D4 format
		The E1 values are:
		4=dsx1E1, means use CCITT Recommendation G.704, Table 4a
		5=dsx1E1-CRC, means use CCITT Recommendation G.704, Table 4b
		6=dsx1E1-MF, means use G.704 table 4a with TS16 multi-framing enabled
		7=dsx1E1-CRC-MF, means use G.704 table 4b with TS16 multi-framing enabled
LineCoding		The line coding format. Not applicable for T1 lines added to the BSC. The valid entries are:
		1=dsx1JBZS (reserved for future use)
		2=dsx1B8ZS (T1 lines only)
		3=dsx1HDB3 (E1 lines only)
		4=dsx1ZBTSI (reserved for future use)
		5=dsx1AMI
		6=other (reserved for future use)

SendCode	The type of code being sent across the DS1 interface by the device. Values are 1 - 8 and have the following names:
	1=dsx1SendNoCode
	2=dsx1SendLineCode (T1 lines only)
	3=dsx1SendPayloadCode (reserved for future use)
	4=dsx1SendResetCode (T1 lines only)
	5=dsx1SendQRS (T1 lines only)
	6=dsx1Send511Pattern (T1 or E1)
	7=dsx1Send3in24Pattern (T1 or E1)
	8=dsx1Send1in16 (T1 lines only)
LoopConfig	The loopback configuration of the DS1 interface. Values are 1 - 4 and have the following names:
	1=dsx1NoLoop
	2=dsx1PayloadLoop
	3=dsx1LineLoop
	4=dsx1OtherLoop, means local loopback on this device
LineSignalMode	Signal mode for transmit direction. In the receive direction, the mode is always set to robbed bit (2). Values are 1 - 4 and have the following names and meanings:
	1=none, means reserve no bits and set channel bandwidth to 64 kbps.
	2=robbedBit, applies to T1 Channel Associated Signaling. Use a 56 kpps channel for this mode. You can select ABCD bit encoding, but the MGX 8260 does not detect A/B signalling. Echo cancellation is enabled at set-up unless a fax tone is detected.
	3=bitOriented, applies to E1 Channel Associated Signaling
	4=messageOriented, means Common Channel Signaling either on channel 16 of an E1 line or channel 24 of a T1 line (reserved for future use)
XmitClkSource	The clock source for the transmit signal:
	1=Loop Timing, use the recovered receive clock[1] (reserved for future use)
	2=Local Timing, use the local clock
	3=Through Timing (reserved for future use)

SignalBits	The 4-bit signaling pattern, represented by an integer:
	1=0000
	2=0001
	3=0010
	4=0011
	5=0100
	6=0101
	. . .
	16=1111
IdleCode	The code that is sent on each idle DS0 within the DS1 line. Values: 0-255

1. Supported at the SCC through the clock source configuration

Defaults

numOfLines: 1

LineType: 2 for T1 or 7 for E1

LineCoding: 2 for T1 or 3 for E1

SendCode: 1

LoopConfig: 1

LineSignalMode: 1 for T1 and 3 for E1

XmitClkSrc: 2

Signal Bits: 1 for T1 and 6 for E1

IdleCode: 127

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.1	Added BSC
1.2	Added E1 lines

Usage Guidelines   Use this command to add one or more DS1 lines to NSC or BSC circuit cards. Line type affects the line data rate, the number of DS0 channels, and the interpretation of usage and error statistics. NSCs support bothT1 and E1 line types, but you must configure the entire chassis for one type or the other. BSCs support T1 lines only. The system returns an error if you attempt to apply line changes that conflict with the chassis mode. Unspecified parameters, designated by a # symbol, assume the default value

To add lines to a BSC, first add DS3 lines, then add corresponding DS1 lines.

Note   When adding a range of lines, the process stops at the first error.

Examples   The following example adds a DS1 line with AMI line coding to slot 13 line 6:

```
addds1ln 13.6 # 5
```

Related Commands

Command	Description
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines
offbertds1	Stop BERT on DS1
onbertds1	Start BERT on DS1

addds3ln

Add a DS3 line.

> **addds3ln** *Location* [*RepeatLines LineType LineCoding SendCode LoopCfg XmitClkSource
> CableLength*]

Syntax Description

Location	The slot and line number, delimited by a period, of the new DS3 line.
	Valid slot numbers:
	BSC: 11-16
	DMC: 7 or 8 (reserved for future use)
	Valid line numbers:
	BSC: 501-506
	DMC: 1-6 (reserved for future use)
RepeatLines	The number of lines you can add in a single request. Values are 1 - 76.
LineType	The type of DS3 C-bit, which affects the interpretation of the usage and error statistics. Values are 1 - 8 and have the following names:
	1=dsx3other (reserved for future use)
	2=dsx3SYNTRAN (reserved for future use)
	3=dsx3M23
	4=dsx3CbitParity (reserved for future use)
	5=dsx3ClearChannel (reserved for future use)
	6=e3other (reserved for future use)
	7=e3Framed (reserved for future use)
	8=e3Plcp (reserved for future use)
LineCoding	Zero suppression used on this interface.The line coding dsx3B3ZS and e3HDB3 refers to patterns of normal bits and bipolar violations that are used to replace sequences of zero bits of a specified length. Values are 1 - 3 and have the following names:
	1=dsx3Other
	2=dsx3B3ZS
	3=e3HDB3 (reserved for future use)

SendCode	The type of code being sent across the DS3/E3 interface by the device. (Optional for E3 interfaces.) Values are 1 - 6 and have the following names and meanings:
	1=dsx3SendNoCode, sending looped or normal data
	2=dsx3SendLineCode, sending a request for a line loopback
	3=dsx3SendPayloadCode, sending a request for a payload loopback (all DS1/E1s in a DS3/E3 frame)
	4=dsx3SendResetCode, sending a loopback deactivation request
	5=dsx3SendDS1LoopCode, requesting to loopback a particular DS1/E1 within a DS3/E3 frame
	6=dsx3SendTestPattern, sending a test pattern
LoopConfig	The loopback configuration of the DS3/E3 interface. Values are 1 - 4 and have the following names:
	1=dsx3NoLoop
	2=dsx3PayloadLoop
	3=dsx3LineLoop
	4=dsx3OtherLoop
XmitClockSource	The transmit clock source, which is derived from the recovered receive clock of another DS3 interface. Values are 1-3 and have the following names:
	1=loopTiming
	2=localTiming
	3=throughTiming
CableLength	One of the following ranges of lengths for the cable:
	1=1 to 225 ft
	2=225 to 300 ft
	3=300 to 450 ft
	4=450 to 900 ft

Defaults

RepeatLines: 1

LineType: 3

LineCoding: 2

SendCode: 1

LoopConfig: 1

XmitClockSource: 2

CableLength: 1

Command Modes   Security level 3

Command History	Release	Modification
	1.0	This command was first introduced.
	1.1	BSC card configuration - no functional change

Usage Guidelines   Use this command to add one or more DS3 lines to BSC or DMC circuit cards. If you do not enter optional parameters the default value is used.

Note   When adding a range of lines, the process stops at the first error.

Examples   The following example adds a DS3 line on the BSC at slot 11 line 501, using all the default settings.

```
adddds3ln 11.501
```

Related Commands	Command	Description
	chds3alm	Change DS3 alarm severity and threshold
	chds3ln	Change DS3 line
	clrds3lnst	Clear statistics for DS3 line
	delds3ln	Delete DS3 line
	lsds3alm	List DS3 alarm
	lsds3curst	List DS3 current statistics
	lsds3intst	List DS3 interval statistics
	lsds3ln	List DS3 line
	lsds3lns	List DS3 lines
	lsds3totst	List DS3 total statistics

addereg

Add email registration.

addereg *Index Address Trap#1 [Trap#2 ... Trap#20]*

Syntax Description

Index	A unique number that identifies one of the ten users. Values: 1-10.
Address	The email address, up to 40 characters, of the person who wants to receive email about traps. For example, admin@cisco.com.
Trap	The number of the trap condition to register. When the trap occurs, the system sends an email to the user. Trap numbers start at 1000 and map directly to alarms and events. You must specify at least one trap.
	Values: One to twenty existing trap numbers. For more information of trap numbers, see the Chapter 6, "Alarm Surveillance."

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to specify up to 20 traps to monitor.

Examples   The following example registers user 1 for major shelf and EMM alarms:

```
addereg 1 user@domain.com 1000 1800
```

Related Commands

Command	Description
chem	Configure email registration
chereg	Change email registration
delereg	Delete email registration
lsem	List email server
lsereg	List entry registered
lseregs	List registered email alerts

addethln

Add Ethernet line.

addethln *Location Addr* [*Prim_IPGW_Addr AddTargetState RDP Mask Mode*]

Syntax Description

Location	The slot and line number, delimited by a period, of the new Ethernet line. Slot values: 9 Line values: 1-4.
Addr	IP Address in dot notation w.x.y.z.
Prim_IPGW_Addr	The IP address of the primary gateway for the interface.
AddTargetState	The state, active or inactive, of the line after the line is added. Values: 1 = active, 2 = inactive.
RDP	The state of the Router Discovery Protocol. Values: 1 = disabled, 2 = enabled.
Mask	The subnet mask in dotted notation a.b.c.d.
Mode	The mode of the line. Values: 1 = Half duplex, 2 = Full duplex.

Defaults

AddTargetState: 1

RDP: 1

Mode: 2

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to add Ethernet lines to the Fast Ethernet SCC and backcard.

Examples   The following example adds an Ethernet interface to the MGX 8250 Media Gateway at slot 7 line 1, address 10.1.2.10, and specifies the primary gateway to use.

```
addethln 9.1 10.1.2.10 10.1.1.8
```

Related Commands

Command	Description
delethln	Delete Ethernet line
chethln	Change Fast Ethernet line
upethln	Activate Ethernet line
dnethln	DeActivate Ethernet line

Command	Description
lsethln	List Ethernet line
lsethlns	List Ethernet Lines

addiproute

Add an IP route.

addiproute *IPRouteDestination nexthop IPRouteMask*

Syntax Description

IPRouteDestination	The destination IP address of this route. An entry of 0.0.0.0 is considered a default route.
nexthop	The IP address of the next hop of this route. If a route is bound to an interface (through a broadcast media), the value of this field is the agent's IP address on the interface.
mask	The mask to be logically ANDed with the destination address before being compared to the value in the IPRouteDest field.

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to add a static route to a remote destination. For systems that do not support arbitrary subnet masks, the system constructs the value mask by determining the network class:

mask	network
255.0.0.0	class-A
255.255.0.0	class-B
255.255.255.0	class-C

Examples

The following example adds a static route to 172.16.1.1 through 10.1.1.1:

```
addiproute 172.16.1.1 10.1.1.1 255.0.255.0.
```

Related Commands

Command	Description
deliproute	Delete an IP route
lsiproute	List an IP route
lsiproutes	List IP routes

addm13

Add map to DS1 from DS3.

addm13 *SrcDS3LineNum SrcDS1LineNum DestDS1SlotNum DestDS1LineNum* [*NoOfLines*]

Syntax Description		
	SrcDS3LineNum	The number of the source DS3 line. Values: 1 - 6.
	SrcDS1LineNum	The number of the DS1 line, or starting DS1 line, within the DS3 line. Values: 1 - 28.
	DestDS1SlotNum	The logical slot number for the destination NSC card. When mapping a range of DS1 lines, this is the starting slot. Values: 1-6 and 11-16.
	DestDS1LineNum	The number of the DS1, or starting DS1, in the NSC. Values: 1-16
	NoOfLines	The number of map pairs to add. Values: 1-192, depending on existing mapping. To map a single point, omit this argument.

Defaults   *NoOfLines*: 1

Command Modes   Security level 3

Command History	Release	Modification
	1.0	This command was first introduced.

Usage Guidelines Use this command to add one or more DS3 to DS1 mappings from Distribution Matrix Card (DMC) to the Narrowband Service Card (NSC). To map a single point, omit the NoOfLines argument.

Examples   For example, in an MGX 8260 Media Gateway without any existing mapping, specify the maximum number of mappings as follows:

```
addm13 1 1 1 1 192
```

To add three map entries, enter the following command:

```
addm13 1 3 1 1 3
```

Related Commands	Command	Description
	chm13	Change DS1 to DS3 map
	delm13	Delete DS1 to DS3 map
	lsm13	List DS3-to-DS1 mapping
	lsm13s	List DS3-to-DS1 mappings

addmacsapprof

Add a MACSAP profile.

addmacsapprof *Index* [*sapIf LinkArb LapdType MaxOutStFrames TimQUpperThresh TimeQLowerThresh ConnTimer t201Timer t202Timer TEICheckTimer N202 LowAutoTei KeepL1Up*]

Syntax Description		
	Index	The identifier of a MAC SAP. Values: 1 - 20.
	sapIf	The logical Interface. Values: 1 = user, 2 = network.
	LinkArb	Link setup arbitration scheme. Values: 1 = passive, 2 = active.
	LapdType	The type of LAPD interface. Values: 1 - 19, which have the following mnemonics that, in most cases,. imply their meanings:
		1=test
		2=ccitt
		3=att5EssBRA
		4=att5EssPRA
		5=att4Ess
		6=ntDMS100BRA
		7=ntDMS100PRA
		8=vn2or3
		9=insNet
		10=tr6MPC
		11=tr6PBX
		12=ausb (Austel Basic)
		13=ausp (Austel Primary)
		14=nISDN1 (National ISDN-1)
		15=etsi
		16=bc303TMC (Bellcore tr303 tmc)
		17=bc303CSC
		18=ntDMS250
		19=bellcore
	MaxOutStFrames	Maximum number of sequentially numbered I-frames that may be outstanding. Values: 1 - 255.
	TimQUpperThresh	The timer queue upper threshold for the I-frame queue. When the I-frame queue size exceeds this threshold, the congestion timer is started and flow-control is turned on. Values: 1 to 32767
	TimeQLowerThresh	The timer queue lower threshold for I-frame queue. When the I-frame queue size falls below this threshold, the congestion timer is stopped and flow-control is turned off. Values: 1 to 32767
	ConnTimer	The connection timer. Values: 1 -1024.

t201Timer	The T201 timer value. Values: 1 to 1024
t202Timer	The T202 timer value. Values: 1 to 1024
TEICheckTimer	The setting of the TEI check timer. Values: 1 - 1025. 1025 = disabled.
N202	The maximum number of transmissions of a TEI Identity request message.
LowAutoTei	The value that is greater than or equal to the lowest automatic TEI that the ASP can allocate. Applicable only when configured for automatic TEI assignment. Values: 1 to 127
KeepL1Up	A setting that keeps MAC up all the time if True. Values: 1 = False 2 = True

Defaults

sapIf: 2

LinkArb: 2

LapdType: 2

MaxOutStFrames: 7

TimQUpperThresh: 1000

TimeQLowerThresh: 100

ConnTimer: 500

t201Timer: 1

t202Timer: 2

TEICheckTimer: 5

N202: 3

LowAutoTei: 64

KeepL1Up: 2

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   You assign a MACSAP (Media Access Service Access Point) profile when adding a D Channel management path to define a collection of settings for the D Channel protocol stack. These settings describe the operating characteristics of the interface between LAPD and the physical layer.

Examples   The following example adds a MACSAP profile with default settings:

```
addmacsapprof 1
```

Related Commands

Command	Description
delmacsapprof	Delete a MACSAP profile
lsmacsapprof	List information about a MACSAP profile
lsmacsapprofs	List all MACSAP profiles
lsmacsapstat	List statistics for a MACSAP interface
lsmacsapstats	List MACSAP statistics

addreds

Add card redundancy.

addreds *PrimarySlot SecondarySlot*

Syntax Description

PrimarySlot	Physical location of the primary card in the chassis. Valid settings: 1-8 and 11-16.
SecondarySlot	Physical location of the secondary card in the chassis. Valid settings: 1-8 and 11-16.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Adds card redundancy between the primary and secondary slot. If the primary fails, the secondary takes over.

Examples

The following example makes card 3 the redundant card and card 1 the primary card.

```
addreds 1 3
```

Related Commands

Command	Description
delreds	Delete a card redundancy pair
lsreds	List redundancies
swcd	Switch to redundant NSC

addsess

Add an MGCP session manager.

addsess *SessionSetId GroupId SessionId LocalAddr LocalPort RemoteAddr RemotePort Priority*

Syntax Description

SessionSetId	The index of the session set to which the group containing the session manager belongs. Values: 1-6.
GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2.
SessionId	The index of this session. Values: 1 or 2
LocalAddr	The local IP address of the session.
LocalPort	Local UDP Port. Values: greater than 1024
RemoteAddr	Remote IP address of the session.
RemotePort	Remote UDP port. Values: greater than 1024
Priority	Session priority. Values: greater than or equal to 0

Defaults   *Priority:* 1

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines MGCP sessions are communication links between the MGX 8260 and the primary and secondary Media Gateway Controller. Sessions are members session groups, which in turn, are members of session sets. To ensure reliable operation, set up two sessions to each controller through two networks.

Examples   The following example adds session manager 1 to group 1 of set 1:

```
addsess 1 1 1 10.15.38.233 7007 10.15.38.234 7007
```

Related Commands

Command	Description
addsset	Add a session set
addsgrp	Add a session group
delsess	Delete a session manager
delsset	Delete a session set
delsgrp	Delete a session group

addsgrp

Add an MGCP session group.

addsgrp *GroupSetId GroupId*

Syntax Description

GroupSetId	The index of the set to which this group belongs. Values: 1-6
GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   MGCP session groups organize session managers into logical groups. A session group contains a collection of sessions that communicate with a single MGC.

Examples   The following example adds session group 1 to session set 1:

```
addsgrp 1 1
```

Related Commands

Command	Description
addsess	Add a session
addsset	Add a session set
delsess	Delete a session
delsset	Delete a session set
delsgrp	Delete a session group

addsonetln

Add a SONET line.

addsonetln *Location* [*numOfLines MediumType LoopConfig HCSmasking PayloadScrambling FrameScrambling TxClockSource*]

Syntax Description		
Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	numOfLines	The number of lines to add. Values: 1-4.
	MediumType	The type of circuit: 1=SONET 2=SDH (reserved for future use)
	LoopConfig	The loopback state: 1=No loop 2=Line loop 3=Serial loop 4=Parallel loop
	HCSmasking	The HCS masking state (reserved for future use)
	PayloadScrambling	The payload scrambling state: 1=Disable 2=Enable
	FrameScrambling	The frame scrambling state: 1=Disable 2=Enable
	TxClockSource	The clock source for the transmit signal: 1=Loop Timing, use the recovered receive clock 2=Local Timing, use the local clock 3=Through Timing (reserved for future use)

Defaults

numOfLines: 1

MediumType: 1

LoopConfig: 1

PayloadScrambling: 1

FrameScrambling: 1

TxClockSrc: 2

Command Modes   Security level 3

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines   Use this command to configure optical SONET/SDH interfaces on the OC-3 SCC and back card. Although the SCC may occupy physical slots 9 or 10, you always configure logical slot 9.

You can add a single line or a range of identically-configured lines with this command. The system adds lines one at a time and aborts on the first failure, even if subsequent additions could have succeeded. The system issues an error message for partially fulfilled requests.

Examples   The following example adds a SONET line with default settings:

```
addsonetln 9.1
```

Related Commands	Command	Description
	chsonetln	Change a SONET line
	delsonetln	Delete a SONET line
	lssonetln	List information about a SONET line
	lssonetlns	List information about all SONET lines

addsrt

Add static route

addsrt *Destination Slot.Line* [*RoutePriority*]

Syntax Description		
Destination		The IP address of a remote network with which you want a static route. The last byte of the IP number must be zero. For example, 127.2.4.0 is valid
Slot.Line		The slot and line number, delimited by a period, of the origin of the static route. Since the outgoing interface is always an Ethernet line, valid slots are 9-10 and valid lines are 1-4
RoutePriority		Priority for the route entry. Values: 1 - 10, 1 = highest

Defaults   *RoutePriority:* 1

Command Modes   Security level 3

Command History	Release	Modification
	1.0	This command was first introduced.

Usage Guidelines   Use to configure a static route from an MGX 8260 line to a network IP address. If the last byte of the destination address is not 0, the static route is not set. You can configure static routes for empty slots or non-existing lines, but the changes have no effect without the necessary hardware.

Examples   The following example configures a static route from slot 1 line 1 of the MGX 8260 chassis to IP address 12.1.1.0.

```
addesrt 12.1.1.0 9.1
```

Related Commands	Command	Description
	delsrt	Delete static route
	lssrt	List static route
	lssrts	List static routes

addsset

Add an MGCP session set.

addsset *SessSetId MinSlot MinLine MaxSlot MaxLine RedunMode*

Syntax Description

SessSetId	Session set index. Values: 1-6.
MinSlot	The minimum slot number within the MGX 8260 Media Gateway chassis assigned for this session set. Values: 1-8 and 11-16.
MinLine	The minimum line number assigned for this Session Set. Values: 1-168 for the BSC; 1-16 for the NSC.
MaxSlot	The maximum slot number within the MGX 8260 Media Gateway chassis assigned for this session set. Values: 1-8 and 11-16.
MaxLine	The maximum line number assigned for this session set. Values: 1-168 for the BSC; 1-16 for the NSC.
RedunMode	The redundancy mode. Values: 1 or 2 as follows.
	1=nonFaultTolerant, where the system can have one session group only to a single MGC
	2=faultTolerant, where the system can have one or two session groups to redundant MGCs

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Session sets contain a collection of session groups and managers that control a range of MGX 8260 lines. One or two session sets are adequate for a single MGX 8260 chassis.

Examples   The following example adds session set 1 for slots 1-168 of the BSC in slot 11:

```
addsset 1 11 1 11 168 1
```

Related Commands

Command	Description
addsess	Add a session manager
addsset	Add a session set
delsess	Delete a session manager

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■ **addsset**

Command	Description
delsset	Delete a session set
delsgrp	Delete a session group

addtmgr

Add trap manager.

addtmgr *Addr* [*Port Interface Com_String Bitmap*]

Syntax Description

Addr	The IP address of the SNMP manager who wants to receive trap events.
Port	UDP number of port to which the traps are transmitted.
Interface	The default interface for initially sending traps if the routing table has no trap manager. Values: 1, 2, 3. These values have the following names and meanings:
	1=scc-eth-if—The default system Ethernet management interface on SCC.
	2=inband-if—The in-band management interface on Fast Ethernet.
Com_String	SNMP community string for the trap manager.

Bitmap	A bitwise specification of trap categories to subscribe. Each bit represents a category of traps. Bit values: 1 = subscribe 0, = do not subscribe. Trap Subscription Bitmap specifications are:
	Bit 0=Major (trap severity selection)
	Bit 1=Minor (trap severity selection
	Bit 2=Information (trap severity selection)
	Bit 3=Shelf
	Bit 4=Card
	Bit 5=SNMP
	Bit 6=Dsx1 Line
	Bit 7=Dsx3 Line
	Bit 8=Sonet Line
	Bit 9=Ethernet Line
	Bit 10=Voice Port
	Bit 11=Ethernet Channel
	Bit 12=Voice Channel
	Bit 13=EMM
	Bit 14=Clock
	Bit 15=DSP
	Bit 16=DMCMAP
	Bit 17=ISDN
	Bit 18=MGCP
	Bit 19=Backhaul Session
	The first three bit positions indicate which trap severity categories they are interested in. If you specify severity without specifying any other trap categories, managers receive traps from all categories.

Defaults

Port: 162

Interface: 1

Com_String: "public"

Bitmap: 0

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added new traps

Usage Guidelines   Network administrators can receive email notifications for up to 20 trap events. Use this command to subscribe a manager to receive notification about specific trap events.

Examples   The following example subscribes the manager at address 10.1.1.10 and udp port 162 to receive minor and informational messages for cards and DS1 lines.

The bitmap is a binary number that represents the following settings:

Trap	dsx1line	SNMP	Card	Shelf	Information	Minor	Major
Bit Value	1	0	1	0	1	1	0
Bit Position	6	5	4	3	2	1	0

To use this bitmap, convert it to a decimal value and specify it as the last argument. Binary 1100110 is 86 decimal. Therefore, you enter the command as follows:

```
addtmgr 10.1.1.10 162 2 public 86
```

The 2 in the third argument sets the in-band interface as the default interface for sending traps when the routing table has no trap manager.

Related Commands

Command	Description
addcms	Add community string
chtmgr	Change trap manager
deltmgr	Delete trap manager
lstmgr	List trap manager
lstmgrs	List trap managers

addusp

Add user profile.

addusp *Name Access_Level*

Syntax Description

Name	The login name of the new user, expressed as a case-sensitive alphanumeric string of four to ten characters. Special characters such as @, #, and $ are allowed.
Access_Level	A value associated with a user profile that determines access rights to the MGX-8260 CLI and WebViewer.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   The MGX 8260 Media Gateway enforces security with user accounts and access levels. Users must log onto the MGX 8260 Media Gateway before performing any task, and authenticated users can perform only those tasks permitted by their access level. The MGX 8260 Media Gateway supports up to 20 user accounts, each with access privileges ranging from full control to guest. Initially, the password is the same as the user name, so instruct new users to change their password to a personal one using the **chpwd** command. The following table summarizes access levels:

Access Level	Account Type	Command Groups
1	SuperUser	Access all features
2	Administrator	Configure and view all features except user profiles and community strings
3	Provisioning	Configure and view system, port, lines, end points, and connections
4	Maintenance	Access selected level 3 commands
5	Operator	View system, port, lines, end points, and connections
6	Guest	View system, common lines and ports

Users can use commands that have an access level equal to or greater than their account access level. For example, a user account with an access level 4 can use all commands with access levels of 4, 5, and 6.

Examples   The following example adds a user named william with Administrator level privileges.

```
addusp william 2
```

Related Commands

Command	Description
chkey	Change file key
delusp	Delete user profile

addvport

Add voice port.

addvport *SlotNum PortNum LineNum DS0Num [RepititionNum WrapNum Dejitter DejitterBufLen Maxdj Mindj PacketLoading EchoTail]*

Syntax Description

SlotNum	The logical slot number of an NSC. Values: 1 to 16
PortNum	The logical port number for the new port. Values: 1 to 512
LineNum	The number of the DS1/E1 line for the voice port. Values: 1 to 16
DS0Num	The number of the DS0 within the DS1/E1 for the new port. Values: 1 to 24 for DS1 and 1 to 30 for E1.
RepititionNum	The number of ports to add. Values: 1 to 6944. This corresponds to 31 ports per line, 16 lines per NSC, and 14 NSCs.
WrapNum	The DS0 number at which to wrap to the next slot. Set this to the maximum number of DS0s the NSC in your configuration. For DS1 use 384 and for E1 use 480 with CAS or 496 without CAS. Values: 1 to 512
Dejitter	The desired state, disabled or enabled, of the dejitter buffer. Values: 1 or 2 for disabled and enabled, respectively.
DejitterBufLen	The initial length of the dejitter buffer, specified in multiples of 10 msec. Values: 1 through Maxdj.
Maxdj	The maximum length of the dejitter buffer, specified in multiples of 10 msec. Values: 1 through 50.
Mindj	The minimum length of the dejitter buffer, specified in multiples of 10 msec. Values: 1 through DejitterBufLen.
PacketLoading	The IP packet loading time for voice service, expressed in multiples of 10 msec. Values: 1 - 10.
EchoTail	The length of the echo cancel tail:
	1 = echo disabled
	2 = tail24ms—24 msecs
	3 = tail32ms—32 msecs
	4 = tail48ms—48 msecs
	5 = tail64ms—64 msecs
	6 = tail80ms—80 msecs
	6 = tail96ms—96 msecs
	7 = tail112ms—112 msecs
	8 = tail128ms—128 msecs

Defaults

ReptitionNum: 1

WrapNum: 384 for DS1, 480 for E1 (CAS on)

Dejitter: disabled

DejitterBufLen: 2

Maxdj: 50

Mindj: 1

PacketLoading: 1

EchoTail: 5

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added repetition and wrap arguments

Usage Guidelines   Use this command to add one or more voice ports. The DS1/E1 line must already exist before using this command.

Examples   For example, to add logical voice port 4 using DS0 4 of DS1 line 1 in slot 13, type the following command:

```
addvport 13 4 1 4
```

Related Commands

Command	Description
chvport	Change voice port
delvport	Delete voice port
lsvport	List voice port
lsvports	List voice ports

bye

Log out.

bye

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Type this command to log out from the MGX 8260 Media Gateway

Examples   The following command logs out.

```
bye
```

Related Commands

Command	Description
exit	Logs out from the MGX 8260 Media Gateway.
logout	Logs out from the MGX 8260 Media Gateway.

chcdif

Configure card interface.

chcdif *Card Mode*

Syntax Description

Card	The number of an NSC card.
Mode	Indicates whether the Narrowband Service Card (NSC) transmits and receives traffic through the back card or redirected through the backplane from the DC3 interface on the Distribution Matrix Card (DMC). Values: 1=back card 2=back plane 3=not applicable (no back card)

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the interface mode of the sixteen DS1 interfaces on an NSC. Changing the interface mode resets the card.

Examples

The following example changes the interface mode of card 1 to back plane mode and consequently resets the NSC.

```
chcdif 1 2
```

Related Commands

Command	Description
clrcdcnf	Clear configuration of a card

chcsbaynum

Change control server bay number (reserved for future use).

chcsbaynum *Number*

Syntax Description

Number	A string that represents the CS bay number. Values: a string of exactly 8 characters.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Configures the string that identifies the bay number of the MCS.

Examples

The following example changes the bay number of the call server to 2.

```
chcsbaynum 00000002
```

Related Commands

Command	Description
chcsid	Change control server system ID

chcsid

Change control server system ID (reserved for future use).

chcsid *ID*

Syntax Description

ID	The system ID of the MCS. Value: user-defined text string, up to 24 characters

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to configure a user-defined identifier for the MCS.

Examples   The following example changes the bay number of the call server to 2.

```
chcsid 1234567890
```

Related Commands

Command	Description
chcsbaynum	Change control server bay number

chcsnumfor

Specify the MCS numbering format for modules, lines and channels (reserved for future use).

chcsnumfor *format*

Syntax Description

format	Specification to start module, line, and channel numbering at 0 or 1.
	1 = One-based
	2 = Zero-based

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Specifies the MCS interpretation of module, line and channel numbers on an MGX 8260 Media Gateway. For example, you can specify DS0 numbers as 0-23 or 1-24

Examples

The following example specifies a zero-based number format.

```
chcsnumfor 2
```

Related Commands

Command	Description
chcsbaynum	Change control server bay number

chcstype

Change control server type (reserved for future use).

chcstype *type*

Syntax Description

type	An alphanumeric string. The string must be exactly 9 characters in length.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Configures the string used to identify the manufacturer and model of the MCS.

Examples

The following example sets the string identifier to "CiscoType"

```
chcstype CiscoType
```

Related Commands

Command	Description
chcsbaynum	Change control server bay number

chdate

Change date.

chdate *date*

Syntax Description

date	The system date expressed as mm/dd/yyyy. Values: 1970 - 2099

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure or change the system date.

Examples

The following example sets the system date to January 14, 2001.

```
chdate 01/14/2001
```

Related Commands

Command	Description
chtime	Change time
chtimezn	Change system time zone
lsdate	List date

chds1alm

Change DS1 alarm severity and thresholds.

> **chds1alm** *Location* [*Red_Severity RAI_Severity Perf_Alarm_Severity LCV_15 LCV_24 LES_15 LES_24 LESES_15 LESES_24 SEFS_15 SEFS_24 PSAS_15 PSAS_24 UAS_15 UAS_24 PCV_15 PCV_24 PES_15 PES_24 SES_15 SES_24 BES_15 BES_24 PCSS_15 PCSS_24*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the DS1 line
	Red_Severity	The near end LOF indication, either minor or major. Values: 1 or 2, respectively.
	RAI_Severity	The remote alarm indication, either minor or major. Values: 1 or 2, respectively.
	Perf_Alarm_Severity	The performance alarm indication, either minor or major. The performance alarm is set if any of the thresholds is exceeded. Values: 1 or 2, respectively.
	LCV_15 *LCV_24*	The line threshold for code violations in a 15-minute window or sliding 24-hour window. A code violation is either a bipolar violation or excessive zeroes event.
	LES_15 *LES_24*	The line threshold for errored seconds in a 15-minute window or sliding 24-hour window. An errored second is any second with at least one code violation.
	LESES_15 *LESES_24*	The line threshold for severely errored seconds in a 15-minute window or sliding 24-hour window. A severely errored second is any second with 15 or more code violations.
	SEFS_15 *SEFS_24*	The threshold for severely errored framing seconds in a 15-minute window or sliding 24-hour window. A severely errored framing second is a count of one-second intervals containing one or more SEF events.
	PSAS_15 *PSAS_24*	The threshold for PSA seconds in a 15-minute window or sliding 24-hour window. An alarm indication signal second is a count of one-second intervals containing one or more incoming AISs.
	UAS_15 *UAS_24*	The threshold for unavailable seconds in a 15-minute window or sliding 24-hour window. Unavailable seconds represent the number of seconds that the interface is unavailable.
	PCV_15 *PCV_24*	The threshold for path code violations in a 15-minute window or sliding 24-hour window.
	PES_15 *PES_24*	The threshold for path errored seconds in a 15-minute window or sliding 24-hour window.
	PSES_15 *PSES_24*	The threshold for path severely errored seconds in a 15-minute window or sliding 24-hour window.
	BES_15 *BES_24*	The threshold for bursty errored seconds in a 15-minute window or sliding 24-hour window.
	PCSS_15 *PCSs_24*	The threshold for path controlled slip seconds in a 15-minute window or sliding 24-hour window.

Defaults   No default behavior or values. The following defaults apply to a new DS1 line:

Red_Severity: 2

RAI_Severity: 1

Perf_Alarm_Severity: 1

LCV_15: 14

LCV_24: 134

LES_15: 12

LES_24: 121

LSES_15: 10

LSES_24: 100

SEFS_15: 2

SEFS_24: 17

PSAS_15: 2

PSAS_24: 17

UAS_15: 10

UAS_24: 10

PCV_15: 35

PCV_24: 50

PES_15:35

PES_24:50

PSES_15: 35

PSES_24: 50

BES_15: 35

BES_24: 50

PCSS_15: 35

PCSS_24: 50

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added new alarms

Usage Guidelines Use this command to change the configuration settings for alarm severity, performance integration period, and thresholds for various error conditions, such as LCV, LES, and LSES. All counter thresholds are integers greater than zero. For details, refer to Table 6-1 on page 6-6. If you do not enter optional parameters for a threshold, that threshold is not changed.

Examples   The following example changes the 15-minute LCV thresholds for line 1 of slot 1 from the default value to 15.

```
chds1alm 1.1 # # # 15
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 line current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 line total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

chds1ln

Change DS1 (T1 or E1) lines.

chds1ln *Location numOfLines* [*LineType LineCoding SendCode LoopConfig LineSignalMode XmitClkSrc SignalBits IdleCode*]

Syntax Description	*Location*	The slot and line number, delimited by a period, of the new DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:
		• NSC: 1-8 and 11-16
		• BSC: 11-16
		Valid line numbers:
		• NSC: 1-16
		• BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.
		DS3 Line Number DS1 Line Number
		501 1-28
		502 29-56
		503 57-84
		504 85-112
		505 113-140
		506 141-168
	numOfLines	Number of lines to add. The MGX 8260 stops adding lines at the first failure. Values: 1-1136.
	LineType	The type of framing. The T1 values are:
		2=dsx1ESF—means use Extended superframe DS1
		3=dsx1D4—means use AT&T D4 format
		The E1 values are:
		4=dsx1E1—means use CCITT Recommendation G.704, Table 4a
		5=dsx1E1-CRC—means use CCITT Recommendation G.704, Table 4b
		6=dsx1E1-MF—means use G.704 table 4a with TS16 multi-framing enabled
		7=dsx1E1-CRC-MF—means use G.704 table 4b with TS16 multi-framing enabled

LineCoding	The line coding format. Not applicable for T1 lines added to the BSC. The valid entries are:
	1=dsx1JBZS (reserved for future use)
	2=dsx1B8ZS (T1 lines only)
	3=dsx1HDB3 (E1 lines only)
	4=dsx1ZBTSI (reserved for future use)
	5=dsx1AMI
	6=other (reserved for future use)
SendCode	The type of code being sent across the DS1 interface by the device. Values are 1 - 8 and have the following names:
	1=dsx1SendNoCode
	2=dsx1SendLineCode (T1 lines only)
	3=dsx1SendPayloadCode (reserved for future use)
	4=dsx1SendResetCode (T1 lines only)
	5=dsx1SendQRS (T1 lines only)
	6=dsx1Send511Pattern (T1 or E1)
	7=dsx1Send3in24Pattern (T1 or E1)
	8=dsx1Send1in16 (T1 lines only)
LoopConfig	The loopback configuration of the DS1 interface. Values are 1 - 4 and have the following names:
	1=dsx1NoLoop
	2=dsx1PayloadLoop
	3=dsx1LineLoop
	4=dsx1OtherLoop, means local loopback on this device
LineSignalMode	Signal mode for transmit direction. In the receive direction, the mode is always set to robbed bit (2). Values are 1 - 4 and have the following names and meanings:
	1=none—means reserve no bits and set channel bandwidth to 64 kbps.
	2=robbedBit—applies to Channel Associated Signaling. Use a 56 kpps channel for this mode. You can select ABCD bit encoding, but the MGX 8260 does not detect A/B signalling. Echo cancellation is enabled at set-up unless a fax tone is detected.
	3=bitOriented—means E1 Channel Associated Signaling
	4=messageOriented=means Common Channel Signaling either on channel 16 of an E1 link or channel 24 of a T1 (reserved for future use)
XmitClkSrc	The clock source for the transmit signal:
	1=Loop Timing—use the recovered receive clock (reserved for future use)
	2=Local Timing—use the local clock
	3=Through Timing (reserved for future use)

SignalBits	The 4-bit signaling pattern, represented by an integer:
	1=0000
	2=0001
	3=0010
	4=0011
	5=0100
	6=0101
	. . .
	16=1111
IdleCode	The code that is sent on each idle DS0 within the DS1 line. Values: 0-255

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added E1 lines

Usage Guidelines   Use this command to reconfigure one or more DS1 lines on NSC or BSC circuit cards. NSCs support both T1 and E1 lines, but you must configure the entire chassis for one type or the other. The system returns an error if you attempt to apply line changes that conflict with the chassis mode. BSCs support T1 channels only.

For example, the following command activates a local diagnosis loopback on line 1 of logical slot 1:

```
chds1ln 1.1 # # # # 4
```

The following example configures 3 DS1 lines beginning at slot 1 line 1 to have a send code of dsx1SendPayloadCode.

```
chds1ln 1.1 3 # # 3
```

Related Commands

Command	Description
adddds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
clrds1lnst	Clear DS1 line statistics
chsyslnmd	Change the DS1 line mode
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds

Command	Description
lsds1curst	List DS1 line current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 line total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines
offbertds1	Stop BERT on DS1
onbertds1	Start BERT on DS1

chds1lnecho

Configure the echo canceller for a DS1 line.

chds1lnecho *Location State*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

    • NSC: 1-8 and 11-16

    • BSC: 11-16

Valid line numbers:

    • NSC: 1-16

    • BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

State	The enabled or disabled state of the echo canceller for each line. Values:

1 = disable

2 = enable

3 = not applicable

Defaults

State: 1

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to enable or disable the echo canceller for the specified DS1 line. You must activate IPDC on BSC cards to enable or disable echo cancelling. Under MGCP, you can't configure echo cancelling for BSC or NSC cards, so State is fixed at 3 (not applicable).

Examples   The following example enables echo cancelling on slot 12, line 1 of the BSC card.

chds1lnecho 12.1 1

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port

chds3alm

Change DS3 alarm severities and performance alarm thresholds.

chds3alm *Location RedSeverity RAISeverity PerfAlmSeverity NEAlarmUpCount*
  NEAlarmDownCount NEAlarmThreshold LCV15MinThreshold LCV24HrThreshold
  LES15MinThreshold LES24HrThreshold PCV15MinThreshold PCV24HrThreshold
  PES15MinThreshold PES24HrThreshold PSES15MinThreshold PSES24HrThreshold
  SEFS15MinThreshold SEFS24HrThreshold AISS15MinThreshold AISS24HrThreshold
  UAS15MinThreshold UAS24HrThreshold CCV15MinThreshold CCV24HrThreshold
  CES15MinThreshold CES24HrThreshold CSES15MinThreshold CSES24HrThreshold

Syntax Description	*Location*	The slot and line number, delimited by a period, of the DS3 line. Valid slot numbers:
		BSC: 11-16
		DMC: 7 or 8 (reserved for future use)
		Valid line numbers:
		BSC: 501-506
		DMC: 1-6 (reserved for future use)
	RedSeverity	The RED alarm severity. Values: 1 or 0 (major or minor, respectively).
	RAISeverity	The RAI alarm severity. Values: 1 or 0 (major or minor, respectively).
	PerfAlmSeverity	The performance alarm severity. The performance alarm is set if any of the thresholds is exceeded.Values: 1 or 0 (major or minor, respectively).
	Alarm Thresholds:	
	NEAlarmUpCount	Increment value for the Near End alarm integration counters. The local alarms are LOS and LOF. Values: Integers > zero.
	NEAlarmDownCount	Decrement value for the Near End alarm integration counters. The local alarms are LOS and LOF. Values: Integers > zero.
	NEAlarmThreshold	Value of the alarm integration counter that raises an alarm. Values: Integers > zero.
	LCV15MinThreshold *LCV24HrThreshold*	The threshold for line coding violations in a 15-minute window or sliding 24-hour window.
	LES15MinThreshold *LES24HrThreshold*	The threshold for line errored seconds in a 15-minute window or sliding 24-hour window.
	PCV15MinThreshold *PCV24HrThreshold*	The threshold for P-bit coding violations in a 15-minute window or sliding 24-hour window.
	PES15MinThreshold *PES24HrThreshold*	The threshold for P-bit errored seconds in a 15-minute window or sliding 24-hour window.
	PSES15MinThreshold *PSES24HrThreshold*	The threshold for P-bit severely errored seconds in a 15-minute window or sliding 24-hour window.
	SEFS15MinThreshold *SEFS24HrThreshold*	The threshold for severely errored framing seconds in a 15-minute window or sliding 24-hour window.

AISS15MinThreshold	The threshold for alarm indication signals in a 15-minute window or sliding 24-hour window.
AISS24HrThreshold	
UAS15MinThreshold	The threshold for unavailable seconds in a 15-minute window or sliding 24-hour window.
UAS24HrThreshold	
CCV15MinThreshold	The threshold for C-bit coding violations in a 15-minute window or sliding 24-hour window.
CCV24HrThreshold	
CES15MinThreshold	The threshold for C-bit errored seconds in a 15-minute window or sliding 24-hour window.
CES24HrThreshold	
CSES15MinThreshold	The threshold for C-bit severely errored seconds in a 15-minute window or sliding 24-hour window.
CSES24HrThreshold	

Defaults   No default behavior or values. The following defaults apply to new DS3 lines:

RedSeverity: 2

RAISeverity: 1

PerfAlmSeverity: 1

NEAlarmUpCount: 6

NEAlarmDownCount: 1

NEAlarmThreshold: none

LCV15MinThreshold: 14

LCV24HrThreshold: 134

LES15MinThreshold: 12

LES24HrThreshold: 121

PCV15MinThreshold: 10

PCV24HrThreshold: 10

PES15MinThreshold: 10

PES24HrThreshold: 10

PSES15MinThreshold: 10

PSES24HrThreshold: 10

SEFS15MinThreshold: 2

SEFS24HrThreshold: 17

AISS15MinThreshold: 10

AISS24HrThreshold: 10

UAS15MinThreshold: 10

UAS24HrThreshold: 10

CCV15MinThreshold: 10

CCV24HrThreshold: 10

CES15MinThreshold: 10

CES24HrThreshold: 10

SEFS15MinThreshold: 10

CSES24HrThreshold: 10

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card configuration - no functional change

Usage Guidelines   Use this command to change alarm thresholds. For details on threshold counts, refer to Table 6-3 on page 6-14.

Examples   The following example changes the dsx3PerfAlmSeverity at DS3 line at slot 7 line 1 to major (2).

```
chds3alm 7.1 # # 2
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3curst	List DS3 current statistics
lsds3intst	List DS3 interval statistics
lsds3ln	List DS3 line
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

chds3ln

Change DS3 line.

chds3ln *Location numOfLines* [*LineType LineCoding SendCode LoopConfig XmitClkSrc Cable*]

Syntax Description	*Location*	The slot and line number, delimited by a period, of the DS3 line.
		Valid slot numbers:
		BSC: 11-16
		DMC: 7 or 8 (reserved for future use)
		Valid line numbers:
		BSC: 501-506
		DMC: 1-6 (reserved for future use)
	numOfLines	Number of lines to change. Values: 1-76.
	LineType	The type of DS3 C-bit, which affects the interpretation of the usage and error statistics. Values are 1 - 8 and have the following names:
		1=dsx3other (reserved for future use)
		2=dsx3SYNTRAN (reserved for future use)
		3=dsx3M23
		4=dsx3CbitParity (reserved for future use)
		5=dsx3ClearChannel (reserved for future use)
		6=e3other (reserved for future use)
		7=e3Framed (reserved for future use)
		8=e3Plcp (reserved for future use)
	LineCoding	Zero suppression used on this interface.The line coding dsx3B3ZS and e3HDB3 refers to patterns of normal bits and bipolar violations that are used to replace sequences of zero bits of a specified length. Values are 1 - 3 and have the following names:
		1=dsx3Other
		2=dsx3B3ZS
		3=e3HDB3 (reserved for future use)

SendCode	The type of code being sent across the DS3/E3 interface by the device. (Optional for E3 interfaces.) Values are 1 - 6 and have the following names and meanings:	
	1=dsx3SendNoCode, sending looped or normal data	
	2=dsx3SendLineCode, sending a request for a line loopback	
	3=dsx3SendPayloadCode, sending a request for a payload loopback (all DS1/E1s in a DS3/E3 frame)	
	4=dsx3SendResetCode, sending a loopback deactivation request	
	5=dsx3SendDS1LoopCode, requesting loopback for a particular DS1/E1 within a DS3 frame	
	6=dsx3SendTestPattern, sending a test pattern	
LoopConfig	The loopback configuration of the DS3/E3 interface. Values are 1 - 4 and have the following names:	
	1=dsx3NoLoop	
	2=dsx3PayloadLoop	
	3=dsx3LineLoop	
	4=dsx3OtherLoop	
XmitClkSrc	The transmit clock source, which is derived from the recovered receive clock of another DS3 interface. Values are 1-3 and have the following names:	
	1=loopTiming	
	2=localTiming	
	3=throughTiming	
Cable	One of the following ranges of lengths for the cable:	
	1=1 to 225 ft	
	2=225 to 300 ft	
	3=300 to 450 ft	
	4=450 to 900 ft	

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card configuration - no functional change

Usage Guidelines   Use this command to configure a DS3 line. If you do not enter optional parameters, no change is made.

Examples   The following command loops line 2 on DMC slot 7:

```
chds1ln 7.2 # # # # 2
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

che1alm15

Change 15-minute E1 alarm thresholds.

che1alm15 *Location* [*LCV_15 LES_15 UAS_15 FE_ESR_15 FE_SESR_15 FEBE_ESR_15 FEBE_SESR_15 CRC_ESR_15 CRC_SESR_15 ES-ESR_15 SES_ESR_15 ES_15 SES_15 BE_15 PCV_15 CSS_15*]

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line
LCV_15	The threshold for LCV (Line Code Violations). A code violation is either a bipolar violation or excessive zeroes event.
LES_15	The threshold for LES (Line Errored Seconds). An errored second is any second with at least one code violation.
UAS_15	The threshold for UAS (Unavailable Seconds). UAS represents the number of seconds that the interface is unavailable in a fixed measurement interval.
FE_ESR_15	The far end threshold for ESR (Errored Seconds Ratio) due to framing errors. ESR is the ratio of errored seconds to total seconds in a fixed measurement interval.
FE_SESR_15	The far end threshold for SESR (Severely Errored Seconds) due to framing errors. SESR is the ratio of severely errored seconds to total seconds in a fixed measurement interval.
FEBE_ESR_15	The far end block error threshold for ESR.
FEBE_SESR_15	The far end block error threshold for SESR.
CRC_ESR_15	The threshold for ESR resulting from CRC errors.
CRC_SESR_15	The threshold for SESR resulting from CRC errors.
ES-ESR_15	The threshold for ESR resulting from ES errors.
SES_ESR_15	The threshold for ESR resulting from SES errors.
ES_15	The threshold for ES (Errored Seconds).
SES_15	The threshold for SES (Severely Errored Seconds).
BE_15	The threshold for BE (Burst Errors)
PCV_15	The threshold for PCV (Path Coding Violations)
CSS_15	The threshold for CSS (Controlled Slip Seconds)

Defaults

No default behavior or values. The following defaults apply to a new E1 line:

LCV_15: 14

LES_15: 12

UAS_15: 10

FE_ESR_15: 800

FE_SESR_15: 20

FEBE_ESR_15: 800

FEBE_SESR_15: 20

CRC_ESR_15: 800

CRC_SESR_15: 20

ES_ESR_15:800

SES_ESR_15: 20

ES_15:35

SES_15: 35

BE_15: 35

PCV_15: 14

CSS_15: 35

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to change the 15-hour thresholds for various error conditions, such as LCV, LES, and LSES. All counter thresholds are integers greater than zero. If you do not enter optional parameters for a threshold, that threshold is not changed.

Examples   The following example changes the threshold for LCV on line 1 of slot 1 from the default values to 150.

```
che1alm15 1.1 # # # 150
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
che1alm24	Change E1 alarm thresholds
delds1ln	Delete DS1 line
lse1alm	List E1 alarm thresholds
lse1curst	List E1 line current statistics
lse1cursts	List E1 current statistics
lse1intst	List E1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lse1lnst	List E1 line statistics
lse1totst	List E1 line total statistics
lse1totsts	List E1 total statistics
lslns	List existing lines

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che1alm24

Change 24-hour E1 alarm thresholds.

che1alm24 *Location* [*LCV_24 LES_24 UAS_24 FE_ESR_24 FE_SESR_24 FEBE_ESR_24 FEBE_SESR_24 CRC_ESR_24 CRC_SESR_24 ES-ESR_24 SES_ESR_24 ES_24 SES_24 BE_24 PCV_24 CSS_24*]

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line
LCV_24	The threshold for LCV (Line Code Violations). A code violation is either a bipolar violation or excessive zeroes event.
LES_24	The threshold for LES (Line Errored Seconds). An errored second is any second with at least one code violation.
UAS_24	The threshold for UAS (Unavailable Seconds). UAS represents the number of seconds that the interface is unavailable in a fixed measurement interval.
FE_ESR_24	The far end threshold for ESR (Errored Seconds Ratio) due to framing errors. ESR is the ratio of errored seconds to total seconds in a fixed measurement interval.
FE_SESR_24	The far end threshold for SESR (Severely Errored Seconds) due to framing errors. SESR is the ratio of severely errored seconds to total seconds in a fixed measurement interval.
FEBE_ESR_24	The far end block error threshold for ESR.
FEBE_SESR_24	The far end block error threshold for SESR.
CRC_ESR_24	The threshold for ESR resulting from CRC errors.
CRC_SESR_24	The threshold for SESR resulting from CRC errors.
ES-ESR_24	The threshold for ESR resulting from ES errors.
SES_ESR_24	The threshold for ESR resulting from SES errors.
ES_24	The threshold for ES (Errored Seconds).
SES_24	The threshold for SES (Severely Errored Seconds).
BE_24	The threshold for BE (Burst Errors)
PCV_24	The threshold for PCV (Path Coding Violations)
CSS_24	The threshold for CSS (Controlled Slip Seconds)

Defaults   No default behavior or values. The following defaults apply to a new E1 line:

LCV_24: 134

LES_24: 121

UAS_24: 10

FE_ESR_24: 800

FE_SESR_24: 20

FEBE_ESR_24: 800

FEBE_SESR_24: 20

CRC_ESR_24: 800

CRC_SESR_24: 20

ES_ESR_24:800

SES_ESR_24: 20

ES_24: 15: 50

SES_24: 50

BE_24: 50

PCV_24: 50

CSS_24: 50

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to change the 24-hour thresholds for various error conditions, such as LCV, LES, and LSES. All counter thresholds are integers greater than zero. If you do not enter optional parameters for a threshold, that threshold is not changed.

Examples   The following example changes the threshold for LCV on line 1 of slot 1 from the default values to 150.

```
che1alm24 1.1 # # # 150
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1ln	Change DS1 line
che1alm15	Change E1 alarm thresholds
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lse1alm	List E1 alarm thresholds
lse1curst	List E1 line current statistics
lse1cursts	List E1 current statistics
lse1intst	List E1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lse1lnst	List E1 line statistics
lse1totst	List E1 line total statistics
lse1totsts	List E1 total statistics
lslns	List existing lines

che1almsev

Change E1 alarm severity.

> **che1almsev** *Location* [*Red_Severity RAI_Severity RMAI_Severity TS16_Severity Perf_Alarm_Severity*]

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line
Red_Severity	The near end LOF indication, either minor or major. Values: 1 or 2, respectively.
RAI_Severity	The remote alarm indication, either minor or major. Values: 1 or 2, respectively.
RMAI_Severity	The RMAI alarm indication, either minor or major. Values: 1 or 2, respectively.
TS16_Severity	The TS16 alarm indication, either minor or major. Values: 1 or 2, respectively.
Perf_Alarm_Severity	The performance alarm indication, either minor or major. The performance alarm is set if any of the thresholds is exceeded. Values: 1 or 2, respectively.

Defaults

No default behavior or values. The following defaults apply to a new DS1 line:

Red_Severity: 2

RAI_Severity: 1

RMAI_Severity: 1

TS16_Severity: 1

Perf_Alarm_Severity: 1

Command Modes

Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to change the alarm severity indication for various alarm conditions, such as red alarm and performance alarm. If you do not enter optional parameters for a threshold, that threshold is not changed.

Examples

The following example changes the red alarm severity on line 1 of slot 1 from the default value to minor.

```
che1almsev 1.1 1
```

Related Commands	Command	Description
	addds1ln	Add DS1 line
	chds1ln	Change DS1 line
	che1alm15	Change 15-minute E1 alarm thresholds
	che1alm24	Change 24-hour E1 alarm thresholds
	clrds1lnst	Clear DS1 line statistics
	delds1ln	Delete DS1 line
	lse1alm	List E1 alarm thresholds
	lse1curst	List E1 line current statistics
	lse1cursts	List E1 current statistics
	lse1intst	List E1 interval statistics
	lsds1ln	List DS1 line
	lsds1lns	List DS1 lines
	lse1lnst	List E1 line statistics
	lse1totst	List E1 line total statistics
	lse1totsts	List E1 total statistics
	lslns	List existing lines

chem

Configure email registration.

chem [*EmailServerDomain EmailServerIPAddr SourceEmailAddr*]

Syntax Description

EmailServerDomain	The domain name of the email server on your network. Values: A text string, maximum 30 characters.
EmailServerIPAddr	The IP address of the email server in standard IP dot notation. The 0.0.0.0 setting disables email notifications. Any valid IP address enables email notifications.
SourceEmailAddr	The 'from' email address for messages from the MGX 8260 Media Gateway. Values: A text string, maximum 40 characters. For example, node1@cisco.com.

Defaults

EmailServerIPAddr: 0.0.0.0

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure email server information and the source email address for receiving alerts about SNMP traps. You must configure the email server IP address correctly enable email alerts. If one or more fields of the IP address exceeds 255, SNMP stores the address as 255.255.255.255 and the MGX 8260 Media Gateway disables email alerts.

Examples

The following example configures email from server domain WORKGROUP and server IP address 10.10.1.10 with a 'from' email address of finance2@bank.com.

```
chem WORKGROUP 10.10.1.10 finance2@bank.com
```

Related Commands

Command	Description
addereg	Add email registration
chereg	Change email registration
delereg	Delete email registration
lsem	List email server
lsereg	List entry registered
lseregs	List registered email alerts

chereg

Change email registration.

chereg *Index EmailAddress Trap#1* [*Trap#2 ... Trap#20*]

Syntax Description

Index	Position of the email address in the SnmpEmailRegTable. Values: integer, 1-10.
EmailAddress	The email address, up to 40 characters, of the person who wants to receive email about traps.
Trap#n	One to twenty existing trap numbers.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to change email registration on as many as 20 traps, the maximum that are monitored. You change an email registration entry in the same manner as you add an email registration entry.

Examples   The following example changes the email address at index 52 to johnt@hal to receive alerts when events are raised by traps 1 and 2.

```
chereg 9 johnt@hal 1000 1001
```

Related Commands

Command	Description
addereg	Add email registration
chem	Configure email registration
delereg	Delete email registration
lsem	List email server
lsereg	List entry registered
lseregs	List registered email alerts

chethln

Change Fast Ethernet line.

chethln *Location* [*Gway_Addr RDP Mask Mode*]

Syntax Description

Location	The slot and line number, delimited by a period, of the Ethernet line. Values: Slot = 9, Line = 1-4.
Gway_Addr	The IP address of the primary gateway for the interface.
RDP	The state of the Router Discovery Protocol. Values: 1 = disabled, 2 = enabled.
Mask	The subnet mask in dotted notation a.b.c.d.
Mode	The duplex mode of the line. Values: 1 = Half duplex, 2 = Full duplex.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to change an Ethernet interface on the Fast Ethernet SCC and back card.

Examples   Tor example, the following command enables RDP but leaves other parameters unchanged on Fast Ethernet line 1 in slot 9:

```
chethln 9.1 # 2
```

Related Commands

Command	Description
addethln	Add Ethernet line
delethln	Delete Ethernet line
upethln	Activate Ethernet line
dnethln	DeActivate Ethernet line
lsethln	List Ethernet line
lsethlns	List Ethernet Lines

chgw

Specify a gateway router.

chgw *Address*

Syntax Description	*Address*	An IP address in dotted notation w.x.y.z

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the gateway IP address for management traffic. The system uses this gateway to route management traffic outside the local subnet.

Examples   The following example configures the gateway IP address.

```
chgw 10.2.2.1
```

Related Commands

Command	Description
chsysip1	Change system IP1 address
chsysip2	Change system IP2 address
lsmgips	List management IP addresses

chibip

Configure in-band IP.

chibip *Address Mask*

Syntax Description

Address	An IP address in dotted notation w.x.y.z
Mask	A subnet mask in dotted notation a.b.c.d

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the IP address and mask of the in-band system management interface. Do not set the in-band IP address to 0.0.0.0.

Examples

The following example configures the IP address, mask, and gateway of the in-band system management interface.

```
chibip 10.2.2.5 255.255.255.0
```

Related Commands

Command	Description
chsysip1	Change system IP1 address
chsysip2	Change system IP2 address
lsmgips	List management IP addresses

chidletm

Change idle time before session termination.

chidletm *idleTime*

Syntax Description

idleTime	The idle time in minutes. Values: 0 - 2147483647. 0 = infinity.

Defaults

No default behavior or values.

Command Modes

Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to change the amount of time allowed for no keyboard input. When the time expires, the session terminates.

Examples

The following example changes the idle time to 15 minutes.

```
chidletm 15
```

chipdccot

Change IPDC COTs.

chipdccot *rcot tcot*

Syntax Description

rcot	IPDC COT receive tone. Values: co1 (2010 Hz) or co2 (1780 Hz)
tcot	IPDC COT transmit tone. Values: 1 = co1; 2 = co2

Defaults

rcot: 1

tcot: 2

Command Modes

Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to configure IPDC COTs. For the transponder COT, when the media gateway controller does not supply the tones, the default tone the gateway should receive the default COT receive tone and transmit the default COT transmit tone.

Examples

The following example configures the IPDC COT to receive co2 and transmit co1.

```
chipdccot 2 1
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chpseudoip	Change pseudo IP address

Command	Description
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
chds1lnecho	Configure DS1 line echo cancelling

chipdcgwip

Change IPDC gateway IP and TCP port.

chipdcgwip *ip port*

Syntax Description

ip	The IP address of gateway for MSCP link.
port	The TCP Port number of gateway for MSCP link. This port number cannot be a well-known port number. Values: 1025 - 65535. Default: 5000

Defaults

port: 5000

Command Modes

Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to configure.When you modify the gateway IP address, you must also change the related TCP port number.

Examples

The following example configures the Soft Switch gateway IP address and TCP port.

```
chipdcgwip 1025 6000
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration

Command	Description
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcmaxm

Change IPDC maximum modules.

chipdcmaxm *num*

Syntax Description

num	Maximum number of modules (slot cards) supported. Values: integer from 1 - 16

Defaults

num: 16

Command Modes

Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to set the maximum number of modules.

Examples

The following example sets the maximum number of modules to 10.

```
chipdcmaxm 10
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcpssip

Change IP Device Control (IPDC) primary Soft Switch IP and TCP port.

chipdcpssip *ip port*

Syntax Description

ip	The primary Soft Switch IP address.
port	The primary Soft Switch TCP Port. This port number cannot be a well-known port number. Values: 1025 - 65535. Default: 5000

Defaults   *port:* 5000

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the primary Soft Switch IPDC. If you the primary Soft Switch IP Address, change the related, primary TCP port also.

Examples   The following example configures the primary Soft Switch IP address and TCP port.

```
chipdcpssip 10.1.1.1 1026
```

Related Commands

Command	Description
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration

Command	Description
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcssadm

Change IPDC administrative status.

chipdcssadm *primary secondary downtime*

Syntax Description	*primary*	The administrative status of link with the primary Soft Switch. Values:
		1=down, disconnect the current call server
		2=up, connect the current call server
		3=graceful disconnect, disconnect the current call server after the time specified by *downtime*. (reserved for future use)
	secondary	The administrative status of link with the secondary Soft Switch. Values:
		1=down, disconnect the current call server
		2=up, connect the current call server
		3=graceful disconnect, disconnect the current call server after the time specified by *downtime*. (reserved for future use)
	downtime	The graceful disconnect time for both Soft Switches. Value: 0 only (no graceful disconnect)

Defaults

primary: 1

secondary: 1

downtime: 0

Command Modes   Security level 2

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines   Use this command to connect or disconnect the primary or secondary IPDC administrative status. If the downtime is set to 0, the link is disconnected immediately. If the downtime is set to greater than 0, the Soft Switch disconnects in the time specified.

Examples   The following example sets the administrative status of the primary IPDC Soft Switch down.

```
chipdcssadm 1
```

chipdcssbaynum

Change IPDC bay number.

chipdcssbaynum *num*

Syntax Description

num	The number associated with gateway being controlled. A string of exactly 8 characters.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to assign a bay number to the IPDC.

Examples   The following example configures the bay number.

```
chipdcssbaynum NUM45678
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcsshlth

Change IPDC health check.

chipdcsshlth *admp adms dntime*

Syntax Description		
	admp	Enable or disable the link health check for the primary Soft Switch. Values: 1=enable; 2=disable
	adms	Enable or disable the link health check for the secondary Soft Switch. Values: 1=enable; 2=disable
	dntime	The time to wait before disabling the link health check. Values: 400 to 10000 msec

Defaults

admp: 1

adms: 1

dntime: 1000

Command Modes   Security level 2

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines   Use this command to enable the primary or secondary link health check.

Examples   The following example enables the primary link health check in 200 msec.

```
chipdcsshlth 1 200
```

Related Commands	Command	Description
	chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
	chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
	chipdcgwip	Change IPDC gateway IP and TCP port
	chipdcssid	Change IPDC system ID
	chipdcsstype	Change IPDC system type
	chipdcssbaynum	Change IPDC Bay Number
	chipdcmaxm	Change IPDC Maximum Modules
	chipdcssnumfor	Change IPDC Numbering format
	chipdcssadm	Change IPDC Admin Status

Command	Description
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcssid

Change IPDC system Id.

   chipdcssid *ID*

Syntax Description

ID	Identifier of the gateway being controlled by IPDC protocol, a string from 0 to 24 characters.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the IPDC system identifier.

Examples   The following example configures the IPDC system Id to 15.

```
chipdcssid 15
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcssnumfor

Change IPDC numbering format.

chipdcssnumfor *format*

Syntax Description

format	The format that determines the Soft Switch interpretation of module, line, and channel numbers on an MGX 8260. Values: 1= 0-base; 2=1-base.

Defaults

format: 1

Command Modes

Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to set the IPDC numbering format.

Examples

The following example sets the IPDC numbering format to 1-base.

```
chipdcssnumfor 2
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcsssip

Change IPDC secondary Soft Switch IP and TCP port.

chipdcsssip *ip port*

Syntax Description	*ip*	The secondary Soft Switch IP address.
	port	The secondary Soft Switch TCP port. This port number cannot be a well-known port number. Values: 1025 - 65535. Default: 5000

Defaults   *port:* 5000

Command Modes   Security level 2

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines Use this command to configure the secondary Soft Switch IPDC. If you change the secondary Soft Switch IP Address, change the corresponding secondary TCP port also.

Examples   The following example configures the secondary Soft Switch IP address and TCP port.

```
chipdcsssip 10.1.1.1 1026
```

Related Commands	Command	Description
	chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
	chipdcgwip	Change IPDC gateway IP and TCP port
	chipdcssid	Change IPDC system ID
	chipdcsstype	Change IPDC system type
	chipdcssbaynum	Change IPDC Bay Number
	chipdcmaxm	Change IPDC Maximum Modules
	chipdcssnumfor	Change IPDC Numbering format
	chipdcssadm	Change IPDC Admin Status
	chipdcsshlth	Change IPDC Health Check
	chipdctimer	Change IPDC Timers
	chipdccot	Change IPDC COTs
	chpseudoip	Change pseudo IP address
	lsipdc	List IPDC Soft Switch configuration

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Command	Description
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chipdcsstype

Change IPDC system type.

chipdcsstype *type*

Syntax Description	*type* The string of exactly 9 characters that identifies the manufacturer and model of the MGX 8260 Media Gateway.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the IPDC system type.

Examples   The following example changes the IPDC system type to ID3456789.

```
chipdcsstype ID34565789
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

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chipdctimer

Change IPDC timers and retry counters.

chipdctimer *ssConnRetryTimer ssConnRetryThr tcpConnRetrTimer nsupRtxTimer lnkActiveTimer maxTcpConnRetry maxNsupRetry*

Syntax Description

ssConnRetryTimer	Minimum connection retry interval for primary or secondary Soft Switch when the link is up. The connection interval doubles with every retry attempt until the *ssConnRetryThr* value is reached. Values: integer 2000 to15000 msec.
ssConnRetryThr	Maximum Soft Switch connection retry interval. Values: integer 16000 to 256000 msec
tcpConnRetrTimer	Retry interval for a TCP connection when the link is down. Values: 1000 to 10000 msec
nsupRtxTimer	Retry interval for NSUP message. The timer stops after receipt of ASUP. Values: 1000 to 10000 msec
lnkActiveTimer	The time this device waits for a message from the Soft Switch before declaring the link down. If the health check is enabled, the link stays up until the heartbeat times out. Values: 1000 to 60000 msec
maxTcpConnRetry	The maximum number of TCP connection attempts when the link is down. Values 0 to 10
maxNsupRetry	The maximum NSUP retransmission attempts when the link is down. Values: 0 to 10

Defaults

ssConnRetryTimer: 4000

ssConnRetryThr: 64000

tcpConnRetryTimer: 2000

nsupRetrTimer: 2000

lnkActiveTimer: 60000

maxTcpConnRetry: 1

maxNsupRetry: 2

Command Modes   Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the IPDC timers and retry counters.

Examples   The following example sets the IPDC time to a minimum value of 5000 and a.maximum of 20000.

```
chipdctimer 5000 20000 1500
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chkey

Change file key.

chkey *key*

Syntax Description

key	Up to 6 alphanumeric characters

Defaults

No default behavior or values.

Command Modes

Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the tftp security key for uploading and downloading files to prevent unauthorized file transfers.

Examples

The following example changes the security key to 323bf.

```
chkey e23bf
```

Related Commands

Command	Description
addusp	Add user profile
chpwd	Change user password
delusp	Delete user profile

chm13

Change DS1 to DS3 map.

chm13 *SrcDS3LineNum SrcDS1LineNum DestDS1SlotNum DestDS1LineNum*

Syntax Description

SrcDS3LineNum	The number of the source DS3 line. Values: 1 - 6.
SrcDS1LineNum	The number of the DS1 line, or starting DS1 line, within the DS3 line. Values: 1 - 28.
DestDS1SlotNum	The logical slot number for the destination NSC (Narrowband Service Card).
DestDS1LineNum	The number of the DS1, or starting DS1, in the NSC. Valid entries are 1 through 16.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to change a DS3 to DS1 mapping from Distribution Matrix Card (DMC) to the NSC.

Examples   For example the following command sequence adds three map table entries and then changes one of them:

```
addm13 1 3 1 1 3
chm13 1 3 1 4
```

Related Commands

Command	Description
addm13	Add map to DS1 from DS3
delm13	Delete DS1 to DS3 map
lsm13	List DS3-to-DS1 mapping
lsm13s	List DS3-to-DS1 mappings

chmgcpcore

Change MGCP core parameters.

chmgcpcore *RequestTimeOut RequestRetries AdminStatus RestartInProgMWD RestartDelay ResponseTimeout ConnectivityTimeout*

Syntax Description

RequestTimeOut	The time in milliseconds before retransmitting an unacknowledged message. Values: 1 - 100000.
RequestRetries	The maximum number of retries for a request that times out. Values: 0 - 15.
AdminStatus	The desired state of the protocol.
	1=up—bring up protocol administratively
	2=down—bring down protocol administratively
	3=gracefulDown—gracefully shut down protocol
RestartInProgMWD	The maximum waiting delay, in milliseconds, before the Media Gateway interface sends the Restart In Progress message to the Media Gateway Controller. Values: 0 - 600000
RestartDelay	The delay before a graceful shutdown. Values: 0 to 600. 0 = immediate timeout, meaning shutdown.
ResponseTimeout	The time in milliseconds to wait before retransmitting unacknowledged messages. Values: 1-100,000
ConnectivityTimeout	The time in milliseconds to wait for a request from MGCP before dropping the link. Values: 1-100,000

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to configure the core parameters for the MGCP protocol stack. It is the responsibility of the MGX 8260 Media Gateway to provide suitable timeouts for all outstanding commands, and to retry commands when timeouts occur. Setting the restart timer before sending the Restart In Progress notification to the media gateway controller avoids network congestion during the critical period of service restoration.

Examples   The following example sets MGCP core parameters.

```
chmgcpcore 600 2 2 500 -1 500 500
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters
lsmgcpstat	List MGCP statistics

chmgcpdname

Change the node domain name.

chmgcpdname *DomainName*

Syntax Description

DomainName	The domain name for this node. Value: 1-64 characters

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to define a domain name for the MGX 8260 chassis. The domain name is an alternative to IP addressing.

Examples

The following assigns a domain name.

```
chmgcpdname cisco
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chmgcpcore	Change MGCP core parameters
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters

chmgcplocaladdr1

Change the local MGCP address for network 1.

chmgcplocaladdr1 *MgcpLocalAddressNet1 MgcpLocalPrimUDPPortNet1*

Syntax Description

MgcpLocalAddressNet1	The IP address of the Media Gateway interface for network 1. Specify the IP address in standard dot notation. Values: string.
MgcpLocalPrimUDPPortNet1	The primary UDP port of the Media Gateway interface for network 1. Values: 1025..65535.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines The MgcpLocalAddressNet1 parameter specifies the address of the default Media Gateway Controller to which the RSIP (RestartInProgress) message is sent whenever system starts up or line goes up. If the DNS name is entered and the IP address is found, Media Gateway sends RSIP to the desired MGC. If no IP address is found or no such DNS name exists, no RSIP is sent. If the IP address is entered, Media Gateway sends RSIP to that address. Possible reasons for no response are the network is down or the user misconfigured either the IP address, domain name or UDP port number.

The UDP port is used with MgcpLocalAddressNet1 to specify the local address of the Media Gateway.

Examples   The following example changes the local MGCP address for network 1.

```
chmgcplocaladdr1 10.1.1.1 2000
```

Related Commands

Command	Description
chmgcplocaladdr2	Change the MGCP local address for network 2
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
chmgcpcore	Change the primary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters
lsmgcpstat	List MGCP statistics

chmgcplocaladdr2

Change the MGCP local address for network 2.

chmgcplocaladdr2 *MgcpLocalAddressNet2 MgcpLocalPrimUDPPortNet2*

Syntax Description		
	MgcpLocalAddressNet2	The IP address of the Media Gateway interface for network 2. Specify the IP address in standard dot notation.
	MgcpLocalPrimUDPPortNet2	The primary UDP port of the Media Gateway interface for network 2. Values: 1025..65535.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

The MgcpLocalAddressNet parameter specifies the address of the default Media Gateway Controller to which the RSIP (RestartInProgress) message is sent whenever system starts up or line goes up. If the DNS name is entered and the IP address is found, Media Gateway sends RSIP to the desired MGC. If no IP address is found or no such DNS name exists, no RSIP is sent. If the IP address is entered, Media Gateway sends RSIP to that address. Possible reasons for no response are the network is down or the user misconfigured either the IP address, domain name or UDP port number.

The UDP port is used with MgcpLocalAddressNet parameter to specify the local address of the Media Gateway.

Examples

The following example changes the MGCP local address for network 2.

```
chmgcplocaladdr2 10.10.1.1 2000
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
chmgcpcore	Change the primary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters
lsmgcpstat	List MGCP statistics

chmpc

Configure default MPC parameters.

> **chmpc** *DefTypeNetwork DefPktnPeriod DefBandwidth DefEchoCancel DefSilenceSupp*
> *DefTypeOfService DefResourceRes DefCOTReceiveTone DefCOTTransmitTone Encoding*

Syntax Description

DefTypeNetwork	The type of network.	
	1=voIp	
	2=voAtm	
	3=local	
DefPktnPeriod	Packetization period in milliseconds. Value: fixed at 10	
DefBandwidth	The network bandwidth in kbps. Values: 8 and 64 kbps	
DefEchoCancel	Enables or disables echo cancellation.	
	1=off	
	2=on	
DefSilenceSupp	Enables or disables silence suppression.	
	1=off	
	2=on	
DefTypeOfService	The type of Service. Values: 1-256, where 1 indicates no service type	
DefResourceRes	The resource reservation type.	
	1=bestEffort	
	2=guaranteed	
	3=notUsed	
	4=controlledLoad	
DefCOTReceiveTone	The default receive tone. For transponder COT, when the media gateway controller does not supply the tones, the default tone the gateway receives is the default COT receive tone.	
	1=co1 (2010 Hz)	
	2=co2 (1780 Hz)	
DefCOTTransmitTone	The default transmit tone. For transponder COT, when the media gateway controller does not supply the tones, the default tone the gateway transmits is the default COT transmit tone.	
	1=co1	
	2=co2	
Encoding	The type of voice encoding when not specified by the MGC:	
	1=PCMA—A-law encoding	
	2=PCMU—Mu-law encoding	
	3=G729A	
	4=G72632K	

Defaults   *DefTypeNetwork: 3*

DefPktnPeriod: 10

DefBandwidth: 64

DefEchoCancel: 1

DefSilenceSupp: 1

DefTypeOfService: 2

DefResourceRes: 1

DefCOTReceiveTone: 1

DefCOTTransmitTone: 2

Command Modes   Security level 2

Command History

Release	Modification
1.1	This command was first introduced.

Usage Guidelines   Use this command to configure default MPC parameters.

Examples   The following sets the network type to local.

```
chmpc 3
```

Related Commands

Command	Description
lsmpc	List MPC information.

chndinf

Configure node information.

chndinf *RackNum NodeName NodeNum*

Syntax Description

RackNum	Shelf number for node. Values: 1 - 100.
NodeName	Alphanumeric identifier for node. Values: up to 15 characters
NodeNum	Numeric identifier for node. Values: Integer, 1 - 1000

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to configure system identification information and set the DS1 line type. You set the number of the physical rack, along with the name and number of the chassis. The rack contains the shelf, or chassis, for a node.

Examples   The following example configures node information.

```
chndinf 3 Floor3 12
```

Related Commands

Command	Description
chsyslnmd	Change the line mode for the chassis.
lsndinf	List node information.

chpclksrc

Change primary clock source.

chpclksrc *SlotNum LineNum ClkSrcType CardType*

Syntax Description

SlotNum	Slot number of the clock source. Values: 1 to 16
LineNum	Line number of clock source. Values:
	NSC DS1 lines: 1 to 16
	BSC DS3 lines: 501 to 506
	DMC DS3 lines: 1 to 6
	SCC, OC3 type: 1 to 4
	SCC, BITS type: 1
ClkSrcType	Type of clock source, broadband, narrowband, external, or internal. Values: 1, 2, 3, and 4 respectively.
CardType	Type of card, bits or OC3. Values 1 and 2, respectively.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.
1.1	Added BSC extensions
1.2	Added OC-3 extensions

Usage Guidelines   Use this command to configure the primary clock source. If the Type parameter is broadband or narrowband, the Slot Num and Line Num parameters are mandatory. If the Type is external or internal, do not provide this parameter.

Examples   The first example configures an external clock source. The second configures a broadband clock source on slot 12, line 8.

```
chpclksrc # # 3 #
chpclksrc 12 8 1 #
```

Related Commands	Command	Description
	chsclksrc	Change secondary clock source
	swclk	Switch clock
	lsclksrcs	List all clock sources

chpcs

Configure primary control server.

chpcs *Address Interface Check*

Syntax Description

Address	Primary MCS address in dotted notation w.x.y.z.
Interface	Default tcp port number for primary MCS. Values: Integer > 1024.
Check	Enables or disables the MSCP health check. Values: 1 = enabled, 2 = disabled

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the IP address and interface of the primary MCS.

Examples

The following example configures the primary CS.

```
chpcs 10.10.10.1 5003 1
```

chpmgcpaddr

Change the primary Media Gateway Controller addresses.

> **chpmgcpaddr** *MgcpPMGCAddressNet1 MgcpPMGCCfgUDPPortNet1 MgcpPMGCAddressNet2 MgcpPMGCCfgUDPPortNet2*

Syntax Description

MgcpPMGCAddressNet1	The IP address of the Primary Media Gateway Controller on network 1. Specify the IP address in standard dot notation. Values: string.
MgcpPMGCCfgUDPPortNet1	The UDP port of the Media Gateway Controller on network 2. Values: 1025..65535.
MgcpPMGCAddressNet2	The IP address of the Primary Media Gateway Controller on network 2. Specify the IP address in standard dot notation. Values: string.
MgcpPMGCCfgUDPPortNet2	The secondary UDP port of the Media Gateway Controller on network 2. Values: 1025..65535.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

The MgcpMGCCfgaddress parameter specifies the address of the default Media Gateway Controller to which the RSIP (RestartInProgress) message is sent whenever system starts up or line goes up. If the DNS name is entered and the IP address is found, Media Gateway sends RSIP to the desired MGC. If no IP address is found or no such DNS name exists, no RSIP is sent. If the IP address is entered, Media Gateway sends RSIP to that address. Possible reasons for no response are the network is down or the user misconfigured either the IP address, domain name or UDP port number.

The UDP port is used with MgcpPMGCAddress to specify the local address of the Media Gateway.

Examples

The following example sets the primary MGCP controller addresses for a redundant network configuration.

```
chpmgcpaddr 10.1.1.1 2000 10.10.1.1 2000
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters
lsmgcpstat	List MGCP statistics

chprotocol

Switch between MGCP and IPDC protocols.

chprotocol *protocol*

Syntax Description

protocol	The call control protocol. Values: 1 = MGCP; 2 = IPDC

Defaults

protocol: 1

Command Modes

Security level 2

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

The MGX 8260 Media Gateway supports two protocols for voice call control, MGCP and IPDC. Use this command to switch from one protocol to the other. This command automatically resets the chassis.

Examples

The following example switches from MGCP to IPDC.

```
chprotocol 2
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chpseudoip

Change pseudo IP address for IPDC.

chpseudoip [*pseip*]

Syntax Description

pseip	This IP address that is used to change IP address for IPDC.

Defaults

No default behavior or values.

Command Modes

Security level

Command History

Release	Modification
1.1	This command was first introduced.

Usage Guidelines

Use this command to configure a pseudo IP address that represents the four broadband ports. This IP address simplifies call control because the Soft Switch can reference one IP address rather than four. The MGX 8260 Media Gateway balances the load among the broadband interfaces. This pseudo address must be on the same subnet as the broadband ports.

Examples

The following example sets the pseudo IP address at 10.1.1.1.

```
chpseudoip 10.1.1.1
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
lsipdc	List IPDC Soft Switch configuration

Command	Description
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

chpwd

Change password.

chpwd

Syntax Description   This command has no arguments or keywords.

Command Modes   Security level 1-6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this interactive command to change the password of an existing account. To use this command, you must first log onto the account you want to change. Generally, users change their own passwords with this command.

Examples   The following example shows the interactive session for a password change:

```
MGX.9.ACTIVE-> chpwd

Rules:
     1. Password length must be 4 - 10
     2. First character must be alphanumeric
     3. Only printable characters are allowed
     4. Space not allowed

Enter Password : *****
New Password   : ********
Verify Password: ********
```

chqprf

Change queue profile.

chqprf *Card Queue#*

Syntax Description		
	Card	The number of an SCC card.
	Queue#	The ATM queue profile number. Values: 1 - 10.

Defaults

Queue#: 1

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Specifies the ATM traffic queue profile for an entire SCC card. The MGX 8260 defines 10 profiles for different traffic types. Profile 1 is recommended.

Examples

The following example changes the profile of card 9 to give it an ATM queue profile of 2.

```
chqprf 9 2
```

chsclksrc

Change secondary clock source.

chsclksrc *Slot Line ClkSrcType CardType*

Syntax Description

Slot	Slot number of the clock source.
Line	Line number of clock source.
Type	Type of clock source, broadband, narrowband, external, or internal. Values: 1, 2, 3, and 4 respectively.
CardType	Type of card, bits or OC3. Values 1 and 2, respectively.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the secondary clock source. If the Type parameter is broadband or narrowband, the Slot Num and Line Num parameters are mandatory. If the Type is external or internal, do not provide this parameter.

Examples

The first example configures a external bits clock source. The second configures a broadband clock source on slot 1, line 2.

```
chsclksrc # # 3 1
chsclksrc 1 2 1 2
```

Related Commands

Command	Description
chpclksrc	Change primary clock source
swclk	Switch clock
lsclksrcs	List clock sources

chscs

Change secondary control server (reserved for future use).

chscs *Address Interface Check*

Syntax Description

Address	Secondary MCS IP address in dotted notation w.x.y.z
Interface	Secondary tcp port number for sending IP packets to the secondary MCS
Check	Enables or disables the MSCP health check. Values: 1 = enabled, 2 = disabled

Defaults   No default values or behavior.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to configure the IP address and interface for the secondary MCS.

Examples   The following examples configures a secondary control server at 10.10.10.1 for a PPP interface.

```
chscs 10.10.10.1 3 5004 2
```

chsmgcpaddr

Change the secondary Media Gateway Controller addresses.

chsmgcpaddr *MgcpSMGCAddressNet1 MgcpSMGCCfgUDPPortNet1 MgcpSMGCAddressNet2 MgcpSMGCCfgUDPPortNet2*

Syntax Description		
	MgcpSMGCAddressNet1	The IP address of the Secondary Media Gateway Controller on network 1. Specify the IP address in standard dot notation. Values: string.
	MgcpSMGCCfgUDPPortNet1	The UDP port of the Media Gateway Controller on network 1. Values: 1025..65535.
	MgcpSMGCAddressNet2	The IP address of the Secondary Media Gateway Controller on network 2. Specify the IP address in standard dot notation. Values: string.
	MgcpSMGCCfgUDPPortNet2	The UDP port of the Media Gateway Controller on network 2. Values: 1025..65535.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   The MgcpSMGCAddressNet parameter specifies the address of the default Media Gateway Controller to which the RSIP (RestartInProgress) message is sent whenever system starts up or line goes up. If the DNS name is entered and the IP address is found, Media Gateway sends RSIP to the desired MGC. If no IP address is found or no such DNS name exists, no RSIP is sent. If the IP address is entered, Media Gateway sends RSIP to that address. Possible reasons for no response are the network is down or the user misconfigured either the IP address, domain name or UDP port number.

The UDP port is used with MgcpSMGCAddressNet to specify the local address of the Media Gateway.

Examples   The following example sets the primary MGCP controller addresses for a redundant network configuration.

```
chsmgcpaddr 10.1.1.3 2000 10.10.1.4 2000
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chpmgcpaddr	Change the primary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters
lsmgcpstat	List MGCP statistics

chsonetalm

Change SONET alarm thresholds.

chsonetalm *Location* [*redSeverity yellow Severity perfSeverity SeCV15MinThresh*
SeCV24HrThresh SeES15MinThresh SeES24HrThresh SeSES15MinThresh SeSES24HrThresh
SeSEFS15MinThresh SeSEFS24HrThresh LCV15MinThresh LCV24HrThresh
LES15MinThresh LES24HrThresh LSES15MinThresh LSES24HrThresh LUAS15MinThresh
LUAS24HrThresh PCV15MinThresh PCV24HrThresh PES15MinThresh PES24HrThresh
PSES15MinThresh PSES24HrThresh PUAS15MinThresh PUAS24HrThresh]

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
redSeverity	The red alarm severity: 1=Minor (reserved for future use) 2=Major
yellowSeverity	The yellow alarm severity: 1=Minor 2=Major (reserved for future use)
perfSeverity	The performance alarm severity: 1=Minor 2=Major (reserved for future use)
SeCV15MinThresh *SeCV24HrThresh*	The section threshold for code violations in a 15-minute or sliding 24-hour window. Code violations are Bit Interleaved Parity errors detected in the incoming signal.
SeES15MinThresh *SeES24HrThresh*	The section threshold for errored seconds in a 15-minute or sliding 24-hour window. An errored second is a second with one or more code violations at that layer or incoming defects.
SeSES15MinThresh *SeSES24HrThresh*	The section threshold for severely errored seconds in a 15-minute or sliding 24-hour window. A severely errored second is one in which code violations or incoming defects occurred.
SeSEFS15MinThresh *SeSEFS24HrThresh*	The section threshold for severely errored frame seconds in a 15-minute or sliding 24-hour window. A SEFS is a second containing one or more SEF events.
LCV15MinThresh *LCV24HrThresh*	The line threshold for code violations in a 15-minute or sliding 24-hour window. Code violations are Bit Interleaved Parity errors detected in the incoming signal.
LES15MinThresh *LES24HrThresh*	The line threshold for errored seconds in a 15-minute or sliding 24-hour window. An errored second is a second with one or more code violations at that layer or incoming defects.
LSES15MinThresh *LSES24HrThresh*	The line threshold for severely errored seconds in a 15-minute or sliding 24-hour window. A severely errored second is one in which code violations or incoming defects occurred.
LUAS15MinThresh *LUAS24HrThresh*	The line threshold for unavailable seconds in a 15-minute or sliding 24-hour window. Unavailable seconds represent the number of seconds that the interface is unavailable.

PCV15MinThresh	The path threshold for code violations in a 15-minute or sliding 24-hour
PCV24HrThresh	window. Code violations are Bit Interleaved Parity errors detected in the incoming signal.
PES15MinThresh	The path threshold for errored seconds in a 15-minute or sliding 24-hour
PES24HrThresh	window. An errored second is a second with one or more code violations at that layer or incoming defects.
PSES15MinThresh	The path threshold for severely errored seconds in a 15-minute or sliding
PSES24HrThresh	24-hour window. A severely errored second is one in which code violations or incoming defects occurred.
PUAS15MinThresh	The path threshold for unavailable seconds in a 15-minute or sliding
PUAS24HrThresh	24-hour window. Unavailable seconds represent the number of seconds that the interface is unavailable.

Defaults   *This command has no default behavior or values. The following defaults apply to a new SONET line:*

redSeverity: 2

yellowSeverity: 1

perfSeverity: 1

SeCV15MinThresh: 15

SeCV24HrThresh: 134

SeES15MinThresh: 12

SeES24HrThresh: 120

SeSES15MinThresh: 10

SeSES24HrThresh: 100

SeSEFS15MinThresh: 5

SeSEFS24HrThresh: 20

LCV15MinThresh: 15

LCV24HrThresh: 134

LES15MinThresh: 12

LES24HrThresh: 120

LSES15MinThresh: 10

LSES24HrThresh: 100

LUAS15MinThresh: 12

LUAS24HrThresh: 20

PCV15MinThresh: 15

PCV24HrThresh: 134

PES15MinThresh: 12

PES24HrThresh: 120

PSES15MinThresh: 10

PSES24HrThresh: 100

PUAS15MinThresh: 12

PUAS24HrThresh: 120

Command Modes   Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to enable and configure alarm thresholds for SONET lines. When a counter exceeds a threshold, the system raises the performance alarm.

Examples   The following example changes the threshold for code violations in a 15-minute window:

```
chsonetalm 9.1 # # # 30
```

Related Commands

Command	Description
chsonetperdi	Change SONET E-RDI parameters
chsonettrace	Change SONET trace parameters
chsonetexptrace	Change SONET expected trace parameters
lssonetlnerdi	List E-RDI information for a SONET line
lssonetlnerdis	List summary E-RDI information for all SONET lines

chsonetexptrace

Change expected path trace parameters for SONET lines.

chsonetexptrace *Location* [*numOfLines expTraceIdLen expTraceId expTraceIdPosition*]

Syntax Description

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
numOfLines	The number of lines to add. Values: 1-4.
expTraceIdLen	The expected trace identifier length for the SONET path: 16=message contains 16 bytes (SDH only) 64=message contains 64 bytes (SONET or SDH)
expTraceId	The expected trace identifier in the SONET path overhead. Value: ASCII string of either 16 or 62 characters, depending on the TraceIdLen setting. You specify the ASCII characters as pairs of hexidecimal characters. For example, a you express a space as 20. Note 1: The 16 byte message normally alters one byte for synchronization, as defined by TraceIdPosition. Note 2: The 64 byte message uses the last two bytes for synchronization, so the maximum trace identifier length is 62 ASCII characters. Only printable ASCII characters are allowed.
expTraceIdPosition	The position within a 16-byte message of the synchronization byte. The most significant bit of this byte is set high. Values: 1-16. Alternatively, this parameter defines the following special cases: 0=No bit set 17=All most significant bits set low

Defaults   *numOfLines: 1*

Command Modes   Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the path trace parameters for SONET lines. This command works in conjunction with the **chsonettrace** and **chsonetperdi** commands to configure a SONET line test.

Examples   The following example defines an expected trace identifier of *hello world* in a 64-byte message for line 1 of slot 9:

```
chsonetexptrace 9.1 64 48656c6c6f20576f726c64
```

Related Commands

Command	Description
chsonetperdi	Change SONET path e-rdi parameters
chsonettrace	Change SONET trace parameters
lssonetlnerdi	List E-RDI information for a SONET line
lssonetlnerdis	List summary E-RDI information for all SONET lines

chsonetln

Change SONET lines.

chsonetln *Location* [*numOfLines MediumType FrameType LoopConfig HCSmasking PayloadScrambling FrameScrambling TxClockSource AdminStatus*]

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	numOfLines	The number of lines to add. Values: 1-4.
	MediumType	The type of physical medium: 1=SONET 2=SDH (reserved for future use)
	FrameType	The type of framing: 1=STS-3c 2=STM-1 (reserved for future use)
	LoopConfig	The loopback state: 1=No loop 2=Line loop 3=Serial loop 4=Parallel loop
	HCSmasking	The HCS masking state (reserved for future use)
	PayloadScrambling	The payload scrambling state: 1=Disable 2=Enable
	FrameScrambling	The frame scrambling state: 1=Disable 2=Enable
	TxClockSource	The clock source for the transmit signal: 1=Loop Timing, use the recovered receive clock 2=Local Timing, use the local clock 3=Through Timing (reserved for future use)
	AdminStatus	The desired administrative status of the line: 1=Up

Defaults   *numOfLines: 1*

Command Modes   Security level 3

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines   Use this command to change the configuration of SONET/SDH interfaces on the OC-3 SCC and back card. Although the SCC may occupy physical slots 9 or 10, you always configure logical slot 9. This command only applies to the OC-3 SCC.

You can change a single line or a range of lines with this command. The system changes lines one at a time and aborts on the first failure, even if subsequent changes could have succeeded. The system issues an error message for partially fulfilled requests.

Examples   The following example activates a line loopback on a SONET line:

```
chsonetln 9.1 # # # 2
```

Related Commands	Command	Description
	addsonetln	Add a SONET line
	delsonetln	Delete a SONET line
	lssonetln	List information about a SONET line
	lssonetlns	List information about all SONET lines

chsonetperdi

Change extended rdi parameters for SONET paths.

chsonetperdi *Location* [*numOfLines SupportPathERDI SignalLabel ExpectedSignalLabel*]

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	numOfLines	The number of lines to add. Values: 1-4.
	SupportPathERDI	The state of the enhanced remote defect indication for the SONET path: 1=Disable 2=Enable
	SignalLabel	The signal label to transmit in the SONET path overhead: 1=No specific payload type 19=ATM 207=Packet on SONET
	ExpectedSignalLabel	The expected signal label from the SONET path overhead: 1=No specific payload type 19=ATM 207=Packet on SONET

Defaults

numOfLines: 1
SupportPathERDI: 1
SignalLabel: 19
ExpectedSignalLabel: 19

Command Modes   Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to enable and configure the e-rdi feature for SONET lines. This feature is disabled by default when you add SONET lines.

Examples   The following example enables e-rdi for SONET line 1 in slot 9:

```
chsonetperdi 9.1 1 2
```

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Related Commands	Command	Description
	chsonettrace	Change SONET trace parameters
	chsonetexptrace	Change SONET expected trace parameters
	lssonetlnerdi	List E-RDI information for a SONET line
	lssonetlnerdis	List summary E-RDI information for all SONET lines

chsonettrace

Change path trace parameters for SONET lines.

chsonettrace *Location* [*numOfLines TraceIdLen TraceId TraceIdPosition*]

Syntax Description

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
numOfLines	The number of lines to add. Values: 1-4.
TraceIdLen	The message length for the trace identifier: 16=message contains 16 bytes (SDH only) 64=message contains 64 bytes (SONET or SDH)
TraceId	The trace identifier to transmit in the SONET path overhead. Value: ASCII string of either 16 or 62 characters, depending on the TraceIdLen setting. You specify the ASCII characters as pairs of hexidecimal characters. For example, a you express a space as 20. Note 1: The 16 byte message normally alters one byte for synchronization, as defined by TraceIdPosition. Note 2: The 64 byte message uses the last two bytes for synchronization, so the maximum trace identifier length is 62 characters. Only printable ASCII characters are allowed.
TraceIdPosition	The position within a 16-byte message of the synchronization byte. The most significant bit of this byte is set high. Values: 1-16. Alternatively, this parameter defines the following special cases: 0=No bit set 17=All most significant bits set low

Defaults   *numOfLines: 1*

Command Modes   Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to configure the path trace parameters for SONET lines. This command works in conjunction with the **chsonetexptrace** and **chsonetperdi** commands to configure a SONET line test.

Examples   The following example defines a trace identifier of *hello world* in a 64-byte message for line 1 of slot 9:

```
chsonettrace 9.1 64 48656c6c6f20576f726c64
```

Related Commands	Command	Description
	chsonetperdi	Change SONET path e-rdi parameters
	chsonetexptrace	Change SONET expected trace parameters
	lssonetlnerdi	List E-RDI information for a SONET line
	lssonetlnerdis	List summary E-RDI information for all SONET lines

chsysip1

Change system IP address 1.

chsysip1 *Address Mask*

Syntax Description

Address	An IP1 address of the management interface in dotted notation w.x.y.z.
Mask	A subnet mask in dotted notation a.b.c.d.

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the IP1 address and mask of the system management Ethernet 10BaseT interface.

Examples

The following example configures the IP1 address and subnet mask of a system management interface.

```
chsysip1 10.2.2.5 255.255.255.0
```

Related Commands

Command	Description
chgw	Change the gateway IP address
chibip	Configure in-band IP
chsysip2	Change system IP2
lsmgips	List management IP addresses

chsysip2

Change system IP address 2.

chsysip2 *Address Mask*

Syntax Description

| *Address* | An IP2 address of the management interface in dotted notation w.x.y.z. |
| *Mask* | A subnet mask in dotted notation a.b.c.d. |

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to configure the IP2 address and mask of the system management Ethernet 10BaseT interface.

Examples

The following example configures the IP2 address and subnet mask of a system management interface.

```
chsysip2 10.2.2.5 255.255.255.0
```

Related Commands

Command	Description
chgw	Change the gateway IP address
chibip	Configure in-band IP
chsysip1	Change system IP1
lsmgips	List management IP addresses

chsyslnmd

Change the line mode to T1 or E1.

chsyslnmd *Mode*

Syntax Description	*Mode*	The line mode for the chassis. Values:
		1=T1
		2=E1

Defaults

No default behavior or values for this command. The default mode for a new chassis is T1.

Command Modes

Security level 1

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to configure the chassis for T1 or E1 lines - you can't mix T1 and E1 lines on a single chassis. Before switching from T1 to E1, verify the following conditions:

- The chassis has no BSCs installed
- The database contains no BSC configuration information
- The NSCs have no DS1 lines configured

When switching from E1 to T1, make sure there are no E1 lines configured. This command automatically resets the chassis.

Examples

The following example changes the chassis to the E1 line mode.

```
chsyslnmd 2
```

Related Commands

Command	Description
chprotocol	Change the call control protocol for the chassis

chtime

Change time.

chtime *H:M**:**S [Zone]*

Syntax Description	*H**:**M**:**S*	The system time in hours, minutes, and seconds delimited by colons. Values: 0-23 for hours and 0-60 for minutes and seconds.
	Zone	An integer from 1 to 25, representing a zone.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to configure or change the system time, which may include the time zone. Set 25 integer world time zones from -12 through 0 (GMT) to +12 (see Table 9-4, which lists USA time zones values using civilian designations, such as EST).

Table 9-4   Time Zones

Zone	Value		Zone	Value
gmtplus12	1		gmtminus01	14
gmtplus11	2		gmtminus02	15
gmtplus10	3		gmtminus03	16
gmtplus09	4		gmtminus04	17
gmtplus08	5		est	18
gmtplus07	6		cst	19
gmtplus06	7		pdt	20
gmtplus05	8		pst	21
gmtplus04	9		gmtminus9	22
gmtplus03	10		gmtminus10	23
gmtplus02	11		gmtminus11	24
gmtplus01	12		gmtminus12	25
gmt	13			

Examples   The following example sets the system time to noon, Eastern Standard Time.

```
chtime 12:00:00 18
```

Related Commands

Command	Description
chdate	Change system date
chtimezn	Change system time zone
lsdate	List date

chtimezn

Change system time zone.

chtimezn *number*

Syntax Description

number	The Time Zone where this MGX 8260 node is installed. Values: 1 - 25

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to change the system time zone. Set 25 integer world time zones from -12 through 0 (GMT) to +12 (see Table 9-4 on page 9-130, which lists USA time zones values using civilian designations, such as EST).

Examples   The following example shows how to change the time zone to Pacific Standard Time.

```
chtimezn 21
```

Related Commands

Command	Description
chdate	Change system date
chtime	Change system time
lsdate	List date

chtmgr

Change trap manager.

chtmgr *Addr Port Interface Com_String Bitmap*

Syntax Description		
	Addr	The address of the SNMP manager who wants to receive trap events.
	Port	Port to which the traps are transmitted.
	Interface	The default interface for initially sending traps if the routing table has no trap manager. Values:
		1 = scc-eth-if, the default system Ethernet management interface on SCC.
		2 = inband-if, the in-band management interface.
		3 = ppp-if, the PPP interface.
	Com_String	SNMP community string for the trap manager.
	Bitmap	A bitwise specification of trap categories to subscribe. Each bit represents a category of traps. Bit values: 1 = subscribe 0, = do not subscribe. Trap subscription bitmap specifications are:
		Bit 0=Major (trap severity selection)
		Bit 1=Minor (trap severity selection
		Bit 2=Information (trap severity selection)
		Bit 3=Shelf
		Bit 4=Card
		Bit 5=SNMP
		Bit 6=Dsx1 Line
		Bit 7=Dsx3 Line
		Bit 8=Sonet Line
		Bit 9=Ethernet Line
		Bit 10=Voice Port
		Bit 11=Ethernet Channel
		Bit 12=Voice Channel
		Bit 13=EMM
		Bit 14=Clock
		Bit 15=DSP
		Bit 16=DMCMAP
		Bit 17=ISDN
		Bit 18=MGCP
		Bit 19=Backhaul Session
		The first three bit positions indicate which trap severity categories they are interested in. If you specify severity without specifying any other trap categories, managers receive traps from all categories.

Defaults   *Port:* 162

Interface: 1

Com_String: "public"

Bitmap: 0

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Network administrators can receive email for up to 20 traps. Use this command to change a manager's SNMP trap registrations.

Examples   The following example changes the manager at address 10.1.1.10 and udp port 162 to receive events for the traps specified by bitmap 1100110.

The bitmap is a binary number that represents the settings.

Trap	dsx1line	SNMP			Information	Minor	
Value	1	1	0	0	1	1	0
Bit	6	5	4	3	2	1	0

To use this bitmap, convert it to a decimal value and specify it as the last argument. Binary 1100110 is 102 decimal. Therefore, you enter the command as follows:

```
chtmgr 10.1.1.10 2 162 public 102
```

The second argument (2) sets the in-band interface as the default interface for sending traps when the routing table has no trap manager.

Related Commands

Command	Description
addcms	Add community string
addtmgr	Add trap manager
deltmgr	Delete trap manager
lstmgr	List trap manager
lstmgrs	List trap managers

chvport

Configure voice port.

> **chvport** *SlotNum PortNum RepitionNum WrapNum* [*Dejitter DejitteBufLen Maxdj Mindj PacketLoading EchoTail*]

Syntax Description		
SlotNum	The logical slot number of an NSC. Values: 1 to 16	
PortNum	The logical port number. Values 1 to 512	
ReptitionNum	The number of ports to add. Values: 1 to 6944. This corresponds to 31 ports per line, 16 lines per NSC, and 14 NSCs.	
WrapNum	The DS0 number at which to wrap to the next slot. Set this to the maximum number of DS0s the NSC in your configuration. For DS1 use 384 and for E1 use 480 with CAS or 496 without CAS. Values: 1 to 512	
Dejitter	The desired state, disabled or enabled, of the dejitter buffer. Values: 1 or 2, respectively.	
DejitteBufLen	The initial length of the dejitter buffer, specified in multiples of 10 msec. Values: 1 through Maxdj.	
Maxdj	The maximum length of the dejitter buffer, specified in multiples of 10 msec. Values: 1 through 50.	
Mindj	The minimum length of the dejitter buffer, specified in multiples of 10 msec. Values: 1 through DejitterBufLen.	
PacketLoading	The IP packet loading time for voice service, expressed in multiples of 10 msec. Values: 1 - 10.	
EchoTail	The length of the echo cancel tail:	
	1 = echo disabled	
	2 = tail24ms—24 msecs	
	3 = tail32ms—32 msecs	
	4 = tail48ms—48 msecs	
	5 = tail64ms—64 msecs	
	6 = tail80ms—80 msecs	
	6 = tail96ms—96 msecs	
	7 = tail112ms—112 msecs	
	8 = tail128ms—128 msecs	

Defaults   *ReptitionNum: 1*

WrapNum: 384 for DS1, 480 for E1 (CAS on)

Command Modes   Security level 3

Command History	Release	Modification
	1.0	This command was first introduced.
	1.2	Added repetition and wrap numbers

Usage Guidelines   Use this command to configure one or more voice ports.

Examples   The following example disables the dejitter buffer for 4 lines starting slot 1 port 1.

```
chvport 1 1 # 384 1
```

The system changes the packet loading for logical port one in slot one to 20 msec.

Related Commands	Command	Description
	addvport	Add voice port
	delvport	Delete voice port
	lsvport	List voice port
	lsvports	List voice ports

clralmhist

Clear alarm history.

clralmhist

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 4

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to delete alarm history.

Examples   The following example clears the alarm history.

```
clralmhist
```

Related Commands

Command	Description
lsalms	List alarms

clrcdcnf

Clear configuration of a card.

clrcdcnf *Num*

Syntax Description

Num	The slot number of the card

Defaults

No default behavior or values.

Command Modes

Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Clears the configuration of the specified card and resets it.

Examples

The following example clears the configuration of the card in slot 3.

```
clrcdcnf 3
```

Related Commands

Command	Description
chcdif	Configure card interface

clrds1Inst

Clear T1 line statistics.

clrds1Inst *Location Stat*

Syntax Description	

Location	The slot and line number, delimited by a period, of the DS1 line.
Stat	The statistic to clear: Values: one of the following integers.
	1=No Action.
	2=Clear all the counters in the ds1Stats Table and dsx1StatsPerfAlarmState.
	3=Clear LCV 15 Minute counter in the dsx1CurrentTable.
	4=Clear LCV 24 Hour counter in the dsx1TotalTable.
	5=Clear LES 15 Minute counter in the dsx1CurrentTable.
	6=Clear LES 24 Hour counter in the dsx1TotalTable.
	7=Clear LSES 15 Minute counter in the dsx1CurrentTable.
	8=Clear LSES 24 Hour counter in the dsx1TotalTable.
	9=Clear PCV 15 Minute counter in the dsx1CurrentTable.
	10=Clear PCV 24 Hour counter in the dsx1TotalTable.
	11=Clear PES 15 Minute counter in the dsx1CurrentTable.
	12=Clear PES 24 Hour counter in the dsx1TotalTable.
	13=Clear PSES 15 Minute counter in the dsx1CurrentTable.
	14=Clear PSES 24 Hour counter in the dsx1TotalTable.
	15=Clear SEFS 15 Minute counter in the dsx1CurrentTable.
	16=Clear SEFS 24 Hour counter in the dsx1TotalTable.
	17=Clear PSAS 15 Minute counter in the dsx1CurrentTable.
	18=Clear PSAS 24 Hour counter in the dsx1TotalTable.
	19=Clear UAS 15 Minute counter in the dsx1CurrentTable.
	20=Clear UAS 24 Hour counter in the dsx1TotalTable.
	21=Clear all counters in the dsx1CurrentTable (15 minute counters).
	22=Clear all counters in the dsx1TotalTable (24 hour counters).
	23=Clear Bursty Errored Seconds in dsx1CurrentTable.
	24=Clear Bursty Errored Seconds in dsx1TotalTable.
	25= Clear Path Controlled Slip Seconds in the dsx1CurrentTable
	26=Clear Path Controlled Slip Seconds in the dsx1TotalTable

Defaults   No default behavior or values.

Command Modes   Security level 4

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to clear the specified DS1 real-time statistic.

Examples   The following example clears the LCV 24 Hour counter in the dsx1TotalTablefor the DS1 line at slot 1 line 1.

```
clrds1lnst 1.1 4
```

Related Commands

Command	Description
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines
offbertds1	Stop BERT on DS1
onbertds1	Start BERT on DS1

clrds3lnst

Clear statistics for DS3 line.

clrds3lnst *Index stats*

Syntax Description		
Index		The slot and line number, delimited by a period, of the DS3 line.
		Valid slot numbers:
		BSC: 11-16
		DMC: 7 or 8 (reserved for future use)
		Valid line numbers:
		BSC: 501-506
		DMC: 1-6 (reserved for future use)
stats		The instruction to clear or not to clear statistics.
		1=Do not clear.
		2=Clear

Defaults

No default behavior or values.

Command Modes

Security level 4

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card configuration - no functional change

Usage Guidelines

Clears the specified DS3 real-time statistic.

Examples

The following examples clears the DS3 statistic at slot 7, line 1.

```
clrds3lnst 7.1 2
```

Related Commands

Command	Description
lsds3curst	List DS3 current statistics
lsds3cursts	List all DS3 statistics
lsds3intst	List DS3 interval statistics
lsds3ln	List DS3 line

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Command	Description
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

clre1lnst

Clear E1 line statistics.

clrds1lnst *Location Stat*

Syntax Description

Location	The slot and line number, delimited by a period, of the line.
Stat	The statistic to clear: Values: one of the following integers.

1=No Action.

2=Clear all the counters in the e1Stats Table and e1StatsPerfAlarmState

3= Clear LCV 15 Minute counter in the e1CurrentTable

4=Clear LCV 24 Hour counter in the e1TotalTable

5=Clear LES 15 Minute counter in the e1CurrentTable

6=Clear LES 24 Hour counter in the e1TotalTable

7=Clear UAS 15 Minute counter in the e1CurrentTable

8=Clear UAS 24 Hour counter in the e1TotalTable

9=Clear FEESR 15 Minute counter in the e1CurrentTable

10=Clear FEESR 24 Hour counter in the e1TotalTable

11=Clear FESESR 15 Minute counter in the e1CurrentTable

12=Clear FESESR 24 Hour counter in the e1TotalTable

13=Clear FEBEESR 15 Minute counter in the e1CurrentTable

14=Clear FEBEESR 24 Hour counter in the e1TotalTable

15=Clear FEBESESR 15 Minute counter in the e1CurrentTable

16=Clear FEBESESR 24 Hour counter in the e1TotalTable

17=Clear CRCESR 15 Minute counter in the e1CurrentTable

18=Clear CRCESR 24 Hour counter in the e1TotalTable

19=Clear CRCSESR 15 Minute counter in the e1CurrentTable

20=Clear CRCSESR 24 Hour counter in the e1TotalTable

21=Clear ESR 15 Minute counter in the e1CurrentTable

22=Clear ESR 24 Hour counter in the e1TotalTable

23=Clear SESR 15 Minute counter in e1CurrentTable

24=Clear SESR 24 Hour counter in e1TotalTable

25=Clear ES in e1CurrentTable

26=Clear ES in e1TotalTable

27=Clear SES in e1CurrentTable

28=Clear SES in e1ToatlTable

29=Clear BES in e1CurrentTable

30=Clear BES in e1TotalTable

Stat Cont.	31=Clear PCV in e1CurrentTable
	32=Clear PCV in e1TotalTable
	33=Clear Control Slip seconds in e1CurrentTable
	34=Clear Control Slip seconds in e1TotalTable
	35=Clear all counters in e1CurrentTable
	36=Clear all counters in e1TotalTable

Defaults   No default behavior or values.

Command Modes   Security level 4

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to clear the specified E1 real-time statistic.

Examples   The following example clears the LCV 24 Hour counter in the dsx1TotalTablefor the E1 line at slot 1 line 1.

```
clre1lnst 1.1 4
```

Related Commands

Command	Description
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines
offbertds1	Stop BERT on DS1
onbertds1	Start BERT on DS1

clrevt

Clear event log.

clrevt

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to clear the event log.

Examples   The following example clears the event log.

```
clrevt
```

Related Commands

Command	Description
lsevt	List events

clrndcnf

Clear node configuration and restore defaults.

clrndcnf

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to clear configuration of a node and restore the default settings. Use with caution because this interrupts service and changes many parameters.

Examples   The following example clears configuration settings of a node.

```
clrndcnf
```

Related Commands

Command	Description
resetnd	Reset node

clrslinecst

Clear current statistics for a SONET line.

> **clrslinecst** *Location [Stat]*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	Stat	The statistic to clear: Values: one of the following integers:
		1=No Action
		2=All
		3=ES
		4=SES
		5=CV
		6=UAS

Defaults   *Stat*: 1

Command Modes   Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to clear the specified statistic.

Examples   The following example clears the SES counter in the sonet line at slot 9 line 1.

```
clrds1lnst 9.1 4
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line

clrslinetst

Clear total statistics for a SONET line.

clrslinetst *Location [Stat]*

Syntax Description

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
Stat	The statistic to clear: Values: one of the following integers:
	1=No Action
	2=All
	3=ES
	4=SES
	5=CV
	6=UAS

Defaults

Stat: 1

Command Modes

Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to clear the specified statistic.

Examples

The following example clears the SES counter in the sonet line at slot 9 line 1.

```
clrslinetst 9.1 4
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line

clrsonetstats

Clear the SONET alarm statistics.

clrspathtst *Location [Stat]*

Syntax Description		
Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4	
Stat	The statistic to clear: Values: one of the following integers:	
	1=noAction	
	2=clearAll	
	3=clearSeCV15Min	
	4=clearSeCV24Hr	
	5=clearSeES15Min	
	6=clearSeES24Hr	
	7=clearSeSES15Min	
	8=clearSeSES24Hr	
	9=clearSeSEFS15Min	
	10=clearSeSEFS24Hr	
	11=clearLCV15Min	
	12=clearLCV24Hr	
	13=clearLES15Min	
	14=clearLES24Hr	
	15=clearLSES15Min	
	16=clearLSES24Hr	
	17=clearLUAS15Min	
	18=clearLUAS24Hr	
	19=clearPCV15Min	
	20=clearPCV24Hr	
	21=clearPES15Min	
	22=clearPES24Hr	
	23=clearPSES15Min	
	24=clearPSES24Hr	
	25=clearPUAS15Min	
	26=clearPUAS24Hr	
	27=clearAll15Min	
	28=clearAll24Hr	

Defaults	*Stat*: 1

Command Modes	Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to clear the specified alarm statistic.

Examples   The following example clears all SONET alarm counters at slot 9 line 1.

```
clrsonetstats 9.1 2
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path

clrspathcst

Clear current statistics for a SONET path.

clrspathcst *Location [Stat]*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	Stat	The statistic to clear: Values: one of the following integers:
		1=No Action
		2=All
		3=ES
		4=SES
		5=CV
		6=UAS

Defaults   *Stat*: 1

Command Modes   Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to clear the specified statistic.

Examples   The following example clears the SES counter in the sonet path at slot 9 line 1.

```
clrds1lnst 9.1 4
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line

clrspathtst

Clear total statistics for a SONET path.

clrspathtst *Location [Stat]*

Syntax Description	

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
Stat	The statistic to clear: Values: one of the following integers:
	1=No Action
	2=All
	3=ES
	4=SES
	5=CV
	6=UAS

Defaults

Stat: 1

Command Modes

Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to clear the specified statistic.

Examples

The following example clears the SES counter in the sonet path at slot 9 line 1.

```
clrspathtst 9.1 4
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line

clrssectioncst

Clear current statistics for a SONET section.

clrssectioncst *Location [Stat]*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	Stat	The statistic to clear: Values: one of the following integers:
		1=No Action
		2=All
		3=ES
		4=SES
		5=SEFS
		6=CV

Defaults   *Stat*: 1

Command Modes   Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to clear the specified statistic.

Examples   The following example clears the SES counter in the sonet section at slot 9 line 1.

```
clrds1lnst 9.1 4
```

Related Commands

Command	Description
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line

clrssectiontst

Clear total statistics for a SONET section.

clrssectiontst *Location [Stat]*

Syntax Description

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
Stat	The statistic to clear: Values: one of the following integers:
	1=No Action
	2=All
	3=ES
	4=SES
	5=SEFS
	6=CV

Defaults

Stat: 1

Command Modes

Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to clear the specified statistic.

Examples

The following example clears the SES counter in the sonet section at slot 9 line 1.

```
clrssectiontst 9.1 4
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line

clrtraps

Clear the trap log.

clrtraps

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to clear the log of SNMP traps.

Examples   The following example clears the trap log.

```
clrtraps
```

Related Commands

Command	Description
lstraps	List traps

dbbkup

Back up the configuration database.

dbbkup

Syntax Description The command has no arguments or keywords.

Defaults The system defines a backup file name.

Command Modes Security level 1

Command History

Release	Modification
1.1	This command was first introduced.

Usage Guidelines Use this command to save all configuration information, such as system and line settings, to the hard drive on the SCC. This command returns the outcome of the operation and the name assigned to the backup file. You can restore this configuration at a later time with the **dbrstr** command.

Examples The following example backs up the MGX 8260 database.

```
dbbkup
```

The system returns the backup result and name of the backup file. For example:

```
dbbackup: Successful back-up of configuration file [C:/scc_mms111.cfg]
```

Related Commands

Command	Description
dbrstr	Database restore

dbrstr

Restore the configuration database.

dbrstr *fileName*

Syntax Description	*fileName*	The name of the backup file, without the .cfg extension.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History	Release	Modification
	1.1	This command was first introduced.

Usage Guidelines   Use this command to restore the configuration information saved by **dbbkup**. Use the file name assigned by **dbbkup**, but omit the .cfg extension.

Examples   The following example restores configuration information from file scc_mms111.cfg.

```
dbrstr scc_mms111
```

Related Commands	Command	Description
	dbbkup	Database backup

deacannfile

Deactivate an announcement file.

deacannfile *fid*

Syntax Description

fid	The announcement file ID. Values: 1-100

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

You use this command to deactivate an announcement file. Before attempting to remove an announcement file, first deactivate the file; otherwise, removal fails. To view file ID numbers, use the **lsannfiles** command.

Examples

The following command deactivates announcement file 25:

```
deacannfile 25
```

Related Commands

Command	Description
acannfile	Activate an announcement file
rmannfile	Remove an announcement file
lsannfile	List the given announcement file
lsannfiles	List all announcement files
lsdurationif	List duration information about announcement files

delcms

Delete community string.

delcms *Comm_Str Addr*

Syntax Description

Comm_Str	An SNMP community string, up to 20 characters.
Addr	The IP address of the SNMP manager who wants to discontinue receiving trap events

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to delete the community string for an SNMP manager who wants to discontinue receiving information on traps.

Examples

For example, the following command deletes the Public community string.

```
delcms Public 0.0.0.0
```

Related Commands

Command	Description
addcms	Add community string
deltmgr	Delete trap manager
lscms	List community string
lscmss	List community strings

deldchan

Delete a D Channel.

deldchan *Index Repetitions*

Syntax Description

Index	The slot and line number, delimited by a period, of the D channel
Repetitions	The number of sequential D Channels to delete. Values: 1 to 1136.

Defaults

Repetitions: 1

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added number of repetitions

Usage Guidelines

Use this command to delete a D Channel management path, freeing the resource for other uses.

Examples

The following example deletes three D Channels, starting at slot 5, line 4.

```
deldchan 5.4 3
```

Related Commands

Command	Description
adddchan	Add a D Channel
lsdchan	List information about a D Channel
lsdchans	List information about D Channels

deldlsp

Delete a DLSAP profile.

deldlsp *Index*

Syntax Description

Index	The identifier of a DLSAP Profile. Values: 1 - 10.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to deletes a DLSAP profile from the MGX 8260 Media Gateway. Profiles used by existing D Channels should not be deleted.

Examples   The following example deletes profile 9.

```
deldlsp 9
```

Related Commands

Command	Description
adddlsp	Add a DLSAP profile
lsdlsapstat	List statistics for a DLSAP
lsdlsapstats	List DLSAP statistics
lsdlsapstatus	List status for a DLSAP
lsdlsp	List a DLSAP profile
lsdlsps	List DLSAP profiles

delds1ln

Delete DS1(T1 or E1) lines.

delds1ln *Index Numlines*

Syntax Description	*Index* — The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

<table>
<tr><td rowspan="2"></td><td rowspan="2">Index</td><td>The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:</td></tr>
<tr><td></td></tr>
</table>

Syntax Description

Index The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

- NSC: 1-8 and 11-16
- BSC: 11-16

Valid line numbers:

- NSC: 1-16
- BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Numlines Number of lines to delete. The MGX 8260 stops deleting lines at the first failure. Values: 1-1136.

Defaults *Numlines:* 1

Command Modes Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.2	Added E1 lines

Usage Guidelines Use this command to delete a one or more DS1/E1 lines. You can't delete a DS1/E1 line if a voice port is configured for the line. When deleting a range of lines, the process stops after the last line or at the first error.

Examples   The following example deletes 3 DS1 lines beginning at line 6 from slot 13:

```
delds1ln 13.6 3
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

delds3ln

Delete a DS3 line.

delds3ln *Index Numlines*

Syntax Description		
Syntax Description	*Index*	The slot and line number, delimited by a period, of the DS3 line.
		Valid slot numbers:
		BSC: 11-16
		DMC: 7 or 8 (reserved for future use)
		Valid line numbers:
		BSC: 501-506
		DMC: 1-6 (reserved for future use)
	Numlines	Number of lines to delete.

Defaults   *Numlines: 1*

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card configuration - no functional change

Usage Guidelines   Use this command to delete a one or more DS3 lines. When deleting a range of lines, the process stops after the last line or at the first error.

Examples   The following example deletes three DS3 lines beginning at line 5 in slot 7:

```
delds3ln 7.2 3
```

Related Commands

Command	Description
addds3ln	Add DS3 line.
chds3alm	Change DS3 alarm severity and threshold
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm

Command	Description
lsds3curst	List DS3 current statistics
lsds3intst	List DS3 interval statistics
lsds3ln	List DS3 line
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

delereg

Delete email registration.

delereg *Index*

Syntax Description

Index	Position of the email address in the SnmpEmailRegTable. Values: integer.

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to stop email notifications to the user.

Examples

The following example deletes all email alerts for user 1:

```
delereg 102
```

Related Commands

Command	Description
addereg	Add email registration
chem	Configure email registration
chereg	Change email registration
lsem	List email server
lsereg	List entry registered
lseregs	List registered email alerts

delethln

Delete Ethernet line.

delethln *Location*

Syntax Description	*Location* — The slot and line number, delimited by a period, of the Ethernet line. Values: The slot number of the SCC, either 9 or 10; the Fast Ethernet line number, from 1 to 4.

Defaults   *No default values or behavior.*

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to delete an Ethernet interface from the Fast Ethernet SCC and back card.

Examples   The following example deletes Fast Ethernet line 4 in slot 9:

```
delethln 9.4
```

Related Commands

Command	Description
addethln	Add Ethernet line
chethln	Change Ethernet line
upethln	Activate Ethernet line
dnethln	DeActivate Ethernet line
lsethln	List Ethernet line
lsethlns	List Ethernet Lines

deliproute

Delete an IP route.

deliproute *IPRouteDest*

Syntax Description

IPRouteDest	The destination IP address of this route. An entry of 0.0.0.0 is considered a default route. Multiple routes to a single destination can appear in the table, but access to them is dependent on the table-access mechanisms defined by the network management protocol.

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to delete an IP route from the MGX 8260 Media Gateway routing table.

Examples

The following example deletes indirect IP route 10.1.1.1:

```
deliproute 10.1.1.1
```

Related Commands

Command	Description
addiproute	Add an IP route
lsiproute	List an IP route
lsiproutes	List IP routes

delm13

Delete DS1 to DS3 map.

delm13 *DS3Line DS1Line NumLines*

Syntax Description

DS3Line	The number of the source DS3 line. When deleting more than one DS1, the range may span additional DS3s. Values: 1 - 6
DS1Line	The number of the DS1 line, or starting DS1 line, within the DS3 line. Values: 1 - 28
NumLines	The number of map pairs to add. Values: 1 - 192, depending on the number of mappings in a contiguous sequence

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to delete one or more DS3 to DS1 mappings from Distribution Matrix Card (DMC) to the Narrowband Service Card (NSC). To delete a single point, omit the NoOfLines argument.

Examples   The following example deletes three sequential map table entries, starting at DS3 line 1, DS1 line 1:

```
delm13 1 1 3
```

Related Commands

Command	Description
addm13	Add map to DS1 from DS3
chm13	Change DS1 to DS3 map
lsm13	List DS3-to-DS1 mapping
lsm13s	List DS3-to-DS1 mappings

delmacsapprof

Delete a MACSAP profile.

delmacsapprof *Index*

Syntax Description

Index	This object is the identifier of a MAC SAP. Values: 1 - 16.

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to delete a MACSAP profile from the MGX 8260 Media Gateway. Profiles used by existing D Channels should not be deleted.

Examples

The following example deletes profile 3.

```
delmacsapprof 3
```

Related Commands

Command	Description
addmacsapprof	Add a MACSAP profile
lsmacsapprof	List information about a MACSAP profile
lsmacsapprofs	List all MACSAP profiles
lsmacsapstat	List statistics for a MACSAP interface
lsmacsapstats	List MACSAP statistics

delreds

Delete a card redundancy pair.

delreds *Slot1 Slot2*

Syntax Description

Slot1	Physical location of the primary card in the chassis. Valid settings: 1-8 and 11-16.
Slot2	Physical location of the secondary card in the chassis. Valid settings: 1-8 and 11-16.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to delete card redundancy between the primary and secondary slot.

Examples   The following example deletes the redundancy relationship between cards 1 and 3.

```
delreds 1 3
```

Related Commands

Command	Description
addreds	Add a card redundancy pair
lsreds	List card redundancy pairs
swcd	Switch to redundant NSC

delsess

Delete an MGCP session manager.

delsess *SessionSetId GroupId SessionId*

Syntax Description

SessionSetId	The index of the session set to which the group containing the session manager belongs. Values: 1-6.
GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2.
SessionId	The index of this session. Values: 1 or 2

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to delete a session manager from a session group.

Examples

The following example deletes session manager 1 from session group 1 of set 1:

```
delsess 1 1 1
```

Related Commands

Command	Description
addsess	Add a session manager
addsset	Add a session set
addsgrp	Add a session group
delsset	Delete a session set
delsgrp	Delete a session group

delsgrp

Delete an MGCP session group

delsgrp *SessionSetId GroupId Repetitions*

Syntax Description		
	SessionSetId	The index of this session. Values: 1 or 2
	GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2
	Repetitions	The number of groups to delete

Defaults

Repetitions: 1

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to delete a session group from a session set.

Examples

The following example deletes session group 1 from session set 1:

```
delsgrp 1 1
```

Related Commands

Command	Description
addsess	Add a session manager
addsset	Add a session set
addsgrp	Add a session group
delsess	Delete a session manager
delsset	Delete a session set

delsonetln

Delete SONET lines.

delsonetln *Location [numOfLines]*

Syntax Description

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
numOfLines	The number of lines to delete. Values: 1-4.

Defaults   *numOfLines: 1*

Command Modes   Security level 3

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to delete SONET lines from the OC-3 SCC and back card. You can delete a single line or a range of lines with this command. The system deletes lines one at a time and aborts on the first failure, even if subsequent changes could have succeeded. The system issues an error message for partially fulfilled requests.

Examples   The following example deletes SONET lines 3 and 4 in slot 9:

```
delethln 9.3 2
```

Related Commands

Command	Description
addsonetln	Add a SONET line
chsonetln	Change a SONET line
lssonetln	List information about a SONET line
lssonetlns	List information about all SONET lines

delsrt

Delete a static route.

delsrt *Addr Location*

Syntax Description

Addr	An address in dotted notation w.x.y.z of the destination of an existing static route
Location	The slot and line number, delimited by a period, of the origin of the static route

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Deletes a static route from an MGX 8260 Media Gateway to a network IP address.

Examples   The following example deletes a static route from slot 1 line 1 of the MGX 8260 Media Gateway to IP address 12.1.1.0.

```
delsrt 12.1.1.0 1.1
```

Related Commands

Command	Description
addsrt	Add static route
lssrt	List information about a static route
lssrts	List information about all static routes

delsset

Delete an MGCP session set.

delsset *SessionSetId*

Syntax Description

SessionSetId	The index of the session set to which the group containing the session manager belongs. Values: 1-6.

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to delete a session set.

Examples

The following example deletes session set 1:

```
delsset 1
```

Related Commands

Command	Description
addsess	Add a session manager
addsgrp	Add a session group
delsess	Delete a session manager
delsset	Delete a session set
delsgrp	Delete a session group

deltmgr

Delete trap manager.

deltmgr *Addr*

Syntax Description

Addr	The address of the SNMP manager who wants to discontinue notification of trap events.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Deletes a manager from the registered list to receive SNMP trap events.

Examples   The following example deletes the manager entry at address 10.2.2.5.

```
deltmgr 10.2.2.5
```

Related Commands

Command	Description
addtmgr	Add trap manager
delcms	Delete community string
lstmgrs	List information about all trap managers
lstmgr	List information about a trap manager

delusp

Delete user profile.

delusp *Name*

Syntax Description

Name	The login name of a user

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to remove the profile of a user from the system.

Examples

The following example deletes a user profile for a user named booter.

```
delusp booter
```

Related Commands

Command	Description
addusp	Add user profile
chkey	Change file key

delvport

Delete voice port

delvport *Slot Port RepetitionNum WrapNum*

Syntax Description	*Slot*	The logical slot number of an NSC
	Port	The logical port number
	RepetitionNum	The number of ports to add. Values: 1 to 6944. This corresponds to 31 ports per line, 16 lines per NSC, and 14 NSCs.
	WrapNum	The DS0 number at which to wrap to the next slot. Set this to the maximum number of DS0s the NSC in your configuration. For DS1 use 384 and for E1 use 480 with CAS or 496 without CAS. Values: 1 to 512

Defaults

RepetitionNum: 1

WrapNum: 384 for DS1, 480 for E1 (CAS on)

Command Modes

Security level 3

Command History	**Release**	**Modification**
	1.0	This command was first introduced.

Usage Guidelines

Use this command to delete a voice port.

Examples

The following example deletes a voice port from slot 1, line 1.

```
delvport 1 1
```

Related Commands	**Command**	**Description**
	addvport	Add voice port
	chvport	Change voice port
	lsvport	List voice port
	lsvports	List voice ports

dnethln

Down Ethernet line.

dnethln *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the Ethernet line

Defaults

No default behavior or values.

Command Modes

Security level 4

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Deactivates an Ethernet interface.

Examples

The following example brings down the Ethernet interface from the MGX 8250 Media Gateway at slot 7 line 1, address 10.1.2.10.

```
dnethln 9.1
```

Related Commands

Command	Description
addethln	Add Ethernet line
chethln	Change Ethernet line
delethln	Delete Ethernet line
lsethln	List Ethernet line
lsethlns	List Ethernet Lines
upethln	Activate Ethernet line

exit

Log out.

exit

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines Type this command to log out from the MGX 8260 Media Gateway

Examples   The following command logs out.

```
exit
```

Related Commands

Command	Description
bye	Logs out from the MGX 8260 Media Gateway.
logout	Logs out from the MGX 8260 Media Gateway.

help

Display command help.

help [*command*]

Syntax Description

command	The command for which you want help.

Defaults

No default behavior or values.

Command Modes

Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command without an argument to list the commands available at your security level. To obtain usage information for a command, specify the command name as an argument.

Examples

The following example displays help for the **htmlversion** command.

```
help htmlversion
```

htmlversion

Display the HTML version.

htmlversion

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display version information for WebViewer HTML files.

Examples   The following example displays the HTML version.

```
htmlversion
```

logout

Logout of the MGX 8260 Media Gateway.

logout

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to end the session with the MGX 8260 Media Gateway.

Examples   The following example logs out.

```
logout
```

Related Commands

Command	Description
bye	Log out

lsacp

List information on an active call

> **lsacp** *Slot Line ID*

Syntax Description

Slot	The physical source (slot number) of an active call. Values: 1-16.
Line	The physical source (line number) of an active call. Values: 1-16.
ID	The DS0 used by an active call. Values: 1-24.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list information about the call using a specific MGX 8260 resource. The slot, line, and DS0 is valid for a given time only, because the resource is re-used after the current active call is torn down.

Examples   The following example lists information on the call on slot 1, line 1, DS0 1:

```
lsacp 3 1 1
```

Related Commands

Command	Description
lsacps	List all active calls by resource
lsact	List an active call by transaction ID
lsacts	List all active calls by transaction

lsacps

List all active calls by resource

lsacps

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to lists active calls for all slots, lines, and DS0s. Output includes the log port, and packets received and transmitted.

Examples   The following examples lists active calls.

```
lsacps
```

Related Commands

Command	Description
lsacp	List active call by resource
lsact	List an active call by transaction ID
lsacts	List all active calls by transaction

lsact

List an active call by transaction ID.

lsact *ID*

Syntax Description

ID	A unique identifier of an active call. Values: index number

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to list active call information for a specific transaction ID. The transaction ID is re-used after the current active call is torn down.

Examples

The following example lists the call identified by transaction ID 2315

```
lsact 2315
```

Related Commands

Command	Description
lsacp	List active call by resource
lsacps	List all active calls by resource
lsacts	List all active calls by transaction

lsacts

List all active call by transaction.

lsacts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Output includes the transaction number, the slot, line, and DS0 of the source, the log port, and the packets received and transmitted.

Examples   The following example lists the call identified by transaction ID 2315

```
lsacts
```

Related Commands

Command	Description
lsacp	List active call by resource
lsacps	List all active calls by resource
lsact	List active call by transaction ID

lsalms

List alarms.

lsalms

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays the status of all shelf alarms and card and software errors. For more information, see Monitoring Shelf Alarms, page 6-2.

Examples   The following example lists alarms.

```
lsalms
```

Related Commands

Command	Description
clralmhist	Clear alarm history

lsannfile

List the given announcement file.

lsannfile *fid*

Syntax Description	*fid*	The announcement file ID. Values: 1-100

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   You use this command to list information about the given announcement file. For more information, see Viewing Announcement Files, page 4-33.

Examples   The following command lists announcement files 62.

```
lsannfile 62
```

Related Commands

Command	Description
acannfile	Activate an announcement file
deacannfile	Deactivate an announcement file
rmannfile	Remove an announcement file
lsannfiles	Lists all announcement files
lsdurationif	List duration information about announcement files

lsannfiles

List all announcement files.

lsannfiles

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 4

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   You use this command to list all announcement files. For more information, see Viewing Announcement Files, page 4-33.

Examples   The following command lists all announcement files.

```
lsannfiles
```

Related Commands

Command	Description
acannfile	Activate an announcement file
deacannfile	Deactivate an announcement file
rmannfile	Remove an announcement file
lsannfile	List the given announcement file
lsdurationif	List duration information about announcement files

lsbertds1

List DS1 BERT results.

lsbertds1 *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

- NSC: 1-8 and 11-16
- BSC: 11-16

Valid line numbers:

- NSC: 1-16
- BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays the bit error rate status of the specified DS1 line. Use in conjunction with **onbertds1** and **offbertds1** to test a DS1 line. For more information, see DS1/E1 BERT Test, page 8-5.

Examples   The following example shows the BERT status of the DS1 line at slot 11 line 1.

```
lsbertds1 11.1
```

Related Commands	Command	Description
	offbertds1	Stop BERT on DS1
	onbertds1	Start BERT on DS1

lscd

List card details.

lscd *CardNum*

Syntax Description

CardNum	The card about which you want information. Values: 1-16.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list the physical and logical card number, front, back, and daughter card types, the state and service of the card, revision information, serial numbers, alarm information, the ATM queue profile number, the RAM backup, interface mode, and more. For more information, see Viewing Card Configuration and Status, page 3-2.

Examples   The following example lists information about card 8.

```
lscd 8
```

Related Commands

Command	Description
lscds	Lists information about all physical cards.
resetcd	Resets the specified card.

lscds

List cards.

> **lscds**

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list information on all cards. For more information, see Viewing Summary Information for Cards, page 3-7.

Examples   The following example lists information about all cards.

```
lscds
```

Related Commands

Command	Description
lscd	Lists information about the specified physical card.
resetcd	Resets the specified card.

lsclksrcs

List all clock sources.

lsclksrcs

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display all clock sources. For more information, see Viewing Clock Parameters, page 2-13.

Examples   The following example lists clock sources.

```
lsclksrcs
```

Related Commands

Command	Description
chpclksrc	Change primary clock parameters
chsclksrc	Change secondary clock parameters
swclk	Switch clock

lscms

List a community strings.

lstmgr *Index*

Syntax Description	*Index*	The index number of the community string

Defaults No default behavior or values.

Command Modes Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines Displays information about the community string and SNMP manager IP address. For more information, see Assigning a tftp Security Key, page 2-6.

Examples The following example lists information about community string 1.

```
lscms 1
```

Related Commands

Command	Description
addtmgr	Add trap manager
clrtraps	Clear traps
delcms	Delete community string
lscmss	List community strings
lstmgrs	List trap managers

lscmss

List trap managers.

lscmss

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display summary information about all community strings. For more information, see Assigning a tftp Security Key, page 2-6.

Examples   The following example lists all community strings.

```
lscmss
```

Related Commands

Command	Description
addtmgr	Add trap manager
clrtraps	Clear traps
delcms	Delete community string
lscms	List community string
lstmgr	List trap manager

lsdate

List system date, time, and time zone.

lsdate

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the system time and date. For more information, see Viewing Node Parameters, page 2-6.

Examples   The following example displays node information.

```
lsdate
```

Related Commands

Command	Description
chdate	Change the date and time

lsdchan

List information about a D Channel.

lsdchan *Index*

Syntax Description

Index	The slot and line number, delimited by a period, of the new D Channel.

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to list information about a D Channel, such as its frame length, DS0, retransmission count, and more. For more information, see Viewing D Channels, page 5-26.

Examples

The following example lists a D Channel of line 1 on slot 14:

```
lsdchan 14.1
```

Related Commands

Command	Description
adddslp	Add a DLSAP profile
addmacsapprof	Add a MACSAP profile
deldchan	Delete a D Channel
lsdchans	List information about D Channels

lsdchans

List information about all D Channels.

> **lsdchans**

Syntax Description   This command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list information about all D Channels. For more information, see Viewing D Channels, page 5-26.

Examples   The following example lists information about all D Channels:

```
lsdchans
```

Related Commands

Command	Description
adddslp	Add a DLSAP profile
addmacsapprof	Add a MACSAP profile
deldchan	Delete a D Channel
lsdchan	List information about a D Channel

lsdlsapstat

List statistics for a DLSAP.

lsdlsapstat *Index*

Syntax Description	*Index*	The identifier of a DLSAP Profile. Values: 1 - 20.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list statistics for a DLSAP, such as received and transmitted information frames, receive ready frames, disconnect frames, frame reject frames, and more. For more information, see Viewing DLSAP Statistics, page 5-24.

Examples   The following example lists a D Channel of line 1 on slot 14:

```
lsdlsapstat 2
```

Related Commands

Command	Description
adddslp	Add a DLSAP profile
addmacsapprof	Add a MACSAP profile
deldchan	Delete a D Channel
lsdchans	List information about D Channels

lsdlsapstats

List DLSAP statistics.

lsdlsapstats

Syntax Description   This command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list summary DLSAP statistics. For more information, see Viewing DLSAP Statistics, page 5-24.

Examples   The following example lists DLSAP statistics.

```
lsdlsapstats
```

Related Commands

Command	Description
adddslp	Add a DLSAP profile
addmacsapprof	Add a MACSAP profile
deldchan	Delete a D Channel
lsdchans	List information about D Channels

lsdlsapstatus

List status for a DLSAP.

lsdlsapstatus *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

- NSC: 1-8 and 11-16
- BSC: 11-16

Valid line numbers:

- NSC: 1-16
- BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list the DLSAP status for the DS1 line, including outstanding frames, number of frames dropped by MAC, the busy status, flow control state, retransmission count, queue size, and active SAPs and DLCs. For more information, see Viewing DLSAP Status, page 5-23.

Examples   The following example lists the DLSAP status of line 1 on slot 11.

```
lsdlsapstatus 11.1
```

Related Commands	Command	Description
	deldlsp	Delete a DLSAP profile
	lsdlsapstat	List statistics for a DLSAP
	lsdlsapstats	List DLSAP statistics
	lsdlsp	List a DLSAP profile
	lsdlsps	List DLSAP profiles

lsdlsp

List a DLSAP profile.

lsdlsp *Num*

Syntax Description

Num	The DLSAP profile number associated with the D Channel. Values: 1-20.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list the DLSAP profile information, including frame length, window size, retranmission count, timer, modulo, DLC, and TEI information. For more information, see Viewing DLSAP Profiles, page 5-22.

Examples   The following example lists the information for DLSAP profile 5.

```
lsdlsp 5
```

Related Commands

Command	Description
deldlsp	Delete a DLSAP profile
lsdlsapstat	List statistics for a DLSAP
lsdlsapstats	List DLSAP statistics
lsdlsapstatus	List status for a DLSAP
lsdlsps	List DLSAP profiles

lsdlsps

List summary DLSAP profile information.

lsdlsps

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list summary DLSAP information for all profiles. For more information, see Viewing DLSAP Profiles, page 5-22.

Examples   The following example lists the information for DLSAP profiles.

```
lsdlsps
```

Related Commands

Command	Description
deldlsp	Delete a DLSAP profile
lsdlsapstat	List statistics for a DLSAP
lsdlsapstats	List DLSAP statistics
lsdlsapstatus	List status for a DLSAP
lsdlsp	List a DLSAP profile

lsds0

List a DS0 entry.

lsds0 *Num*

Syntax Description	
SlotNum	The slot number of the card with the DS1 line. Valid slot numbers:
	• NSC: 1-8 and 11-16
	• BSC: 11-16
SlotNum	The DS1 line number with the DS0 channel. Valid line numbers:
	• NSC: 1-16
	• BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

DS0Num	The number of the DS0 channel. Valid entries: 1-24 for DS1 and 1-31 for E1

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list information on the specified DS0.

Examples   The following example lists information on channel 1 of line 1 in slot 11.

```
lsds0 11 1 1
```

lsds0s

List all DS0 entries.

lsds0s

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list all configured DS0.

Examples   The following example lists all DS0 entries.

```
lsds0s
```

lsds1alm

List all alarm thresholds for a DS1 line.

lsds1alm *Location*

Syntax Description	*Location* — The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

Syntax Description

Location   The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

- NSC: 1-8 and 11-16
- BSC: 11-16

Valid line numbers:

- NSC: 1-16
- BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to list DS1 line alarm thresholds, such as Red, RAI, and Perf Alarm Severity. For more information, see Viewing DS1 Alarm Thresholds, page 6-6.

Examples

The following example lists DS1 alarm threshold levels for line 1 of slot 11.

```
lsds1alm 11.1
```

lsds1curst

List DS1 current statistics.

lsds1cursts *Location*

Syntax Description	*Location* The slot and line number, delimited by a period, of the DS1 line

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines Use this command to display the performance statistics of the current 15-minute collection period for the specified DS1 line. For more information, see Viewing Current T1 Statistics, page 7-1.

Examples The following example shows the performance statistics of the DS1 line at slot 1 line 1.

```
lsds1curst 1.1
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

lsds1cursts

List DS1 current statistics.

lsds1cursts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the performance statistics of the current 15-minute collection period for all DS1 lines. For more information, see Viewing Current T1 Statistics, page 7-1.

Examples   The following example displays DS1 statistics.

```
lsds1cursts
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

lsds1intst

List DS1 interval statistics.

lsds1intst *Location Num*

Syntax Description		
Location		The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

    • NSC: 1-8 and 11-16

    • BSC: 11-16

Valid line numbers:

    • NSC: 1-16

    • BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Num	A number specifying an interval, where 1 is the most recently completed 15 minute interval and 96 is the least recently completed 15 minutes interval (assuming that all 96 intervals are valid). Values: 1-96.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays the specified interval of DS1 line performance that were gathered every 15-minutes over the past 24 hours. Fails if the interval does not exist. For more information, see Viewing Interval T1 Statistics, page 7-2.

Examples   The following example shows performance statistics for the DS1 line at slot 1 line 1.

```
lsds1intst 1.1 5
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List all DS1current statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

lsds1ln

List DS1 line information.

lsds1ln *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:

- NSC: 1-8 and 11-16
- BSC: 11-16

Valid line numbers:

- NSC: 1-16
- BSC: 1-168 as shown by the following table of DS1 to DS3 mappings.

DS3 Line Number	DS1 Line Number
501	1-28
502	29-56
503	57-84
504	85-112
505	113-140
506	141-168

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display configuration and alarm information about a DS1 lines. For more information, see Viewing DS1/E1 Configuration and Status, page 4-3.

Examples   The following example lists configuration information about the DS1 line at slot 1 line 12.

```
lsds1ln 1.12
```

Related Commands	Command	Description
	addds1ln	Add DS1 line
	chds1alm	Change DS1 alarm severity and thresholds
	chds1ln	Change DS1 line
	clrds1lnst	Clear DS1 line statistics
	delds1ln	Delete DS1 line
	lsbertds1	List DS1 BERT results
	lsds1alm	List DS1 alarm thresholds
	lsds1curst	List DS1 current statistics
	lsds1cursts	List all DS1current statistics
	lsds1intst	List DS1 line interval statistics
	lsds1lns	List DS1 lines
	lsds1lnst	List DS1 line statistics
	lsds1totst	List DS1 total statistics
	lsds1totsts	List DS1 total statistics
	lslns	List existing lines

lsds1lns

List all DS1 lines.

lsds1lns

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the configuration and alarm information for all DS1 lines. For more information, see Viewing Summary DS1/E1 Information, page 4-6.

Examples   The following example displays information about all DS1 configurations and alarms.

```
lsds1lns
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List statistics for all DS1 lines
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

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lsds1lnst

List DS1 line statistics.

lsds1lnst *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line.

Defaults   No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines Use this command to display the real-time statistics of the specified DS1 line. For more information, see Viewing T1 Real-Time Alarm Statistics, page 7-3.

Examples   The following example displays the real-time statistics of the DS1 line at slot 1 line 1.

```
lsds1lnst 1.1
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List statistics for all DS1 lines
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lslns	List existing lines

lsds1totst

List DS1 total statistics.

> **lsds1totst** *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the DS1 line.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the totals of performance statistics of the specified DS1 line gathered over the past 24 hours. For more information, see Viewing Total T1 Statistics, page 7-2.

Examples   The following example shows the totals of performance statistics of the DS1 line at slot 1 line 1 over the past day.

```
lsds1totst 1.1
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List statistics for all DS1 lines
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 statistics

Command	Description
lsds1totsts	List DS1 total statistics
lslns	List existing lines

lsds1totsts

List DS1 total statistics.

lsds1totsts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays totals of the performance statistics of the all DS1 lines over the past day. For more information, see Viewing Total T1 Statistics, page 7-2.

Examples   The following example displays statistics of DS1 lines over the past day.

```
lsds1totsts
```

Related Commands

Command	Description
addds1ln	Add DS1 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
clrds1lnst	Clear DS1 line statistics
delds1ln	Delete DS1 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List statistics for all DS1 lines
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lslns	List existing lines

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lsds3alm

List DS3 alarm.

lsds3alm *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS3 line.
	Valid slot numbers:
	BSC: 11-16
	DMC: 7 or 8 (reserved for future use)
	Valid line numbers:
	BSC: 501-506
	DMC: 1-6 (reserved for future use)

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card addition - no functional change

Usage Guidelines

Use this command to display the DS3 line alarm thresholds for a given line. For more information, see Viewing DS3 Alarm Thresholds, page 6-13.

Examples

The following example shows the alarm thresholds of the DS3 line at slot 7 line 1.

```
lsds3alm 7.1
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3curst	List DS3 current statistics
lsds3intst	List DS3 interval statistics

Command	Description
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3curst

List DS3 current statistics.

lsds3curst *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS3 line.
	Valid slot numbers:
	BSC: 11-16
	DMC: 7 or 8 (reserved for future use)
	Valid line numbers:
	BSC: 501-506
	DMC: 1-6 (reserved for future use)

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines

Displays the performance statistics of the current 15-minute collection period for the specified DS3 line. For more information, see Viewing Current DS3 Statistics, page 7-12.

Examples

The following example shows the performance statistics of the DS3 line at slot 7 line 1.

```
lsds3curst 7.1
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3cursts	List all current DS3 statistics

Command	Description
lsds3intst	List DS3 interval statistics
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3cursts

List current statistics for all DS3 lines.

lsds3cursts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines   Use this command to display the location of the DS3, errored seconds, severely errored seconds, UAS seconds, and LCV seconds. For more information, see Viewing Current DS3 Statistics, page 7-12.

Examples   The following example displays DS3 statistics.

```
lsds3cursts
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3curst	List current DS3 line statistics
lsds3intst	List DS3 interval statistics
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3intst

List DS3 interval statistics.

lsds3intst *Location Num*

Syntax Description	

Location	The slot and line number, delimited by a period, of the DS3 line.
	Valid slot numbers:
	BSC: 11-16
	DMC: 7 or 8 (reserved for future use)
	Valid line numbers:
	BSC: 501-506
	DMC: 1-6 (reserved for future use)
Num	A number specifying an interval, where 1 is the most recently completed 15 minute interval and 96 is the least recently completed 15 minutes interval (assuming that all 96 intervals are valid). Values: 1-96.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines   Use this command to display one of the 96 records of DS3 line performance that were gathered every 15-minutes over the past 24 hours. For more information, see Viewing Interval DS3 Statistics, page 7-13.

Examples   The following example shows performance statistics for the DS3 line at slot 7 line 1.

```
lsds3intst 7.1 1
```

Related Commands

Command	Description
adddds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line

Command	Description
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3curst	List current DS3 line statistics
lsds3ln	List DS3 line
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3ln

List DS3 line and configuration.

lsds3ln *Location*

Syntax Description	*Location* The slot and line number, delimited by a period, of the DS3 line.

Valid slot numbers:

BSC: 11-16

DMC: 7 or 8 (reserved for future use)

Valid line numbers:

BSC: 501-506

DMC: 1-6 (reserved for future use)

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines

Use this command to display configuration information about one DS3 line. For more information, see Viewing DS3 Configuration and Status, page 4-8.

Examples

The following lists configuration information about the DS3 line at slot 7 line 1.

```
lsds3ln 7.1
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3curst	List current DS3 line statistics

Command	Description
lsds3intst	List DS3interval statistics
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3lns

List DS3 lines.

lsds3lns

Syntax Description

The command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines

Use this command to display the configuration information for all DS3 lines. For more information, see Viewing Summary DS3 Information, page 4-10.

Examples

The following example displays all DS3 line configurations.

```
lsds3lns
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3curst	List current DS3 line statistics
lsds3intst	List DS3 interval statistics
lsds3ln	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3lnst

List real-time statistics for a DS3 line.

lsds3lnst

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines   Use this command to display Loss of Signal, Out Of Frame, RAI, CCV, Framing Pattern Errors, PBit Parity Errors, and Far End Block Errors. For more information, see Viewing DS3 Real-Time Alarm Statistics, page 7-13.

Examples   The following example displays real-time statistics for slot 14 line 501.

```
lsds3lnst 14.501
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm
lsds3curst	List current DS3 line statistics
lsds3intst	List DS3 interval statistics
lsds3ln	List DS3 line
lsds3lns	List DS3 lines
lsds3totst	List DS3 total statistics

lsds3totst

List DS3 total statistics.

lsds3totst *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS3 line.
	Valid slot numbers:
	BSC: 11-16
	DMC: 7 or 8 (reserved for future use)
	Valid line numbers:
	BSC: 501-506
	DMC: 1-6 (reserved for future use)

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.
1.1	BSC card inclusion - no functional change

Usage Guidelines   Use this command to display the totals of performance statistics of the specified DS3 line gathered over the past 24 hours. For more information, see Viewing Total DS3 Statistics, page 7-12.

Examples   The following example shows the totals of performance statistics of the DS3 line at slot 7 line 1 over the past day.

```
lsds3totst 7.1
```

Related Commands

Command	Description
addds3ln	Add DS3 line
chds3alm	Change DS3 line alarm
chds3ln	Change DS3 line
clrds3lnst	Clear statistics for DS3 line
delds3ln	Delete DS3 line
lsds3alm	List DS3 alarm

Command	Description
lsds3curst	List current DS3 line statistics
lsds3intst	List DS3interval statistics
lsds3lns	List DS3 line
lsds3ln	List DS3 lines

lsdsps

List DSP multiservice modules.

lsdsps

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list all DSP multiservice modules (MSMs) and their operational status. For more information, see Viewing MSM Configuration and Status, page 3-7.

Examples   The following example lists DSP MSMs.

```
lsdsps
```

Related Commands

Command	Description
lsmsms	List multiservice modules

lsdurationif

List duration information about announcement files.

lsdurationif

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   You use this command to list the maximum, current, and available duration of announcement files.

Examples   The following command lists duration information about announcement files.

```
lsdurationif
```

Related Commands

Command	Description
acannfile	Activate an announcement file
deacannfile	Deactivate an announcement file
rmannfile	Remove an announcement file
lsannfile	List the given announcement file
lsannfiles	List all announcement files

lse1alm

List all alarm thresholds for a E1 line.

lse1alm *Location*

Syntax Description	*Location* The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines Use this command to list E1 line alarm thresholds, such as Red, RAI, and Perf Alarm Severity. This command only applies to BSC lines. For more information, see Viewing E1 Alarm Thresholds, page 6-10.

Examples The following example lists E1 alarm threshold levels for line 1 of slot 3.

```
lse1alm 3.1
```

lse1alrm

List all alarms for a E1 line.

lse1alrm *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list E1 line alarms, such as Red, RAI, and Perf Alarm Severity. This command only applies to BSC lines. For more information, see Viewing E1 Alarms, page 6-8.

Examples   The following example lists E1 alarms for line 1 of slot 3.

```
lse1alrm 3.1
```

lse1curst

List current E1 current statistics.

> **lse1curst** *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display the E1 performance statistics of the current 15-minute collection period. This command only applies to BSC lines. For more information, see Viewing Current E1 Statistics, page 7-5.

Examples   The following example lists E1 current statistics for line 1 of slot 3.

```
lse1curst 3.1
```

lse1cursts

List all E1 current statistics.

lse1curst

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display all E1 performance statistics for the current 15-minute collection period. This command only applies to BSC lines. For more information, see Viewing Current E1 Statistics, page 7-5.

Examples   The following example lists all E1 current statistics for the chassis.

```
lse1cursts
```

lse1intst

List E1 interval statistics.

lse1intst *Location Num*

Syntax Description

Location	The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16
Num	A number specifying an interval, where 1 is the most recently completed 15 minute interval and 96 is the oldest 15 minutes interval (assuming that all 96 intervals are valid). Values: 1-96.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Displays the specified interval of E1 line performance. Interval statistics are gathered every 15-minutes over the past 24 hours. The request fails if the interval does not exist (has not been collected). This command only applies to BSC lines. For more information, see Viewing Interval E1 Statistics, page 7-7.

Examples   The following example lists interval 2 statistics for line 1 of slot 3.

```
lse1intst 3.1 2
```

lse1lnst

List real-time E1 line statistics.

lse1lnst *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines Use this command to display the real-time statistics and alarms for the specified E1 line. This command only applies to BSC lines. For more information, see Viewing E1 Real-Time Alarm Statistics, page 7-8.

Examples The following example lists E1 line statistics for line 1 of slot 3.

```
lse1lnst 3.1
```

lse1lnsts

List all real-time E1 line statistics.

lse1lnsts

Syntax Description

The command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to display the real-time statistics and alarms for the specified E1 line. This command only applies to BSC lines. For more information, see Viewing E1 Real-Time Alarm Statistics, page 7-8.

Examples

The following example lists all E1 current statistics for the chassis.

```
lse1lnsts
```

lse1perf15

List 15-minute performance alarms for an E1 line.

lse1perf15 *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display 15-minute performance alarms for an E1 line. This command only applies to BSC lines. For more information, see Viewing E1 Performance Alarms, page 6-8.

Examples   The following example lists 15-minute performance alarms for line 1 of slot 3.

```
lse1perf15 3.1
```

lse1perf24

List 24-hour performance alarms for an E1 line.

lse1perf24 *Location*

Syntax Description		
Location		The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines   Use this command to display 24-hour performance alarms for an E1 line. This command only applies to BSC lines. For more information, see Viewing E1 Performance Alarms, page 6-8.

Examples   The following example lists 24-hour performance alarms for line 1 of slot 3.

```
lse1perf24 3.1
```

lse1totst

List total statistics.

lse1totst *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the line. Valid slots: 1-8 and 11-16. Valid lines: 1-16

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to display the totals of performance statistics gathered over the past 24 hours for the specified line. This command only applies to BSC lines. For more information, see Viewing Total E1 Statistics, page 7-6.

Examples

The following example lists E1 total statistics for line 1 of slot 3.

```
lse1totst 3.1
```

lse1totsts

List total statistics for all E1 lines.

lse1totsts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display performance statistics totals gathered over the past 24 hours for all lines. This command only applies to BSC lines. For more information, see Viewing Total E1 Statistics, page 7-6.

Examples   The following example lists all total statistics for the all E1 lines.

```
lse1totsts
```

lsem

List email server.

lsem

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list email server information and source email addresses. For more information, see Listing Email Server and Email Alert Registrations, page 6-26.

Examples   The following example lists email service information.

```
lsem
```

Related Commands

Command	Description
addereg	Add email registration
chem	Configure email registration
chereg	Change email registration
delereg	Delete email registration
lsereg	List entry registered
lseregs	List registered email alerts

lsemm

List sensor environmental monitoring data.

lsemm *UnitID SensorType SensorID*

Syntax Description	*UnitID*	The unit identifier:
		1=slot1
		2=slot2
		3=slot3
		4=slot4
		5=slot5
		6=slot6
		7=slot7
		8=slot8
		9=slot9
		10=slot10
		11=slot11
		12=slot12
		13=slot13
		14=slot14
		15=slot15
		16=slot16
		100=chassis
	SensorType	Temperature, fan, or voltage sensor. Values: 1 - 3, respectively. Fan (3) is valid only with the chassis unit ID (100). For more information, see "Monitoring Environmental Alarms" section on page 6-19
	SensorID	The identifier that is usually on the top or bottom of the card, or next to the CPU. Values: an integer.

Defaults   *No default behavior or values*

Command Modes   Security level 6

Command History	Release	Modification
	1.0	This command was first introduced.

Usage Guidelines   Use this command to display the specified environmental measurement taken by a single sensor. Sensors measure the following conditions: temperature of the chassis, Switch Control Card (SCC) and Narrowband Service Card (NSC); the voltage of the chassis and all cards, SCC, NSC, and Distribution Matrix Card (DMC); the fan speed of the chassis. Output is degrees Celsius for temperature, volts for chassis, percentage of voltage for card, and RPM for fan sensor. For more information, see Viewing Environmental Information, page 6-21.

Examples   The following example lists the voltage of the chassis.

```
lsemm 100 3 99923
```

Related Commands

Command	Description
lsemms	List environmental monitoring sensors

lsemms

List environmental monitoring sensors.

lsemms

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display environmental measurements taken from all sensors in the cards and chassis: the temperature of the chassis, Switch Control Card (SCC), and NSC services module; the voltage of the chassis and all cards, SCC, Narrowband Service Card (NSC), and Distribution Matrix Card (DMC); the fan speed of the chassis. For more information, see Viewing Environmental Summary Information, page 6-24.

Examples   The following example lists environmental monitoring sensors.

```
lsemms
```

Related Commands

Command	Description
lsemm	List sensor environmental monitoring data

lsereg

List entry registered.

lsereg *Index*

Syntax Description	*Index* Position of the email address in the SnmpEmailRegTable. Values: integer.

Defaults No default behavior or values.

Command Modes Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines Lists an entry registered for email alerts. For more information, see Listing Email Server and Email Alert Registrations, page 6-26.

Examples The following example lists the email address at position 10 in the registration table.

```
lsereg 10
```

Related Commands

Command	Description
addereg	Add email registration
chem	Configure email registration
chereg	Change email registration
delereg	Delete email registration
lsem	List email server
lseregs	List registered email alerts

lseregs

List registered email alerts.

     lseregs

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display list all entries registered for email alerts. For more information, see Listing Email Server and Email Alert Registrations, page 6-26.

Examples   The following example lists entries registered for email alerts.

```
lsemms
```

Related Commands

Command	Description
addereg	Add email registration
chereg	Change email registration
delereg	Delete email registration
lsem	List email server
lsereg	List registered email alert

lsethln

List Ethernet line.

lsethln *Location*

Syntax Description	

Location	The slot and line number, delimited by a period, of the Ethernet line. Valid slots: 9 or 10. Valid lines: 1-4.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the configuration information for the Ethernet interface at the line specified. For more information, see Viewing Fast Ethernet Configuration and Status, page 4-14.

Examples   The following example lists Ethernet configuration at slot 9 line 1.

```
lsethln 9.1
```

Related Commands

Command	Description
addethln	Add Ethernet line
chethln	Change Fast Ethernet line
delethln	Delete Ethernet line
dnethln	DeActivate Ethernet line
lsethlns	List Ethernet Lines
upethln	Activate Ethernet line

lsethlns

List Ethernet lines.

lsethlns

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the configuration information for all Ethernet interfaces. For more information, see Viewing Fast Ethernet Configuration and Status, page 4-14.

Examples   The following example lists Ethernet lines.

```
lsethlns
```

Related Commands

Command	Description
addethln	Add Ethernet line
chethln	Change Fast Ethernet line
delethln	Delete Ethernet line
dnethln	DeActivate Ethernet line
lsethln	List Ethernet line
upethln	Activate Ethernet line

lsevt

List event log.

lsevt

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the date and time of the event, a description of the event, and active alarms. For more information, see

Examples   The following example lists the event log.

```
lsevt
```

Related Commands

Command	Description
clrevt	Clear event log

lssgrp

List information for an RUDP session group.

lssgrp *SetID GroupID*

Syntax Description

SetID	Session set identifier. Value: integer.
GroupID	Session group identifier.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   A session group consists of one or more RUDP sessions. A session represents the 'physical' connection between the media gateway and media gateway controller. This command lists detail configuration and status information for a single session group. For more information, see Viewing Session Groups, page 5-13.

Examples   The following example lists information about session group 1.

```
lssgrp 1 2
```

Related Commands

Command	Description
lsgroups	List detailed information for all RUDP session groups
lsgroupstat	List statistics for an RUDP session group

lssgrps

List detailed information for all RUDP session groups.

lssgrps

Syntax Description The command has no arguments or keywords.

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines A session group consists of one or more RUDP sessions. A session represents the 'physical' connection between the media gateway and media gateway controller. This command lists summary configuration and status information for all groups. For more information, see Viewing Session Groups, page 5-13.

Examples The following example lists statistics for all RUDP session groups.

```
lssgrps
```

Related Commands

Command	Description
lsgroup	List information for an RUDP session group
lsgroupstat	List statistics for RUDP groups

lsgroupstat

List statistics for an RUDP session group.

lsgroupstat *Index*

Syntax Description

Index	Session group identifier. Use lsgroups to determine valid identifiers. Value: integer.

Defaults

No default behavior or values.

Command Modes

Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

A session group consists of or more RUDP sessions. A session represents the 'physical' connection between the media gateway and media gateway controller. This command lists statistics for a single session group. For more information, see Viewing Session Group Statistics, page 5-16.

Examples

The following example lists statistics for session group 1.

```
lsgroupstat 17
```

Related Commands

Command	Description
lsgroup	List detailed information for an RUDP session group
lsgroups	List detailed information for all RUDP session groups

lsipdc

List IPDC Soft Switch configuration.

lsipdc

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list the IPDC Soft Switch configuration. For more information, see Viewing IPDC Settings, page 5-33.

Examples   The following example lists the IPDC Soft Switch configuration.

```
lsipdc
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdctimer	List IPDC Timer Configuration
lsipdccot	List IPDC COT Configuration

lsipdccot

List IPDC COT configuration.

lsipdccot

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command list the IPDC COT configuration. For more information, see Viewing IPDC COT Information, page 5-36.

Examples   The following example lists the IPDC COT configuration.

```
lsipdccot
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdctimer	List IPDC Timer Configuration

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lsipdctimer

List IPDC timer configuration.

lsipdctimer

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list the IPDC timer configuration. For more information, see Viewing IPDC Timer and Retry Counter Information, page 5-35.

Examples   The following example lists the IPDC timer configuration.

```
lsipdctimer
```

Related Commands

Command	Description
chipdcpssip	Change IPDC primary Soft Switch IP and TCP port
chipdcsssip	Change IPDC secondary Soft Switch IP and TCP port
chipdcgwip	Change IPDC gateway IP and TCP port
chipdcssid	Change IPDC system ID
chipdcsstype	Change IPDC system type
chipdcssbaynum	Change IPDC Bay Number
chipdcmaxm	Change IPDC Maximum Modules
chipdcssnumfor	Change IPDC Numbering format
chipdcssadm	Change IPDC Admin Status
chipdcsshlth	Change IPDC Health Check
chipdctimer	Change IPDC Timers
chipdccot	Change IPDC COTs
chpseudoip	Change pseudo IP address
lsipdc	List IPDC Soft Switch configuration
lsipdccot	List IPDC COT Configuration

lsiproute

List IP route

lsiproute *Dest*

Syntax Description

Dest	The destination IP address of this route. An entry of 0.0.0.0 is considered a default route.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list an IP route. For more information, see Viewing IP Routes, page 2-10.

Examples   The following example lists the IP route at 10.1.1.1:

```
lsiproute 10.1.1.1
```

Related Commands

Command	Description
addiproute	Add IP route
deliproute	Delete IP route
lsiproutes	List IP routes

lsiproutes

List IP routes

lsiproutes

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list the destination, gateway (next hop), interface index, and mask of IP routes. For more information, see Viewing IP Routes, page 2-10.

Examples   The following example lists IP routes:

```
lsiproutes
```

Related Commands

Command	Description
addiproute	Add IP route
deliproute	Delete IP route
lsiproute	List IP route

lskey

Display file key.

lskey

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the tftp security key. This key authenticates users when uploading and downloading files. For more information, see Assigning a tftp Security Key, page 2-6.

Examples   The following example displays the current tftp key.

```
lskey
```

Related Commands

Command	Description
chkey	Change tftp key.

lslapd

List general LAPD information for a card.

lslapd *Location*

Syntax Description

Location	The slot number of the card. Values: 9-16.

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to display the number of physical links, DLCs, DLCs per SAP, and ASP links. For more information, see Viewing LAPD Parameters, page 5-30.

Examples

The following example lists the LAPD information for the card in slot 10.

```
lslapd 10
```

Related Commands

Command	Description
lslapds	List information about all LAPD cards

lslapds

List information about all LAPD cards.

lslapds

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays the card number, physical links, number of DLCs, LD links, and ASP links. For more information, see Viewing LAPD Parameters, page 5-30.

Examples   The following example lists information about all LAPD cards in the MGX 8260 chassis.

```
lslapds
```

Related Commands

Command	Description
lslapd	List general LAPD information for a card

lslgcd

List upgrade information.

lslgcd *upgdLogicalCardIndex*

Syntax Description

upgdLogicalCardIndex	The logical number of the card to upgrade. Values: 1-16.

Defaults

No default behavior or values.

Command Modes

Security level 1

Command History

Release	Modification
1.1.3	This command was first introduced.

Usage Guidelines

Use this command to list upgrade information for a card.

Related Commands

Command	Description
upgd	Upgrade the software image
upgdcancel	Gracefully cancel an upgrade
upgdcmit	Commit the new software image
lslgcds	List upgrade information for all cards

lslgcds

List upgrade information for all cards.

lslgcd

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.1.3	This command was first introduced.

Usage Guidelines   Use this command to list upgrade information for all cards.

Related Commands

Command	Description
upgd	Upgrade the software image
upgdcancel	Gracefully cancel an upgrade
upgdcmit	Commit the new software image
lslgcd	List upgrade information

lslns

List all lines.

lslns

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the slot number, line number, and line type for each DS1, DS3, and Fast Ethernet line. For more information, see Viewing All MGX 8260 Lines, page 4-1.

Examples   The following example lists existing lines.

```
lslns
```

Related Commands

Command	Description
addds1ln	Add DS1 line
addds3ln	Add DS3 line
chds1alm	Change DS1 alarm severity and thresholds
chds1ln	Change DS1 line
chds3ln	Change DS3 line
clrds1lnst	Clear DS1 line statistics
clrds3lnst	Clear statistics for DS3 line
delds1ln	Delete DS1 line
delds3ln	Delete DS3 line
lsbertds1	List DS1 BERT results
lsds1alm	List DS1 alarm thresholds
lsds1curst	List DS1 current statistics
lsds1cursts	List DS1 current statistics
lsds1intst	List DS1 interval statistics
lsds1ln	List DS1 line

Command	Description
lsds1lns	List DS1 lines
lsds1lnst	List DS1 line statistics
lsds1totst	List DS1 total statistics
lsds1totsts	List DS1 total statistics
lsds3ln	List DS3 line
lsds3lns	List DS3 lines

lslogicalcarddchan

List bulk D Channel usage for a card.

lslogicalcarddchan *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the DS1 line. For example, enter slot 3 line 2 as 3.2. Valid slot numbers:
		• NSC: 1-8 and 11-16
		• BSC: 11-16

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list bulk D Channel usage by card. For more information, see Viewing D Channels, page 5-26.

Examples   The following example lists D Channels for card 2:

```
lslogicalcarddchan 2
```

Related Commands

Command	Description
lsdchan	List D Channel details for a line
lsdchans	List D Channel summaries for all lines
lslogicalcarddchans	List D Channel capacity for the chassis

lslogicalcarddchans

List D Channel capacity for the chassis.

lslogicalcarddchans

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list bulk D Channel capacity. For more information, see Viewing D Channels, page 5-26.

Examples   The following example lists D Channel capacity:

```
lslogicalcarddchans
```

Related Commands

Command	Description
lsdchan	List D Channel details for a line
lsdchans	List D Channel summaries for all lines
lslogicalcarddchan	List D Channel bulk usage for a card

lslogin

List login information.

lslogin *Index*

Syntax Description

Index	The index number of the user account. Values: 1 - 20.

Defaults

No default behavior or values.

Command Modes

Security level 1

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Displays details about a current login, including the account name, source IP address, and the date and time the session started. For more information, see Viewing Current Logins, page 2-4.

Examples

The following example information about the login with an index of 1.

```
lslogin 1
```

Related Commands

Command	Description
lslogins	View all logins

lslogins

List all active logins.

lslogins

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Displays information about all current logins, including the account names, source IP addresses, and the date and time the sessions started. For more information, see Viewing Current Logins, page 2-4.

Examples   The following example information about all current logins.

```
lslogins
```

Related Commands

Command	Description
lslogin	View login details

lsm13

List DS3-to-DS1 mapping.

lsm13 *DS3Line DS1Line*

Syntax Description

DS3Line	The number of the source DS3 line. Values: 1 - 6.
DS1Line	The number of the DS1 line, or starting DS1 line, within the DS3 line. Values: 1 - 28.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays the DS3-to-DS1 mapping. For more information, see Viewing Map Tables, page 4-13.

Examples   The following example displays mapping from DS1 line 3 within DS3 line 1.

```
lsm13 1 3
```

Related Commands

Command	Description
addm13	Add DS3-to-DS1 mapping
chm13	Change DS1 to DS3 map
delm13	Delete DS1 to DS3 map
lsm13s	List DS3-to-DS1 mappings

lsm13s

List DS3-to-DS1 mappings.

lsm13s

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays all DS3-to-DS1 mapping. For more information, see Viewing Map Tables, page 4-13.

Examples   The following example displays all DS3-to-DS1 mapping.

```
lsm13s
```

Related Commands

Command	Description
addm13	Add DS3-to-DS1 mapping
chm13	Change DS1 to DS3 map
delm13	Delete DS1 to DS3 map
lsm13	List a DS3-to-DS1 mapping

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lsmacsapprof

List information about a MACSAP profile.

lsmacsapprof *Index*

Syntax Description

Index	The identifier of a MAC SAP. Values: 1 - 16.

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Displays the interface, arbitration, LAPD type, and N202. For more information, see Viewing MACSAP Profiles, page 5-20.

Examples

The following example displays information about MAC SAP 3.

```
lsmacsapprof 3
```

Related Commands

Command	Description
addmacsapprof	Add a MACSAP profile
delmacsapprof	Delete a MACSAP profile
lsmacsapprofs	List all MACSAP profiles
lsmacsapstat	List statistics for a MACSAP interface
lsmacsapstats	List MACSAP statistics

lsmacsapprofs

List all MACSAP profiles.

lsmacsapprofs

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list summary information about MACSAP interfaces, including the MACSAP profile number, the interface, arbitration, LAPD type, and N202. For more information, see Viewing MACSAP Profiles, page 5-20.

Examples   The following example lists all MACSAP profiles.

```
lsmacsapprofs
```

Related Commands

Command	Description
addmacsapprof	Add a MACSAP profile
delmacsapprof	Delete a MACSAP profile
lsmacsapprof	List information about a MACSAP profile
lsmacsapstat	List statistics for a MACSAP interface
lsmacsapstats	List MACSAP statistics

lsmacsapstat

List statistics for a MACSAP interface.

lsmacsapstat *Index*

Syntax Description

Index	The slot and line number, delimited by a period, of the MACSAP interface.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display received frames, transmitted frames, and received bytes for a MACSAP interface. For more information, see Viewing MACSAP Statistics, page 5-21.

Examples   The following example displays statistics for the MACSAP at slot 14, line 1.

```
lsmacsapstat 14.1
```

Related Commands

Command	Description
addmacsapprof	Add a MACSAP profile
delmacsapprof	Delete a MACSAP profile
lsmacsapprof	List information about a MACSAP profile
lsmacsapprofs	List information about all MACSAP profiles
lsmacsapstats	List MACSAP statistics

lsmacsapstats

List MACSAP statistics for all interfaces.

lsmacsapstats

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays statistics for MACSAP, including the location of each MACSAP, received frames, transmitted frames, and received bytes. For more information, see Viewing MACSAP Statistics, page 5-21.

Examples   The following example displays MACSAP statistics for all interfaces

```
lsmacsapstats
```

Related Commands

Command	Description
addmacsapprof	Add a MACSAP profile
delmacsapprof	Delete a MACSAP profile
lsmacsapprof	List information about a MACSAP profile
lsmacsapprofs	List information about all MACSAP profiles
lsmacsapstat	List statistics for a MACSAP interface

lsmgcp

List MGCP core parameters.

lsmgcp

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the MGCP protocol parameters. For more information, see Viewing MGCP Status Information, page 5-8.

Examples   The following example lists MGCP core parameters.

```
lsmgcp
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chmgcpcore	Change MGCP core parameters
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcpdef	List MGCP default parameters

lsmgcpdef

List MGCP default parameters.

lsmgcpdef

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays the MGCP protocol default parameters. For more information, see Viewing MGCP Settings, page 5-5.

Examples   The following example displays default parameters for the MGCP protocol.

```
lsmgcpdef
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chmgcpcore	Change MGCP core parameters
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters

lsmgcpstat

List MGCP statistics.

lsmgcpstat

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display statistics for the MGCP protocol stack. For more information, see Viewing MGCP Protocol Statistics, page 5-9.

Examples   The following example lists statistics for the MGCP protocol stack.

```
lsmgcpstat
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chmgcpcore	Change MGCP core parameters
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters

lsmgcpvoice

List MGCP voice parameters

lsmgcpvoice

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display voice parameters for the MGCP protocol. For more information, see Viewing MGCP Settings, page 5-5

Examples   The following example displays voice parameters for MGCP.

```
lsmgcpvoice
```

Related Commands

Command	Description
chmgcplocaladdr1	Change the MGCP local address for network 1
chmgcplocaladdr2	Change the MGCP local address for network 2
chmgcpcore	Change MGCP core parameters
chmgcpvoice	Change MGCP voice parameters
chpmgcpaddr	Change the primary Media Gateway Controller addresses
chsmgcpaddr	Change the secondary Media Gateway Controller addresses
lsmgcp	List MGCP core parameters
lsmgcpdef	List MGCP default parameters
lsmgcpstat	List MGCP statistics

lsmgips

List management IP addresses.

lsmgips

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display all management IP addresses and related information. For more information, see Viewing Management Port Parameters, page 2-8.

Examples   The following example displays management IP addresses.

```
lsmgips
```

Related Commands

Command	Description
chibip	Change in-band IP
chsysip	Change system IP

lsmpc

List MPC parameters.

lsmpc

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to list MPC parameters: the default type of network, packetization period, bandwidth, echo cancellation, silence suppression, type of service, resource reservation, and COT receive and transmit tones. For more information, see Viewing Default Call Setup Parameters, page 5-7.

Examples   The following example displays MPC parameters.

```
lsmpc
```

lsmsms

List multiservice modules.

lsmsms

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list all multiservice modules (MSMs) and their operational status. For more information, see Viewing MSM Configuration and Status, page 3-7.

Examples   The following example displays multiservice modules.

```
lsmsms
```

Related Commands

Command	Description
lsdsps	List DSP multiservice modules

lsndinf

List node information.

lsndinf

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the rack number for this node, the node name and number, and the type and serial number of the back plane. For more information, see Viewing Node Parameters, page 2-6.

Examples   The following example displays node information.

```
lsndinf
```

Related Commands

Command	Description
chndinf	Change node information

lsports

List all ports.

lsports

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display information about all ports.

Examples   The following example displays information about ports.

```
lsports
```

lsreds

List redundancy pairs.

lsreds

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display card redundancy pairs. For more information, see Viewing BSC and NSC Redundancy, page 3-15.

Examples   The following example lists card redundancy pairs.

```
lsreds
```

Related Commands

Command	Description
addreds	Add card redundancy pairs
delreds	Delete card redundancy pairs

lsrudpconnstats

List statistics for an RUDP connection.

lsrudpconnstats *ID*

Syntax Description	*ID*	RUDP session identifier. Value: integer

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   The communications link between the media gateway and media gateway controller uses a Reliable UDP connection. This command lists the connection-related statistics for one link, which includes packet transmission totals and selected connection problems. For more information, see Viewing RUDP Connection Statistics, page 5-17.

Examples   The following example lists statistics for an RUDP connection.

```
lsrudpconnstats
```

Related Commands

Command	Description
lsgroupstat	List session group statistics
lsrudptxstats	List RUDP transport statistics
lssessstats	List session statistics
lssessstatslr	List session statistics since last reset

lsrudpgblstats

List global statistics for RUDP

lsrudpgblstats

Syntax Description The command has no arguments or keywords.

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines The communications link between the media gateway and media gateway controller uses Reliable UDP connections. This command lists the connection statistics for all RUDP links, which include packet totals and transmission problems.

Examples The following example lists global statistics for RUDP.

```
lsrudpgblstats
```

Related Commands

Command	Description
lsrudpconnstats	List statistics for an RUDP connection
lsrudpgblstats	List global statistics for RUDP
lssession	List RUDP session information
lsset	List session set information

lsrudptxstats

List RUDP transport statistics.

lsrudptxstats *SessionSetId GroupId SessionId*

Syntax Description		
SessionSetId	The index of the session set to which the group containing the session manager belongs. Values: 1-6.
GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2.
SessionId	The index of this session. Values: 1 or 2

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list transport RUDP statistics, including RUDP connections events and transmit failures. For more information, see Viewing RUDP Transport Statistics, page 5-17.

Examples   The following example displays RUDP parameters for session 1 of group 1 in set 1.

```
lsrudptxstats 1 1 1
```

Related Commands

Command	Description
lsgroupstat	List session group statistics
lsrudpconnstats	List RUDP connection statistics
lssessstats	List session statistics
lssessstatslr	List session statistics since last reset

lssession

List RUDP session information.

lssession *SetID GroupID SessionID*

Syntax Description		
SetID	The session set identifier. Use lssessions to determine valid identifiers. Value: integer.
GroupID	The session group identifier. Value: integer.
SessionID	The session identifier. Value: integer

Defaults No default behavior or values.

Command Modes Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines A session represents a 'physical' connection between the media gateway and media gateway controller. This command lists detail information for a single RUDP session. For more information, see Viewing Session Information, page 5-14.

Examples The following example lists information about session 33.

```
lssession 1 2 3
```

Related Commands

Command	Description
lssgrps	List session group information
lssets	List session set information

lssessions

List all RUDP sessions.

lssessions

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   A session represents a 'physical' connection between the media gateway and media gateway controller. This command lists summary information for a all RUDP sessions. For more information, see Viewing Session Information, page 5-14.

Examples   The following example lists all RUDP sessions.

```
lssessions
```

Related Commands

Command	Description
lssession	List all RUDP session
lsset	List session set information

lssessstats

List session statistics.

lssessstats *SessionSetId GroupId SessionId*

Syntax Description		
	SessionSetId	The index of the session set to which the group containing the session manager belongs. Values: 1-6.
	GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2.
	SessionId	The index of this session. Values: 1 or 2

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History	Release	Modification
	1.0	This command was first introduced.

Usage Guidelines   Use this command to list session statistics for a specific session, such as total packets and PDU information. For more information, see Viewing Session Statistics, page 5-18.

The following example displays session statistics for session 1 of group 1 in set 1.

```
lssessstats 1 1 1
```

Related Commands	Command	Description
	lsgroupstat	List session group statistics
	lsrudpconnstats	List RUDP connection statistics
	lsrudptxstats	List RUDP transport statistics
	lssessstatslr	List session statistics since last reset

lssessstatslr

List session statistics since last reset.

lssessstatslr *SessionSetId GroupId SessionId*

Syntax Description		
SessionSetId	The index of the session set to which the group containing the session manager belongs. Values: 1-6.	
GroupId	The index of the session group to which the session manager belongs. Values: 1 or 2.	
SessionId	The index of this session. Values: 1 or 2	

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History	Release	Modification
	1.0	This command was first introduced.

Usage Guidelines   Use this command to list session statistics since the last reset, such as total packets and PDU information. For more information, see Viewing Session Statistics, page 5-18.

Examples   The following example displays session statistics for session 1 of group 1 in set 1.

```
lssessstatslr 1 1 1
```

Related Commands	Command	Description
	lsgroupstat	List session group statistics
	lsrudpconnstats	List RUDP connection statistics
	lsrudptxstats	List RUDP transport statistics
	lssessstats	List session statistics

lsset

List RUDP session set information.

lsset *Index*

Syntax Description	*Index*	The session set identifier. Use lssets to determine valid identifiers. Value: integer 1-6.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   A session set is a collection of session groups, each connecting to a different media gateway controller. Use session sets for redundant media gateway controller architectures. This command lists detail information for a single RUDP session set. For more information, see Viewing Session Set Information, page 5-11.

Examples   The following example lists RUDP session set information.

```
lsset
```

Related Commands

Command	Description
lssession	List RUDP session
lssessions	List all RUDP sessions

lssets

List all RUDP session sets.

lssets

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   A session set is a collection of session groups, each connecting to a different media gateway controller. Use session sets for redundant media gateway controller architectures. This command lists summary information for all RUDP session sets. For more information, see Viewing Session Set Information, page 5-11.

Examples   The following example lists all session set information.

```
lssets
```

Related Commands

Command	Description
lssession	List RUDP session
lssessions	List all RUDP sessions
lsset	List RUDP session information

lsslinecst

List current statistics for a SONET line.

lsslinecst *Location*

Syntax Description	*Location* The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to display current ES, SES, CV, and UAS statistics for a SONET line. For more information, see Viewing Line Current Statistics, page 7-17.

Examples

The following example lists statistics for slot 9 line 1:

```
lsslinecst 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecsts	List current statistics for all SONET lines

Command	Description
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsslinecsts

List current statistics for all SONET lines.

> **lsslinecsts**

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display current ES, SES, CV, and UAS statistics for all SONET lines. For more information, see Viewing Line Current Statistics, page 7-17.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path

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Command	Description
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsslineist

List interval statistics for a SONET line.

lsslineist *Location Interval*

Syntax Description	

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
Interval	The measurement interval of interest. Values: 1-96, where 1 is the most recent interval

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines Use this command to display interval ES, SES, CV, and UAS statistics for a SONET line. For more information, see Viewing Line Interval Statistics, page 7-18.

Examples The following example lists statistics for the most recent interval of slot 9 line 1:

```
lsslineist 9.1 1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section

Command	Description
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsslineists

List interval statistics for all SONET lines.

lsslineists

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display interval ES, SES, CV, and UAS statistics for all SONET lines. For more information, see Viewing Line Interval Statistics, page 7-18.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsspathcst	List current statistics for a SONET path

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Command	Description
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsslinetst

List total statistics for a SONET line.

lsslinetst *Location*

Syntax Description	*Location* — The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display total ES, SES, CV, and UAS statistics for a SONET line. For more information, see Viewing Line Total Statistics, page 7-18.

Examples   The following example lists statistics for slot 9 line 1:

```
lsslinetst 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line

Command	Description
lsslinecsts	List current statistics for all SONET lines
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsslinetsts

List total statistics for all SONET lines.

lsslinetsts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display total ES, SES, CV, and UAS statistics for all SONET lines. For more information, see Viewing Line Total Statistics, page 7-18.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslineist	List interval statistics for a SONET line
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths

Command	Description
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lssonetalm

List SONET alarm thresholds.

      lssonetalm *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the SONET line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History	Release	Modification
	1.2	This command was first introduced.

Usage Guidelines   Use this command to display SONET alarm thresholds. For more information, see Viewing OC-3 Alarm Thresholds, page 6-17.

Examples   The following example lists the SONET alarm thresholds for broadband line 1.

```
lssonetalm 9.1
```

Related Commands	Command	Description
	addsonetln	Add a SONET line
	chsonetln	Change a SONET line
	delsonetln	Delete a SONET line
	lssonetlns	List information about all SONET lines
	lssonetalms	List alarm threshold information for all SONET lines

lssonetalms

List SONET alarms.

lssonetalms

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display to view red, yellow, and performance alarms for SONET lines. For more information, see Viewing OC-3 Alarms, page 6-15.

Examples   The following example lists the SONET alarms.

```
lssonetalms
```

Related Commands

Command	Description
addsonetln	Add a SONET line
chsonetln	Change a SONET line
delsonetln	Delete a SONET line
lssonetlns	List information about all SONET lines
lssonetalm	List alarm information for all SONET lines

lssonetln

List SONET line.

lssonetln *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display the status and configuration information for the specified SONET line. For more information, see Viewing OC-3 Configuration and Status, page 4-18.

Examples   The following example lists the SONET configuration at slot 9 line 1.

```
lssonetln 9.1
```

Related Commands

Command	Description
addsonetln	Add a SONET line
chsonetln	Change a SONET line
delsonetln	Delete a SONET line
lssonetlns	List information about all SONET lines

lssonetlns

List SONET lines.

lssonetlns

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display status and configuration information for all SONET lines. For more information, see Viewing OC-3 Configuration and Status, page 4-18

Examples   The following example lists SONET lines.

```
lssonetlns
```

Related Commands

Command	Description
addsonetln	Add a SONET line
chsonetln	Change a SONET line
delsonetln	Delete a SONET line
lssonetln	List information about a SONET line

lssonetlnerdi

List SONET line extended remote defect indication.

lssonetlnerdi *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display the E-RDI (Extended Remote Defect Indication) information for the specified SONET line. For more information, see Viewing E-RDI Configuration and Status, page 4-22.

Examples   The following example lists the E-RDI information at slot 9 line 1.

```
lssonetlnerdi 9.1
```

Related Commands

Command	Description
chsonetperdi	Change SONET path e-rdi parameters
chsonettrace	Change SONET trace parameters
chsonetexptrace	Change SONET expected trace parameters
lssonetlnerdis	List summary E-RDI information for all SONET lines

lssonetlnerdis

List E-RDI information for all lines.

lssonetlnerdis

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display E-RDI information for all SONET lines. For more information, see Viewing E-RDI Configuration and Status, page 4-22.

Examples   The following example lists summary E-RDI information for all lines:

```
lssonetlnerdis
```

Related Commands

Command	Description
chsonetperdi	Change SONET path e-rdi parameters
chsonettrace	Change SONET trace parameters
chsonetexptrace	Change SONET expected trace parameters
lssonetlnerdi	List E-RDI information for a SONET line

lssonetstat

List SONET alarm statistics.

lssonetstat *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display SONET alarm statistics. For more information, see Monitoring SONET Alarm Statistics, page 7-23.

Examples   The following example lists statistics for slot 9 line 1:

```
lssonetstat 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line

Command	Description
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths

lssonetstats

List all SONET alarm statistics.

lssonetstats

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display all SONET alarm statistics and states. For more information, see Monitoring SONET Alarm Statistics, page 7-23.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines

Command	Description
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsspathcst

List current statistics for a SONET path.

lsspathcst *Location*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display current ES, SES, CV, and UAS statistics for a SONET path. For more information, see Viewing Path Current Statistics, page 7-20.

Examples   The following example lists statistics for slot 9 line 1:

```
lsspathcst 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line

Command	Description
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

Isspathcsts

List current statistics for all SONET paths.

Isspathcsts

Syntax Description

The command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

Use this command to display current ES, SES, CV, and UAS statistics for all SONET paths. For more information, see Viewing Path Current Statistics, page 7-20.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines

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Command	Description
lsspathcst	List current statistics for a SONET path
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsspathist

List interval statistics for a SONET path.

lsspathist *Location Interval*

Syntax Description	*Location*	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4
	Interval	The measurement interval of interest. Values: 1-96, where 1 is the most recent interval

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display interval ES, SES, CV, and UAS statistics for a SONET path. For more information, see Viewing Path Interval Statistics, page 7-21.

Examples   The following example lists statistics for the most recent interval of slot 9 line 1:

```
lsspathist 9.1 1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section

Command	Description
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsspathists

List interval statistics for all SONET paths.

lsspathists

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display interval ES, SES, CV, and UAS statistics for all SONET paths. For more information, see Viewing Path Interval Statistics, page 7-21.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines

Command	Description
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsspathtst

List total statistics for a SONET path.

lsspathtst *Location*

Syntax Description	*Location* — The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults No default behavior or values.

Command Modes Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines Use this command to display total ES, SES, CV, and UAS statistics for a SONET path. For more information, see *Viewing Path Total Statistics, page 7-21*.

Examples The following example lists statistics for slot 9 line 1:

```
lsspathtst 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line

Command	Description
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsspathtsts

List total statistics for all SONET paths.

> **lsspathtsts**

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display total ES, SES, CV, and UAS statistics for all SONET paths. For more information, see Viewing Path Total Statistics, page 7-21.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines

Command	Description
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lssrt

List static route

lssrt *Address Location*

Syntax Description		
	Address	An address in dotted notation w.x.y.z that has the last byte set to 0.
	Location	The slot and line number, delimited by a period, of the origin of the static route.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the priority of the specified static route.

Examples   The following example displays the priority of the static route from slot 1 line 1 of the MGX 8260 to IP address 12.1.1.0.

```
lssrt 12.1.1.0 1.1
```

Related Commands

Command	Description
addsrt	Add static route
delsrt	Delete static route
lssrts	List static routes

lssrts

List static routes.

lssrts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Displays information about all static routes.

Examples   The following example displays information about all static routes.

```
lssrts
```

Related Commands

Command	Description
addsrt	Add static route
delsrt	Delete static route
lssrt	List static route

lsssectioncst

List current statistics for a SONET section.

lsssectioncst *Location*

| **Syntax Description** | *Location* | The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4 |

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display current ES, SES, SEFS, and CV statistics for a SONET section. For more information, see Viewing Section Current Statistics, page 7-14.

Examples   The following example lists statistics for slot 9 line 1:

```
lsssectioncst 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines

Command	Description
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsssectioncsts

List current statistics for all SONET sections.

lsssectioncsts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display current ES, SES, SEFS, and CV statistics for all SONET sections. For more information, see Viewing Section Current Statistics, page 7-14.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path

Command	Description
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsssectionist

List interval statistics for a SONET section.

lsssectionist *Location Interval*

Syntax Description

| *Location* | The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4 |
| *Interval* | The measurement interval of interest. Values: 1-96, where 1 is the most recent interval |

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display interval ES, SES, SEFS, and CV statistics for a SONET section. For more information, see Viewing Section Interval Statistics, page 7-15.

Examples   The following example lists statistics for the most recent interval of slot 9 line 1:

```
lsssectionist 9.1 1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionists	List interval statistics for all SONET sections

Command	Description
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsssectionists

List interval statistics for all SONET sections.

lsssectionists

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display interval ES, SES, SEFS, and CV statistics for all SONET sections. For more information, see Viewing Section Interval Statistics, page 7-15.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path

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Command	Description
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsssectiontst

List total statistics for a SONET section.

>**lsssectiontst** *Location*

Syntax Description	

Location	The slot and line number, delimited by a period, of the OC-3 line. Valid slot: 9. Valid lines: 1-4

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display total ES, SES, SEFS, and CV statistics for a SONET section. For more information, see Viewing Section Total Statistics, page 7-15.

Examples   The following example lists statistics for slot 9 line 1:

```
lsssectiontst 9.1
```

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontsts	List total statistics for all SONET sections
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines

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Command	Description
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lsssectiontsts

List total statistics for all SONET sections.

lsssectiontsts

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines   Use this command to display total ES, SES, SEFS, and CV statistics for all SONET sections. For more information, see Viewing Section Total Statistics, page 7-15.

Related Commands

Command	Description
clrssectioncst	Clear current statistics for a SONET section
clrssectiontst	Clear total statistics for a SONET section
clrslinecst	Clear current statistics for a SONET line
clrslinetst	Clear total statistics for a SONET line
clrspathcst	Clear current statistics for a SONET path
clrspathtst	Clear total statistics for a SONET path
clrsonetstats	Clear alarm statistics for an OC-3 line
lsssectioncst	List current statistics for a SONET section
lsssectioncsts	List current statistics for all SONET sections
lsssectiontst	List total statistics for a SONET section
lsssectionist	List interval statistics for a SONET section
lsssectionists	List interval statistics for all SONET sections
lsslinecst	List current statistics for a SONET line
lsslinecsts	List current statistics for all SONET lines
lsslinetst	List total statistics for a SONET line
lsslinetsts	List total statistics for all SONET lines
lsslineist	List interval statistics for a SONET line
lsslineists	List interval statistics for all SONET lines
lsspathcst	List current statistics for a SONET path

Command	Description
lsspathcsts	List current statistics for all SONET paths
lsspathtst	List total statistics for a SONET path
lsspathtsts	List total statistics for all SONET paths
lsspathist	List interval statistics for a SONET path
lsspathists	List interval statistics for all SONET paths
lssonetstat	List alarm statistics for an OC-3 line
lssonetstats	List alarm statistics for all OC-3 lines

lstmgr

List trap manager.

lstmgr *Addr*

Syntax Description	*Addr* The IP address of the manager

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines Displays information in the trap registration list about the manager at the specified address. For more information, see Viewing SNMP Trap Registrations, page 6-30.

Examples   The following example lists information about the SNMP manager at 10.1.1.1.

```
lstmgr 10.1.1.1
```

Related Commands

Command	Description
addtmgr	Add trap manager
clrtraps	Clear traps
delcms	Delete community string
lscms	List community string
lscmss	List community strings
lstmgrs	List trap managers

lstmgrs

List trap managers.

lstmgrs

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display information about all managers in the trap registration list. For more information, see Viewing SNMP Trap Registrations, page 6-30.

Examples   The following example lists trap managers.

```
lstmgrs
```

Related Commands

Command	Description
addtmgr	Add trap manager
clrtraps	Clear traps
delcms	Delete community string
lscms	List community string
lscmss	List community strings
lstmgr	List trap manager

lstraps

List the trap log.

lstraps

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the date and time of each trap and alarms associated with them.

Examples   The following example displays information about all traps.

```
lstraps
```

Related Commands

Command	Description
addtmgr	Add trap manager
clrtraps	Clear traps
delcms	Delete community string
lscms	List community string
lscmss	List community strings
lstmgr	List trap manager

lsusp

List a user profile.

lsusp *Index*

Syntax Description

| *Index* | A userProfileTable index number. Values: 1 - 20. |

Defaults

No default behavior or values.

Command Modes

Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to list the specified user profile by index. To determine the index, use lsusps. For more information, see Viewing User Profiles, page 2-2.

Examples

The following example displays the profile for the user at index 3 in the user profile table. The profile includes the user's security level.

```
lsusp 3
```

Related Commands

Command	Description
addusp	Add user profile
delusp	Delete user profile
lsusps	List all user profiles

lsusps

List all user profiles.

lsusps

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list the user identifier and security level for all user profiles. For more information, see Viewing User Profiles, page 2-2.

Examples   The following example lists all user profiles.

```
lsusps
```

Related Commands

Command	Description
addusp	Add user profile
delusp	Delete user profile
lsusp	List a user profiles

lsvport

List voice port

lsusp *Slot Port*

Syntax Description

Slot	The logical slot number of an NSC
Port	The logical port number

Defaults

No default behavior or values.

Command Modes

Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Displays information about the specified voice port.

Examples

The following example displays information about the voice port at slot 1, port 3.

```
lsvport 1 3
```

Related Commands

Command	Description
addvport	Add voice port
chvport	Change voice port
delvport	Delete voice port
lsvports	List voice ports

lsvports

List voice ports

lsvports

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 5

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to list information about all voice ports.

Examples   The following example lists information about all voice ports.

```
lsvports
```

Related Commands

Command	Description
addvport	Add voice port
chvport	Change voice port
delvport	Delete voice port
lsvport	List voice port

offbertds1

Stop BERT on DS1.

offbertds1 *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line

Defaults

No default behavior or values.

Command Modes

Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to stop the BERT on the specified DS1 line.

Examples

The following example stops a BERT that is running on the DS1 line at slot 1 line 1.

```
offbertds1 1.1
```

Related Commands

Command	Description
lsbertds1	List DS1 BERT results
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
onbertds1	Start BERT on DS1

onbertds1

Start BERT on DS1.

onbertds1 *Location Pattern Rate DS0 StateCtrl*

Syntax Description

Location	The slot and line number, delimited by a period, of the DS1 line.
Pattern	One of the following patterns. Values: 1-13.
	1 = Randomly-generated 2^{9} $^{-1}$ pattern
	2 = Randomly-generated 2^{11} $^{-1}$ pattern
	3 = Randomly-generated 2^{15} $^{-1}$ pattern
	4 = Randomly-generated 2^{20} $^{-1}$ pattern with QRSS
	5 = Randomly-generated 2^{20} $^{-1}$ pattern
	6 = Randomly-generated 2^{23} $^{-1}$ pattern
	7 = Repetitively-generated all^{-1} pattern
	8 = Repetitively-generated all^{-1} pattern
	9 = Repetitively-generated alternating 1 and 0 pattern
	10 = Repetitively-generated alternating 11 and 00 pattern
	11 = Repetitively-generated 1 in 24 pattern
	12 = Repetitively-generated 1 in 16 pattern
	13 = Repetitively-generated 1 in 8 pattern
Rate	The error rate to be injected into the pattern during BERT test. The value is used as the exponent in the formula, BER 10-x. For example, if x = 1, the error rate is 10-1 or 10%. If the rate is 0, no error is injected in the BERT pattern. Values: 1-8 as follows:
	1=No Error Rate Injection.
	2=0.1
	3=0.01
	4=0.001
	5=0.0001
	6=0.00001
	7=0.000001
	8=0.0000001
Ds0	A bit-mask specifying which DS0s are going to participate in the Bert test.
StateCtrl	A integer to control starting and stopping the Bert test. Values:
	1=Start Bert test.
	2=Stop Bert test.

Defaults   No default behavior or values.

Command Modes   Security level 3

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to start the BERT on the specified DS1 line. To specify which DS0s participate in a Bert test, use the Ds0 parameter. For example, 0000000000110101 specifies that the DS0 number 1, 3, 5 and 6 are participating. Convert this binary number to a decimal number and then enter that number on this option. For example, binary 0000000000110101 equals 53 decimal. Enter 53 for this option in this example

Examples   The following example starts a BERT of the DS1 line at slot 1 line 1, using the 11 00 test pattern a test rate of 10%.

```
onbertds1 1.1 10 1
```

Related Commands

Command	Description
lsbertds1	List DS1 BERT results
lsds1ln	List DS1 line
lsds1lns	List DS1 lines
offbertds1	Stop BERT on DS1

rmannfile

Remove an announcement file.

rmannfile *fid*

Syntax Description

| *fid* | The announcement file ID. Values: 1-100 |

Defaults

No default behavior or values

Command Modes

Security level

Command History

Release	Modification
1.2	This command was first introduced.

Usage Guidelines

You use this command to remove an announcement file. Before attempting to remove an announcement file, first deactivate the file; otherwise, removal fails. To view file ID numbers, use the **lsannfiles** command.

Examples

The first command deactivates file 25, and the next command removes the file.

```
rmannfile 25
```

Related Commands

Command	Description
acannfile	Activate an announcement file
deacannfile	Deactivate an announcement file
lsannfiles	List all announcement files
lsannfile	List the given announcement file
lsdurationif	List duration information about announcement files.

resetcd

Reset card.

resetcd *Card*

Syntax Description

Card	The number of the card to reset

Defaults

No default behavior or values.

Command Modes

Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to specify a card to reset.

Examples

The following example resets card 1.

```
resetcd 1
```

Related Commands

Command	Description
lscd	List information about a card
lscds	List information about all cards

resetnd

Reset node, including all processor and service modules.

resetnd

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to reset the node.

Examples   The following example resets the node.

```
resetnd
```

Related Commands

Command	Description
clrndcnf	Clear node configuration

swcd

Switch to redundant NSC.

swcd *Card*

Syntax Description

Card	The slot number of active card to switch for the standby redundant card

Defaults

No default behavior or values.

Command Modes

Security level 4

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to switch between the active and standby cards of a redundant pair.

Examples

The following example makes the card in slot 1 the standby instead of the active card in a redundant pair.

```
swcd 1
```

Related Commands

Command	Description
addreds	Add a card redundancy pair
delreds	Delete a card redundancy pair
lsreds	List redundancies

swclk

Switch clock.

swclk

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 2

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to switch from the current clock source to the standby clock source.

Examples   The following example switches to the standby clock.

```
swclk
```

Related Commands

Command	Description
chpclksrc	Change primary clock source
chsclksrc	Change secondary clock source
lsclksrcs	List clock sources

upethln

Activate Ethernet line.

upethln *Location*

Syntax Description

Location	The slot and line number, delimited by a period, of the Ethernet line

Defaults

No default behavior or values.

Command Modes

Security level 4

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines

Use this command to bring up an Ethernet interface.

Examples

The following example brings up the Ethernet interface at slot 9 line 1, address 10.1.2.10.

```
upethln 9.1
```

Related Commands

Command	Description
addethln	Add Ethernet line
chethln	Change Fast Ethernet line
delethln	Delete Ethernet line
dnethln	DeActivate Ethernet line
lsethln	List Ethernet line
lsethlns	List Ethernet Lines

upgd

Upgrade the software image.

upgd *upgdLogicalCardIndex upgdFileName*

Syntax Description	*upgdLogicalCardIndex*	The logical number of the card to upgrade. Values: 1-16.
	upgdFileName	The file name of the upgrade image. Values:
		SCC image: SCC_<9-character string>.fw
		NSC image: NSC_<9-character string>.fw
		BSC image: BSC_<9-character string>.fw

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History	Release	Modification
	1.1.3	This command was first introduced.

Usage Guidelines   Use this command to upgrade the software image. The system sends a confirmation message on successful completion.

Examples   The following example upgrades the software image of the SCC in logical slot 9:

```
upgd 9 SCC_r01.01.03.fw
```

Related Commands	Command	Description
	upgdcancel	Gracefully cancel an upgrade
	upgdcmit	Commit the new software image
	lslgcd	List upgrade information
	lslgcds	List upgrade information for all cards

upgdcancel

Cancel a software image upgrade.

upgdcancel *upgdLogicalCardIndex*

Syntax Description

upgdLogicalCardIndex	The logical number of the card to upgrade. Values: 1-16.

Defaults

No default behavior or values.

Command Modes

Security level 1

Command History

Release	Modification
1.1.3	This command was first introduced.

Usage Guidelines

Use this command to gracefully cancel a software image upgrade in a redundant system. The system sends a confirmation message on successful cancellation.

Examples

The following example cancels the software upgrade of the SCC in logical slot 9:

```
upgdcancel 9
```

Related Commands

Command	Description
upgd	Upgrade the software image
upgdcmit	Commit the new software image
lslgcd	List upgrade information
lslgcds	List upgrade information for all cards

upgdcmit

Commit the new software image.

upgdcmit *upgdLogicalCardIndex*

Syntax Description

upgdLogicalCardIndex	The logical number of the card to upgrade. Values: 1-16.

Defaults   No default behavior or values.

Command Modes   Security level 1

Command History

Release	Modification
1.1.3	This command was first introduced.

Usage Guidelines   Use this command to commit the new software image. The system sends a confirmation message on successful completion.

Examples   The following example commits the software upgrade of the SCC in logical slot 9:

```
upgdcmit 9
```

Related Commands

Command	Description
upgd	Upgrade the software image
upgdcancel	Gracefully cancel an upgrade
lslgcd	List upgrade information
lslgcds	List upgrade information for all cards

version

Show the software version.

version

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to display the version information about the MGX 8260 Media Gateway.

Examples   The following example displays the software version.

```
version
```

whoami

List the name of the user who is currently logged in.

whoami

Syntax Description   The command has no arguments or keywords.

Defaults   No default behavior or values.

Command Modes   Security level 6

Command History

Release	Modification
1.0	This command was first introduced.

Usage Guidelines   Use this command to determine who is logged in.

Examples   The following example displays the name of the user who is logged in.

```
whoami
```

whoami

V

voice port