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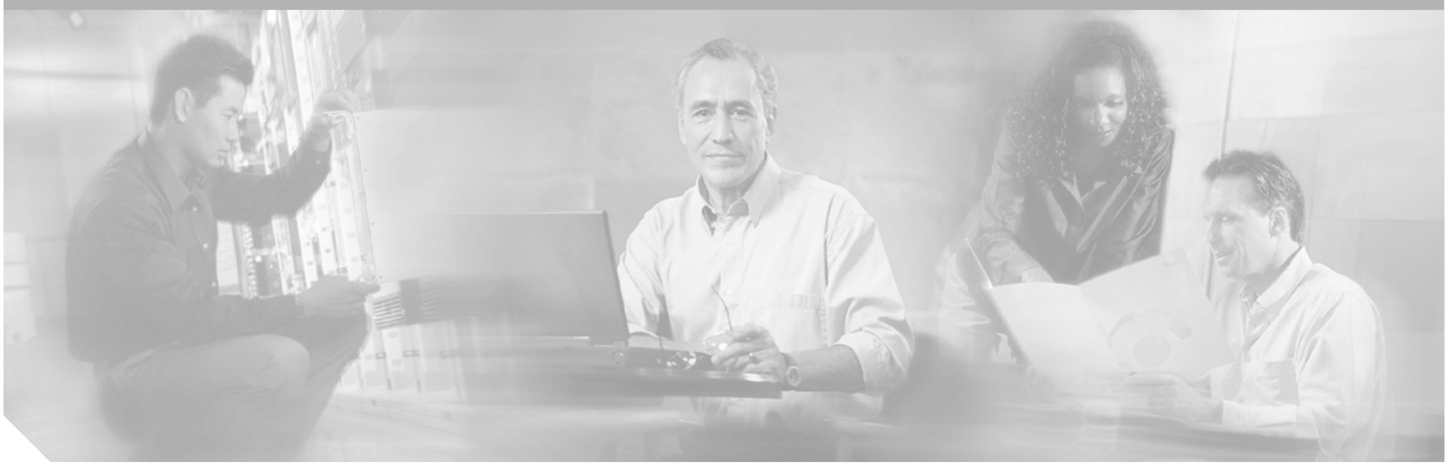

Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches

Release 5

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Preface

This preface describes the objectives, audience, organization, what's new, related documentation, and conventions of the *Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches*.

Objectives

This guide describes how to configure Circuit Emulation services. It also provides detailed information about the commands used to configure these services using Circuit Emulation Service Module (CESM) and Multi Protocol Service Module (MPSM) cards on Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), and Cisco MGX 8830 switches.

Audience

The *Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches* is intended for network operators and administrators who are responsible for implementing and supporting Circuit Emulation and ATM services on the Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), and Cisco MGX 8830 switches using the Circuit Emulation Service Module (CESM) and Multi Protocol Service Module (MPSM) cards.

Organization

The body of this publication is as follows:

Chapter 1	Introduction. This chapter introduces the CESM and MPSM cards covered in this guide and their features.
Chapter 2	Preparing CESM and MPSM Lines and Ports for Communications. This chapter describes how to prepare the CESM and MPSM cards described in this guide for SPVC and PVC connections.

Chapter 3 — Provisioning SPVCs (PXM1E/PXM45) on CESM and MPSM Cards. This chapter describes how to provision SPVC connections on PXM1E and PXM45 platforms between the CESM and MPSM cards described in this guide and between these CESM and MPSM cards and other types of cards.

Chapter 4 — Provisioning PVCs (PXM1) on CESM and MPSM Cards. This chapter describes how to provision PVC connections on PXM1 platforms between the CESM and MPSM cards described in this guide and between these CESM and MPSM cards and other types of cards.

Chapter 5 — Managing CESM and MPSM Cards. This chapter describes CESM and MPSM card management tasks you might want to do after provisioning is complete.

Chapter 6 — CESM and MPSM Command Reference. This chapter describes the command-line interface (CLI) commands that you can use to configure, provision, and manage the CESM and MPSM cards.

Changes to This Document

This manual has been updated to support Release 5.0.10 and 1.3.10.

The following changes have been made to this document:

In Chapter 1:

- In the "MPSM-8T1E1 Card Common Features" section:
  - The feature licenses available was modified.
  - Support for core memory dumps was added.
- In the "MPSM-8T1E1 Card Differences" section, support for core memory dumps was added.
- In Table 1-3, line conditioning and core memory dumps was added.
- In the "CESM and MPSM Card Common Features" section, reference to a license for channelization was removed.
- In the "Structured Data Transfer" section:
  - Reference to a license for channelization was removed.
  - Line conditioning for T1 to E1 connections was added.
- In the "SRM Card Features" section, Table 1-4 was added showing SRM card platform support.

In Chapter 2:

- In the "Preparing for Provisioning" section, text was changed.
- In the "Quickstart Provisioning Procedures" section, the "MPSM Interface and Service Configuration Quickstart" was added.
- In the "Quickstart Provisioning Procedures" section, the "Moving MPSM Feature Licenses Quickstart"was added.
- In the "General CESM and MPSM Provisioning Procedures" section, the "Selecting MPSM Interfaces and Services" section was added.

- In the "Bringing Up Lines" section, table Table 2-6 was added showing E1 Signalling Line Types.
- In the "Adding Circuit Emulation Ports" section, references to a license for channelization was removed.

In Chapter 3:

- In the "Configuring the Slave Side of SPVCs" section, the -cos parameter was added to the **addcon** command.
- In the "Configuring the Master Side of SPVCs" section, the -cos parameter was added to the **addcon** command.

In Chapter 5:

- A new section, "Managing MPSM Feature Licenses", was added.
- In the "CESM Card Loopbacks" section, references to the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards supporting channel loopbacks were removed.
- In the "SRM Supported BERT" section, references to the Cisco MGX 8230 and Cisco MGX 8250 was added.
- A new section, "Managing MPSM Core Dumps", was added.
- A new section, "Managing Line Conditioning", was added.

In Chapter 6:

- In the **addcon** command, the -cos parameter was added.
- In the **addport** command, references to a license for channelization was removed.
- In the **addspvc** command, the -cos parameter was added.
- The **core** command was added.
- In the **dspchan** command, both examples were replaced.
- In the **dspcon** command, both examples were replaced.
- In the **dspliccd** command:
  - The description of the command was changed.
  - References to a license for channelization was removed from the example.
- In the **movelic** command:
  - The description of the command was changed.
  - References to a license for channelization and IMA was removed from the example.
- In the **xcnfchan** command:
  - The description of the -cos parameter was changed.
  - The -linecond option was added.
  - A note was added to the -rmtlb option stating that this option is not supported on the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards.
- In the **xcnfcon** command:
  - The description of the -cos parameter was changed.
  - The -linecond option was added.
  - A note was added to the -rmtlb option stating that this option is not supported on the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards.
- In the **xdspchan** command, both examples were replaced.

Conventions

This publication uses the conventions listed in the following paragraphs.

Command descriptions use these conventions:

- Commands and keywords are in **boldface**.
- Arguments for which you supply values are in *italics*.
- Required command arguments are inside angle brackets (< >).
- Optional command arguments are in square brackets ([ ]).
- Alternative keywords are separated by vertical bars (|).

Examples use these conventions:

- Terminal sessions and information the system displays are in `screen` font.
- Information you enter is in **`boldface screen`** font.
- Nonprinting characters, such as passwords, are in angle brackets (< >).
- Default responses to system prompts are in square brackets ([ ]).

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Tips Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Warning **This warning symbol 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. (To see translated versions of this warning, refer to the *Regulatory Compliance and Safety Information* document that accompanied the product.)**

Documentation

A *Guide to Cisco Multiservice Switch Documentation* ships with your product. That guide contains general information about how to locate Cisco MGX, BPX, SES, and CWM documentation online.

Documentation Notes for the April 2004 Product Releases

The April 2004 release includes new hardware or features for the following releases:

- Cisco MGX Release 5 for the MGX 8880 Media Gateway.
- Cisco MGX Release 5 for these multiservice switches:
  - Cisco MGX 8850 (PXM1E)
  - Cisco MGX 8850 (PXM45)
  - Cisco MGX 8950
  - Cisco MGX 8830
- Cisco MGX Release 1.3, for these multiservice switches:
  - Cisco MGX 8850 (PXM1)
  - Cisco MGX 8230
  - Cisco MGX 8250
- Cisco VXSM Release 5. The Voice Switch Service Module (VXSM) card is new for this release.
- Cisco WAN Manager Release 15. The Cisco WAN Manager (CWM) network management software is improved for this release. The previous release of CWM was 12. CWM Release 15 introduces a helpful new documentation feature: web-based *online Help*. To invoke online Help, press **F1** on a PC, press the **Help** key on a UNIX workstation, or select **Help** from the main or popup menu.

Other components of multiservice WAN products, such as the Service Expansion Shelf (SES) and WAN switching software have no new features for the April 2004 release, therefore, their existing documentation was not updated.

Related Documentation

This section describes the technical manuals and release notes that support the April 2004 release of Cisco Multiservice Switch products.

Technical Manual Order of Use

Use the technical manuals listed here in the following order:

Step 1 Refer to the documents that ship with your product. Observe all safety precautions.

- *Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES)*—This document familiarizes you with safety precautions for your product.
- *Guide to Cisco Multiservice Switch Documentation*—This document explains how to find documentation for MGX, BPX, and SES multiservice switches and media gateways as well as CWM network management software. These documents are available only online.
- *Installation Warning Card*—This document provides precautions about installing your cards. It explains such subjects as removing the shipping tab and inserting cards properly into the correct slots.

Step 2 Refer to the release notes for your product.

Step 3 If your network uses the CWM network management system, upgrade CWM. (If you are going to install CWM for the first time, do so *after* Step 4.) Upgrade instructions are included in the following documents:

- *Cisco Wide Area Network Manager Installation Guide, Release 15*.
- *Cisco WAN Manager User's Guide, Release 15*.

Step 4 If your network contains MGX and SES products, refer to this manual for planning information:

- *Cisco PNNI Network Planning Guide for MGX and SES Products*.

Step 5 Refer to these manuals for information about installing cards and cables in the MGX chassis:

- *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Hardware Installation Guide, Release 2 through 5* for installing cards and cables in these chassis.
- *Cisco MGX 8xxx Edge Concentrator Installation and Configuration Guide* for installing cards and cables in the Cisco MGX 8230, Cisco MGX 8250, or Cisco MGX 8850 (PXM1) chassis.

Step 6 Refer to the manuals that help you configure your MGX switch and processor cards:

- *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* for these chassis.
- *Cisco MGX 8xxx Edge Concentrator Installation and Configuration Guide* for the Cisco MGX 8230, Cisco MGX 8250, or Cisco MGX 8850 (PXM1) chassis.

Step 7 Refer to the manual that supports the additional cards you intend to install in your switch. For example:

- The services books can help you establish ATM, Frame Relay, or circuit emulation services on your switch.
- The VISM book can help you set up your switch as a voice gateway, and the RPM book can help you implement IP on the switch.

Step 8 Additional books, such as command reference guides and error message books, can help with the daily operation and maintenance of your switch.

Note Manual titles may be different for earlier software releases. The titles shown in Table 1 are for the April 2004 release.

Technical Manual Titles and Descriptions

Table 1 lists the technical manuals and release notes that support the April 2004 multiservice switch product releases. Books and release notes in Table 1 are listed in order of use and include information about which multiservice switch or media gateway the document supports.

The books for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches were not updated for the April 2004 release, therefore, some information about configuring and using the new MPSM-8-T1E1 card in these switches is included in the following books:

- *Cisco ATM Services (AUSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5.*

- *Cisco Frame Relay Services (FRSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5.*
- *Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5.*

Information about how to install or upgrade to the MPSM-8-T1E1 card in Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches is in the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.00.*

Note Refer to each product's release notes for the latest information on features, bug fixes, and more.

Terms

Two main types of ATM cards are used in MGX switches: AXSM and AUSM. *AXSM* stands for ATM Switching Service Module. *AUSM* stands for ATM UNI (User Network Interface) Service Module.

CWM stands for Cisco WAN Manager, our multiservice switch network management system.

Legacy service module refers to a previously introduced card. For this release, the term is used specifically for the CESM-8-T1E1, FRSM-8-T1E1, and AUSM-8-T1E1 cards, which can now be replaced by the new MPSM-8-T1E1 card.

MPSM stands for Multiprotocol Service Module.

RPM stands for Route Processor Module.

SES stands for Service Expansion Shelf.

VISM stands for Voice Interworking Service Module.

VXSM stands for Voice Switch Service Module.

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
Overview and Safety Documents									
Guide to Cisco Multiservice Switch Documentation DOC-7814807=	x	x	x	x	x	x	x	x	x
Installation Warning Card DOC-7812348=	x	x	x	x	x	x	x	x	x
Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES) DOC-7814790=	—	x	x	x	x	x	x	x	x
Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.00 OL-5190-01	—	—	—	—	—	—	—	—	x
Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.0.00 OL-4538-01	—	—	—	—	x	x	x	x	
Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.00 OL-4539-01	—	x	x	x	—	—	—	—	—
Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.0 OL-4627-01	—	—	—	—	—	—	x	—	x
Release Notes for Cisco Wide Area Network Manager, Release 15.0.00 OL-4151-01	—	—	—	—	x	x	x	x	x
Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.2.1 *OL-4544-01*	—	x	x	x	x	x	x	—	x

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.3(2)T5 for PXM45-based Switches, Release 5.0.00 OL-4536-01	—	—	—	—	—	—	x	x	x
Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.3(2)T5 for MGX Releases 1.3.00 and 5.0.00 OL-4535-1	—	x	x	x	x	x	x	x	x
Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3[1] DOC-7812899=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3[1] DOC-7811576=	—	—	x	—	—	—	—	—	—
Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3[1] OL-1154-01	—	—	—	x	—	—	—	—	—
Hardware Installation Guides									
Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Hardware Installation Guide, Release 2 through 5 OL-4545-01	—	—	—	—	x	x	x	x	x
Cisco Service Expansion Shelf Hardware Installation Guide, Release 1[1] DOC-786122=	x	—	—	—	—	—	—	—	—
Planning and Configuration Guides									
Cisco PNNI Network Planning Guide for MGX and SES Products OL-3847-01	x	—	—	—	x	x	x	x	x

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5 OL-4546-01	—	—	—	—	x	x	x	x	x
Cisco Wide Area Network Manager Installation Guide, Release 15 OL-4550-01	—	—	—	—	x	x	x	x	x
Cisco WAN Manager User's Guide, Release 15 OL-4552-01	—	—	—	—	x	x	x	x	x
Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811223=	—	—	—	x	—	—	—	—	—
Cisco SES PNNI Controller Software Configuration Guide, Release 3[1] DOC-7814258=	x	—	—	—	—	—	—	—	—
Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811215=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811217=	—	—	x	—	—	—	—	—	—
Service Module Configuration and Reference Guides									
Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 2.1 78-12510-02	—	x	x	x	—	—	—	—	—
Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3[1] DOC-7810327=	—	—	—	—	—	—	x	—	—

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
Cisco ATM Services (AUSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5[2] OL-4540-01	—	[2]	[2]	[2]	x	x	—	—	—
Cisco Frame Relay Services (FRSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5[2] *OL-4541-01*	—	[2]	[2]	[2]	x	x	x	—	—
Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5[2] OL-0453-01	—	[2]	[2]	[2]	x	x	x	—	—
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide for MGX 8850 (PXM45) and MGX 8950, Release 4[1] OL-5087-01	—	—	—	—	—	—	x	x	—
Cisco ATM Services (AXSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4548-01	—	—	—	—	—	—	x	x	x
Cisco ATM and Frame Relay Services (MPSM-T3E3-155) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4554-01	—	—	—	—	x	x	x	—	—
Cisco Voice Switch Services (VXSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4625-01	—	—	—	—	—	—	x	—	x

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
Cisco Voice Interworking Services (VISM) Configuration and Command Reference Guide, Release 3.2[1] OL-4359-01	—	x	x	x	x	x	x	—	x
Reference Guides									
Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3[1] DOC-78112113=	—	x	—	—	—	—	—	—	—
Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3[1] DOC-7811211=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3[1] DOC-7811212=	—	—	x	—	—	—	—	—	—
Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3[1] DOC-7811216=	—	—	x	—	—	—	—	—	—
Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3[1] DOC-7811210=	—	x	x	x	—	—	—	—	—
Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3[1] DOC-7811240=	—	x	x	x	—	—	—	—	—
Cisco SES PNNI Controller Command Reference, Release 3[1] DOC-7814260=	x	—	—	—	—	—	—	—	—
Cisco MGX 8850 (PXM45/PXM1E), Cisco MGX 8950, and Cisco MGX 8830 Command Reference Guide, Release 5 OL-4547-01	—	—	—	—	x	x	x	x	x

Table 1 Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
Cisco Wide Area Network Manager SNMP Service Agent, Release 15 OL-4551-01	—	—	—	—	x	x	x	x	x
Cisco Wide Area Network Manager Database Interface Guide, Release 15 OL-4587-01	—	—	—	—	x	x	x	x	x
Cisco MGX and Service Expansion Shelf Error Messages, Release 5 OL-4553-01	x	—	—	—	x	x	x	x	x

1. This document was not updated for the April 2004 release.
2. Some configuration and command information is included in this book for using the multiprotocol service module (MPSM-8-T1E1) in a Cisco MGX 8230, MGX 8250, or MGX 8850 (PXM1) switch.

Note For the April 2004 product release, there are no new features for the Service Expansion Shelf (SES) of the BPX switch and BPX WAN switching software. Therefore, documentation for these items was not updated. Table 1 lists the most recent technical manuals and release notes for these products.

Table 1 also lists the latest documentation available for the Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches. These switches use the PXM1 processor card. Although there are new features in MGX Release 1.3 for these switches, only the release notes were updated. And the following books contain some information about configuring the MPSM-8-T1E1 card for use in these switches:

- *Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5*.
- *Cisco Frame Relay Services (FRSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5*.
- *Cisco ATM Services (AUSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5*.

Table 2 lists the documents that ship with product.

Table 3 contains alphabetized titles and descriptions of all the manuals and release notes listed in Table 1.

Table 2 Documents that Ship with Multiservice Switch Products

Document Title	Description
Guide to Cisco Multiservice Switch Documentation DOC-7814807=	Describes how to find the manuals and release notes that support multiservice switches and network management products. These documents are available only online. **This guide ships with product.**
Installation Warning Card DOC-7812348=	**Contains precautions that you should take before you insert a card into a slot. This Warning Card ships with product.**
Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES) DOC-7814790=	Provides regulatory compliance information, product warnings, and safety recommendations for all the Cisco MGX multiservice switches: MGX 8230, MGX 8250, MGX 8850 (PXM1), MGX 8850 (PXM45), MGX 8850 (PXM1E), MGX 8830 and MGX 8950. Also provides such information for the MGX 8880 Media Gateway. **This book ships with product.**

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products

Document Title	Description
Cisco ATM and Frame Relay Services (MPSM-T3E3-155) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4554-01	Provides software configuration procedures for provisioning ATM and Frame Relay connections on the new MPSM-T3E3-155 multiprotocol service module. Also describes all MPSM-T3E3-155 commands.
Cisco ATM Services (AUSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4540-01 A0	Provides software configuration procedures for provisioning connections and managing the AUSM cards supported in this release. Also describes all AUSM commands. Includes software configuration procedures for provisioning connections and managing the new MPSM-8-T1E1 card as an AUSM card replacement.
Cisco ATM Services (AXSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4548-01	Explains how to configure the AXSM cards and provides a command reference that describes the AXSM commands in detail. The AXSM cards covered in this manual are the AXSM-XG, AXSM/A, AXSM/B, AXSM-E, and AXSM-32-T1E1-E.
Cisco Circuit Emulation Services (CESM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-0453-01	Provides software configuration procedures for provisioning connections and managing the Circuit Emulation Service Module (CESM) cards supported in this release. Also describes all CESM commands. Includes software configuration procedures for provisioning connections and managing the new MPSM-8-T1E1 card as a CESM card replacement.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco Frame Relay Services (FRSM/MPSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4541-01	Provides software configuration procedures for provisioning connections and managing the Frame Relay Service Module (FRSM) cards supported in this release. Also describes all FRSM commands. Includes software configuration procedures for provisioning connections and managing the new MPSM-8-T1E1 card as an FRSM card replacement.
Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811215=	Provides installation instructions for the Cisco MGX 8230 edge concentrator.
Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3 DOC-7812899=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3 DOC-7811211=	Provides detailed information on the general command line interface commands.
Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3 DOC-78112113=	Provides error message descriptions and recovery procedures.
Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811217=	Provides installation instructions for the Cisco MGX 8250 edge concentrator.
Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3 DOC-7811576=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3 DOC-7811212=	Provides detailed information on the general command line interface commands.
Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3 DOC-7811216=	Provides error message descriptions and recovery procedures.
Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3 DOC-7811210=	Provides detailed information on the general command line for the Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.
Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3 DOC-7811240=	Provides error message descriptions and recovery procedures for Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Hardware Installation Guide, Release 2 through 5 OL-4545-01	Describes how to install the Cisco MGX 8950, the Cisco MGX 8850 (PXM1E/PXM45), and the Cisco MGX 8830 switches. Also describes how to install the MGX 8880 Media Gateway. This document explains what each switch does and covers site preparation, grounding, safety, card installation, and cabling. The Cisco MGX 8850 switch uses either a PXM45 or a PXM1E controller card and provides support for both serial bus-based and cell bus-based service modules. The Cisco MGX 8830 switch uses a PXM1E controller card and supports cell bus-based service modules. The Cisco MGX 8950 supports only serial bus-based service modules. The Cisco MGX 8880 uses a PXM45/C controller card, and supports only serial bus-based service modules. *This hardware installation guide replaces all previous hardware guides for these switches.*
Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5 OL-4546-01	Describes how to configure the Cisco MGX 8880 Media Gateway. Also describes how to configure Cisco MGX 8850 (PXM1E), Cisco MGX 8850 (PXM45), and Cisco MGX 8830 switches to operate as ATM edge switches and the Cisco MGX 8950 switch to operate as a core switch. This guide also provides some operation and maintenance procedures.
Cisco MGX 8850 (PXM45/PXM1E), Cisco MGX 8950, and Cisco MGX 8830 Command Reference Guide, Release 5 OL-4547-01	Describes the PXM commands that are available in the CLI of the Cisco MGX 8850 (PXM45), Cisco MGX 8850 (PXM1E), Cisco MGX 8950, and Cisco MGX 8830 switches. Also describes the PXM commands that are available in the CLI of the Cisco MGX 8880 Media Gateway.
Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811223=	Provides installation instructions for the Cisco MGX 8850 (PXM1) edge concentrator.
Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3 OL-1154-01	Describes the system components and function of the Cisco MGX 8850 (PXM1) edge concentrator.
Cisco MGX and Service Expansion Shelf Error Messages, Release 5 OL-4553-01	Provides error message descriptions and recovery procedures.
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide for MGX 8850 (PXM45) and MGX 8950, Release 4 OL-5087-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 (PXM45) and Cisco MGX 8950 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 2.1 78-12510-02	Describes how to install and configure the Cisco MGX Route Processor Module (RPM/B or RPM-PR) in the Cisco MGX 8850 (PXM1), the Cisco MGX 8250, and the Cisco MGX 8230 edge concentrators. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
Cisco PNNI Network Planning Guide for MGX and SES Products OL-3847-01	Provides guidelines for planning a PNNI network that uses Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, or Cisco BPX 8600 switches or the MGX 8880 Media Gateway. When connected to a PNNI network, each Cisco BPX 8600 Series switch requires an SES for PNNI route processing.
Cisco Service Expansion Shelf Hardware Installation Guide, Release 1 DOC-786122=	Provides instructions for installing and maintaining an SES controller.
Cisco SES PNNI Controller Command Reference, Release 3 DOC-7814260=	Describes the commands used to configure and operate the SES PNNI controller.
Cisco SES PNNI Controller Software Configuration Guide, Release 3 DOC-7814258=	Describes how to configure, operate, and maintain the SES PNNI controller.
Cisco Voice Interworking Services (VISM) Configuration and Command Reference Guide, Release 3.2 OL-4359-01	Describes how to install and configure the Voice Interworking Service Module (VISM) in the Cisco MGX 8830, Cisco MGX 8850 (PXM45), and Cisco MGX 8850 (PXM1E) multiservice switches. Provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.
Cisco Voice Switch Services (VXSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4625-01	Describes the features and functions of the new Voice Switch Service Module (VXSM) in the Cisco MGX 8880 Media Gateway and in the Cisco MGX8850 (PXM45 and PXM1E) multiservice switches. Also provides configuration procedures, troubleshooting procedures, and Cisco CLI configuration information.
Cisco Wide Area Network Manager Database Interface Guide, Release 15 OL-4587-01	Provides information about accessing the CWM Informix database that is used to store information about the network elements.
Cisco Wide Area Network Manager Installation Guide, Release 15 OL-4550-01	Provides procedures for installing Release 5 of the CWM network management system.
Cisco Wide Area Network Manager SNMP Service Agent, Release 15 OL-4551-01	Provides information about the CWM Simple Network Management Protocol service agent, an optional adjunct to CWM that is used for managing Cisco WAN switches through SNMP.

Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco WAN Manager User's Guide, Release 15 OL-4552-01	Describes how to use the CWM Release 15 software, which consists of user applications and tools for network management, connection management, network configuration, statistics collection, and security management. **Note** The CWM interface now has built-in documentation support in the form of online Help. On a PC, press **F1** to access Help; on a UNIX workstation, press the **Help** key. Alternatively, on either system you can select **Help** from the main or popup menu.
Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3 DOC-7810327=	Describes how to use the high-speed Frame Relay (FRSM-12-T3E3) commands that are available in the CLI of the Cisco MGX 8850 (PXM45) switch.
Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.00 OL-4539-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.0.00 OL-4538-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.00 OL-5190-01	Provides new feature and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.3(2)T5 for MGX Releases 1.3.00 and 5.0.00 OL-4535-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.3(2)T5 for PXM45-based Switches, Release 5.0.00 OL-4536-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.2.1 OL-4544-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.0 OL-4627-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco Wide Area Network Manager, Release 15.0.00 OL-4151-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Finding Documentation for Cisco MGX, BPX, SES, and CWM Products

The previous "Ordering Documentation" section applies to other Cisco documentation. Starting in 2003, all documents listed in the "Related Documentation" section are available online only unless stated otherwise. You can find the documents listed in Table 1 online as follows:

- In your browser's URL field, enter **www.cisco.com**. In the top right search field, enter the complete document part number (for example, enter **OL-4538-01**, including the -01 suffix). Click on GO.
- For the Cisco Wide Area Network Manager (CWM) documents, in your browser's URL field, enter **http://www.cisco.com/univercd/cc/td/doc/product/wanbu/svplus/index.htm** and look for the CWM release number.
- For all other documents, in your browser's URL field, enter **http://www.cisco.com/univercd/cc/td/doc/product/wanbu/index.htm**. Look for the switch name and release number. For example, look for *MGX 8850 (PXM1E)*, then *Release 5*.

Documentation Feedback

You can submit e-mail comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

http://www.cisco.com/tac

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

http://tools.cisco.com/RPF/register/register.do

Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

http://www.cisco.com/tac/caseopen

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Go to this URL to visit the company store:

  http://www.cisco.com/go/marketplace/

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/en/US/learning/index.html

CHAPTER 1

Introduction

This chapter introduces the CESM and MPSM cards that are supported in Cisco MGX Release 5 and Cisco MGX Release 1.3.

Also introduced is the Service Resource Module (SRM) which provides services to both the CESM and MPSM cards.

These topics introduce and describe the features of the CESM, MPSM, and SRM cards:

- CESM and MPSM Card Types
- MPSM Card Features
- Eight Port CESM and MPSM Card Features
- SRM Card Services

CESM and MPSM cards are supported by the PXM1, PXM1E, and the PXM45 processor cards in Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), and Cisco MGX 8830 switches.

CESM and MPSM Card Types

The CESM and MPSM cards documented in this manual are the single-height CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cell bus service modules.

Note In this documentation release not all of the Circuit Emulation service modules supported on Cisco MGX PXM1-based systems have been documented. Only the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES service modules have been documented and verified for the PXM1 platform. For PXM1 documentation of the CESM-T3E3 service module, refer to the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3*.

When operating under control of the PXM1, PXM1E, or PXM45 processor card, the Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), or Cisco MGX 8830 switches support the CESM and MPSM cards listed in Table 1-1.

Table 1-1 CESM and MPSM Cards Supported in MGX Switches

Front Card	Back Card	Maximum Ports	Maximum Connections
CESM-8T1/B	RJ48-8T1 R-RJ48-8T1	192	192
CESM-8T1	RJ48-8T1 R-RJ48-8T1	192	192
CESM-8E1	RJ48-8E1 MGX-RJ48-8E1 SMB-8E1, R-RJ48-8E1 R-SMB-8E1	248	248
MPSM-8T1-CES	RJ48-8T1 R-RJ48-8T1	192	192
MPSM-8E1-CES	MGX-RJ48-8E1 RJ48-8E1 SMB-8E1 R-RJ48-8E1 R-SMB-8E1	248	248
CESM-T3E3	BNC-2T3	1	1
	BCN-2E3	1	1

The R-RJ48-8T1, R-RJ48-8E1, and R-SMB-8E1 back cards support 1:N card redundancy through the optional MGX-SRM-3T3/C, SRME, and SRME/B cards.

Support for each type of the CESM and MPSM cards by the PXM1, PXM1E, and PXM45 processor cards is shown in Table 1-2

Table 1-2 CESM and MPSM Cards Supported by PXM1, PXM1E, and PXM45 Controllers

	MGX 8230, 8250	MGX 8850					MGX 8830
Service Module	**PXM1**	**PXM1**	**PXM45**	**PXM45/B**	**PXM45/C**	**PXM1E**	**PXM1E**
CESM-8T1/B	Yes	Yes	No	Yes	Yes	Yes	Yes
CESM-8T1	Yes	Yes	No	Yes	Yes	No	No
CESM-8E1	Yes	Yes	No	Yes	Yes	Yes	Yes
MPSM-8T1E1	Yes	Yes	No	Yes	Yes	Yes	Yes
CESM-T3E3	Yes	Yes	No	No	No	No	No

The main function of the Circuit Emulation Service Module (CESM) and the Multi Protocol Service Module (MPSM) is to provide a constant bit rate (CBR) circuit emulation service by converting data streams into CBR AAL1 cells for transport across an ATM network. The CESM and MPSM cards support the CES-IS specifications of the ATM Forum.

The most common application is legacy support for digitized voice from a PBX or video from a codec. Using circuit emulation, a company can expand its data communication network without specific voice or video cards to meet its voice or teleconferencing requirements.

The preferred tool for configuring, monitoring, and controlling service modules is the Cisco WAN Manager (CWM) application for equipment management and connection management. However, the command-line interface (CLI) also provides access to the service modules and is highly applicable during initial installation, troubleshooting, and any situation in which low-level control is useful.

MPSM Card Features

These topics describe the features of the MPSM card:

- MPSM-8T1E1 Card Common Features
- MPSM-8T1-CES Card Features
- MPSM-8E1-CES Card Features
- MPSM-8T1E1 Card Differences

MPSM-8T1E1 Card Common Features

Designed as a replacement for the existing cell bus service modules (AUSM-8T1/B, AUSM-8E1/B, CESM-8T1, CESM-8E1, FRSM-8T1, FRSM-8T1-C, FRSM-8E1, and FRSM-8E1-C), the MPSM-8T1E1 card is an Any Service Any Card (ASAC) service module. This supports multiple interface types (T1 and E1) and multiple service types (ATM, Frame Relay, and Circuit Emulation).

The MPSM-8T1E1 card can be used with or without services provisioned on the card. Without services provisioned on the card, the MPSM-8T1E1 is used in a redundancy group and retains its physical card type name of MPSM-8T1E1.

When provisioned for a specific interface and service type, the MPSM-8T1E1 card takes on a logical card type name depending upon what interface and service type has been configured. For example, if an MPSM-8T1E1 in standby state is provisioned (using the PXM **cnfcdmode** command) for Circuit Emulation services using a T1 interface, the card changes its name to the logical card type name of MPSM-8T1-CES.

Features common to the MPSM-8T1E1 regardless of the interface and service type configured include:

- Single firmware image for all services and platforms.
- Service type and interface type configured is for the entire card.
- Run-time firmware is stored on the flash memory improving the card bring up time.
- Command Line Interface (CLI) is consistent with the existing CLI on the eight port Cell Bus Service Modules (AUSM, CESM, and FRSM).
- Optional software features (rate control only) enabled through feature licenses.
- Support for connection provisioning using VSI proxy and Portable Auto Route (PAR) enabling use in the PXM45, PXM1E, and PXM1 based systems.

- Support for all the existing eight port Cell Bus Service Module (CBSM) back cards.
- Graceful upgrade from the existing CBSMs to the MPSM.
- Onboard NxDS0, T1/E1 Bit Error Rate Test (BERT) including V54/PN127 extended loopback pattern generation and verification.
- Support for Online Diagnostics.
- Support for Core Memory dumps.
- Support from SRM and SRME for T1/E1 bulk distribution, 1:N redundancy, loopbacks, and BERT. Redundancy features include:
  - 1:N redundancy between existing CBSMs and MPSM with CBSM as primary and MPSM as secondary.
  - 1:N redundancy between multiple services (ATM, Frame Relay, Circuit Emulation). For example, there can be an AUSM-8T1/B and FRSM-8T1 in a single redundancy group with the MPSM-8T1E1 acting as secondary.
  - 1:N redundancy between MPSMs.

MPSM-8T1-CES Card Features

When the MPSM-8T1E1 card is configured to support a T1 interface type and Circuit Emulation services, the card becomes an MPSM-8T1-CES card. It then supports the features common to all the CESM cards and the specific features of the CESM-8T1/B and CESM-8T1 cards.

The MPSM-8T1-CES provides eight T1 interfaces for full-duplex communications at up to 1.544 Mbps per interface. This supports a total card throughput of 12.352 Mbps. The physical connector for each line is an RJ48 connector.

MPSM-8E1-CES Card Features

When the MPSM-8T1E1 card is configured to support an E1 interface type and Circuit Emulation services, the card becomes an MPSM-8E1-CES card. It then supports the features common to all the CESM cards and the specific features of the CESM-8E1 card.

The MPSM-8E1-CES provides eight E1 interfaces for full-duplex communications at up to 2.048 Mbps per interface. This provides a total card throughput of 16.384 Mbps. The physical connectors for each card can be either RJ48 connectors or SMB connectors.

MPSM-8T1E1 Card Differences

Differences between the MPSM-8T1E1 card and the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards include:

- The MPSM-8T1E1 card supports Bit Error Rate Testing (BERT) through use of the Service Resource Module (SRM) and Onboard BERT functionality. The CESM-8T1/B, CESM-8T1, and CESM-8E1 cards support BERT using only the SRM.
- The MPSM-8T1E1 card supports Online Diagnostics for active and standby cards and does not support the Self Test command set (**clrslftst**, **cnfslftst**, **dspslftst**, **dspslftsttbl**, and **runslftstno**). The CESM-8T1/B, CESM-8T1, and CESM-8E1 cards do not support Online Diagnostics and continues to support the Self Test command set.

- The MPSM-8T1E1 card supports Core Memory Dumps through the use of the **core** command. The CESM-8T1/B, CESM-8T1, and CESM-8E1 cards do not support this feature.
- The CESM-8T1/B supports Multi-frame synchronization on T1 lines. The MPSM-8T1-CES does not support Multi-frame synchronization.
- The default value for CDVT on unstructured adaptive clocking connections on the MPSM-8T1-CES and MPSM-8E1-CES cards is 1875 microseconds. The default value for CDVT on unstructured adaptive clocking connections on the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards is 1000 microseconds.
- The MPSM-8T1-CES and MPSM-8E1-CES cards support the following statistics which are displayed by using the **dspchancnt** command: cesPointerReframes, cesBufUnderflows, cesBufOverflows, cesUflowInsCells, and cesOflowDropBytes. The CESM-8T1/B, CESM-8T1, and CESM-8E1 cards do not support these statistics.

Eight Port CESM and MPSM Card Features

Table 1-3 summarizes the key features of the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards:

Table 1-3 Eight Port CESM and MPSM Card Features

Feature	CESM-8T1/B	CESM-8T1 CESM-8E1	MPSM-8T1-CES	MPSM-8E1-CES
Service Type	Structured, Unstructured	Structured, Unstructured	Structured, Unstructured	Structured, Unstructured
Clocking	Sync/Async (SRTS/Adap)	Sync/Async (SRTS/Adap)	Sync/Async (SRTS/Adap)	Sync/Async (SRTS/Adap)
Idle Suppression	Yes	Yes	Yes	Yes
Partial fill	Yes	Yes	Yes	Yes
BERT through SRM	Yes	Yes	Yes	Yes
Onboard BERT	No	No	Yes	Yes
Online Diagnostics	No	No	Yes	Yes
Self Test Commands	Yes	Yes	No	No
Card Redundancy	1:N	1:N	1:N	1:N
Multi-Frame Synchronization	Yes	No	No	No
Line Conditioning	Yes	Yes	Yes	Yes
Core Memory Dumps	No	No	Yes	Yes

These topics describe the features of the CESM and MPSM cards:

- CESM and MPSM Card Common Features
- Peak Cell Rate Calculation
- T1/E1 Clocking Mechanism
- Synchronous Clocking

- Asynchronous Clocking (SRTS)
- Asynchronous Clocking (Adaptive)
- Idle Suppression
- Structured Data Transfer
- Unstructured Data Transfer
- Cell Delay Treatment

CESM and MPSM Card Common Features

The CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES service modules:

- Provide up to eight T1 or E1 interfaces.
- Support SRM configured BERT and loopbacks.
- Support on T1 lines B8ZS or AMI line coding and ANSI T1.408 extended superframe (ESF) format line framing.
- Support on E1 lines HDB3 or AMI line coding and ITU G.704 16-frame multiframe (MF) line framing and clear channel.
- Support LOS, LOF, AIS, RAI, FEBE, remote LOS/LOF, all ones received, bipolar violation, CRC errors detection and generation, and threshold crossing alarms.
- Support OAM fault management using F5 AIS/RDI and end-to-end/segment loopbacks.
- Allow user configurable alarm thresholds.
- Comply with ATM Forum CES-IS V2.0.
- Allow Structured Data Transfer (SDT) or Unstructured Data Transfer (UDT) per physical interface.
- Provide Nx64 Kbps fractional DS1/E1 service (SDT only). The CESM or MPSM in Structured Data Transfer Mode supports fractional DS1/E1 service (time slots must be contiguous). Any Nx64 channels can be mapped to any VC. Therefore, multiple ports can be defined that are composed of unique contiguous time slots and a connection is used to emulate the data for that logical port.
- Support on T1 cards up to 192 DS0 ports (24 channels x 8 lines) operating simultaneously with each interface configurable as a single port (UDT) or up to 24 ports (SDT) running at full line rate at Nx64 kbps.
- Support on E1 cards up to 248 DS0 ports (31 channels x 8 lines) operating simultaneously with each interface configurable as a single port (UDT) or up to 31 ports (SDT) running at full line rate at Nx64 kbps.
- Support synchronous clocking in both Structured Data Transfer (SDT) mode and Unstructured Data Transfer (UDT) mode. Synchronous clocking is derived from the switch.
- Support asynchronous clock mode (UDT only) with Synchronous Residual Time Stamp (SRTS) and adaptive clock recovery methods.
- Provide ON/OFF hook detection and idle suppression using channel-associated signalling (CAS). Available only in SDT mode. Supported only for single DS0 timeslots.
- Support DS1 extended superframe (ESF) channel associated signalling (CAS) with a mulitframe (MF) option enabled (supported only on CESM-8T1/B).

- Allow per VC a choice of partially filled AAL1 cell payload to improve cell delay. Type fill range (bytes):
  - T1 Structured: 25–47.
  - T1 Unstructured: 33–47.
  - E1 Structured: 20–47.
  - E1 Unstructured: 33–47.
- Provide a maximum of 192 T1 and 248 E1 connections per card.
- Support per-VC queuing in both directions and per-VC traffic shaping in egress direction.
- Support PNNI Preferred Routing for SPVCs.
- Support CE-to-CE and CE-to-ATM SPVC endpoints.
- Support XPVC (CWM) as well as PVC (PAR) support for Feeder nodes.

Peak Cell Rate Calculation

The following features are shared by the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES service modules:

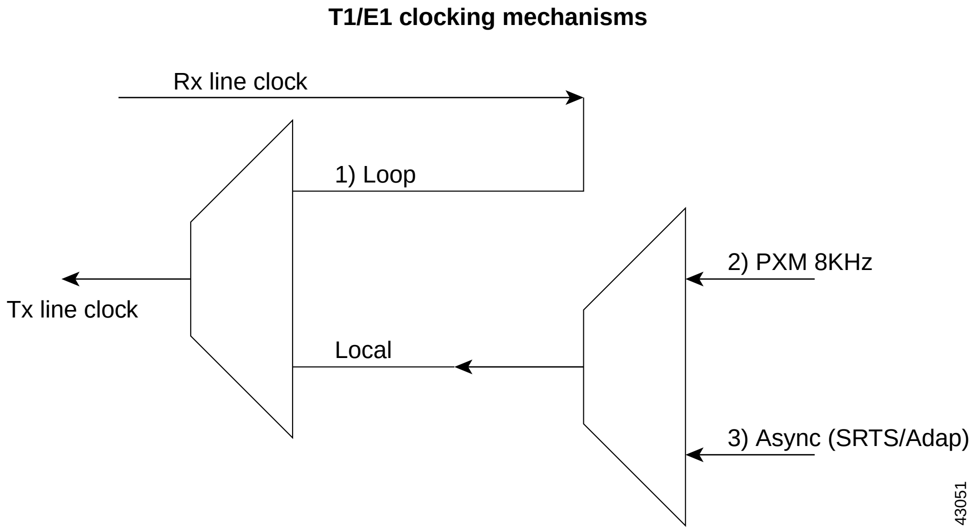
- Partial Fill Value of AAL1 cell (K bytes).
- SDT Time slots (N channels).
- Unstructured T1 cell rate:
  - (1.544 x 10^6 bps)/(K octets/cell x 8 bits/octet).
  - 4,107 cps (for K = 47 bytes).
- Unstructured E1 cell rate:
  - (2.048 x 10^6 bps)/(K octets/cell x 8 bits/octet).
  - 5,447 cps (for K = 47 bytes).
- Structured N x 64 cell rate, basic mode:
  - (8,000 x N) / (K octets/cell).
  - 170 cps (for K = 47, and N = 1).

T1/E1 Clocking Mechanism

The CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES provide the choice of a physical interface Tx clock from one of the following sources, as illustrated in Figure 1-1:

1. Loop clocking derived from Rx Line Clock.
2. MGX local switch clock derived on the PXM (Synchronous).
3. SRTS and Adaptive based clock (for T1/E1 unstructured asynchronous mode only).

Figure 1-1 T1/E1 Clocking Mechanisms



When deciding upon a network clocking architecture, it is important to develop a robust clocking plan for a network using CESM and MPSM cards, otherwise dribbling bit errors, frame slips, and other timing issues may be encountered in the network.

Synchronous Clocking

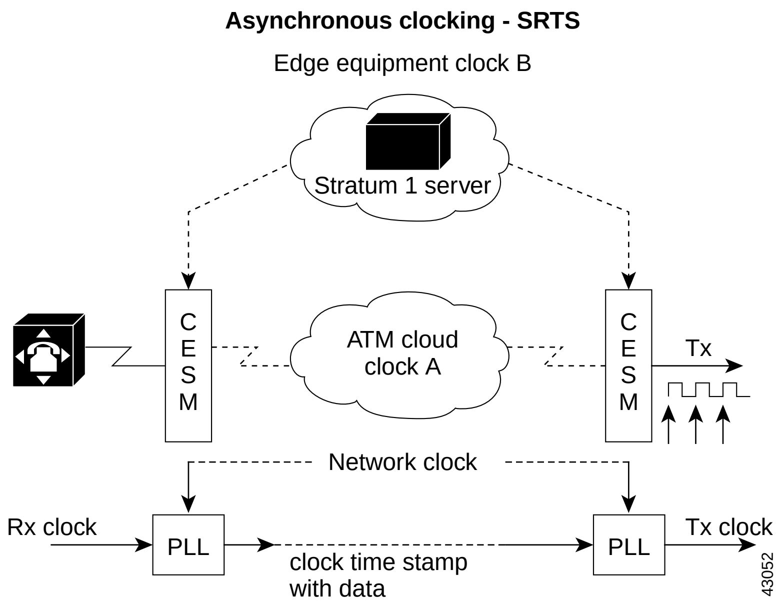
Synchronous clocking is available on structured and unstructured circuit emulation ports. The circuit data leaving the network uses the same clock as the Cisco MGX switch. This clock signal is available through the timing bus on the Cisco MGX backplane. Assuming the Cisco MGX network is synchronized, the ingress and egress data are also synchronized.

Asynchronous Clocking (SRTS)

Synchronous Residual Time Stamp (SRTS) clocking requires a Primary Reference Source (PRS) and network clock synchronization services. This clocking mode allows user equipment at the edges of an ATM network to use a clocking signal that is different (and completely independent) from the clocking signal being used in the ATM network. However, SRTS clocking is used only for unstructured (clear channel) CES services.

For example, as illustrated in Figure 1-2, user equipment at the edges of the network can be driven by clock B, while the devices within the ATM network are being driven by clock A. The user-end device introduces traffic into the ATM network according to clock B. The CESM or MPSM segments the CBR bit stream into ATM cells; it measures the difference between user clock B, which drives it, and network clock A. This delta value is incorporated into every eighth cell. As the destination CESM or MPSM receives the cells, the card not only reassembles the ATM cells into the original CBR bit stream, but also reconciles the user clock B timing signal from the delta value. Thus, during SRTS clocking, CBR traffic is synchronized between the ingress side of the CES circuit and the egress side of the circuit according to user clock signal B, while the ATM network continues to function according to clock A.

Figure 1-2 Asynchronous Clocking



Asynchronous Clocking (Adaptive)

Adaptive clocking requires neither the network clock synchronization services nor a global PRS for effective handling of CBR traffic. Rather than using a clocking signal to convey CBR traffic through an ATM network, adaptive clocking infers appropriate timing for data transport by calculating an average data rate for the CBR traffic. However, as in the case with SRTS clocking, adaptive clocking is used only for unstructured (clear channel) CES services. See Figure 1-3.

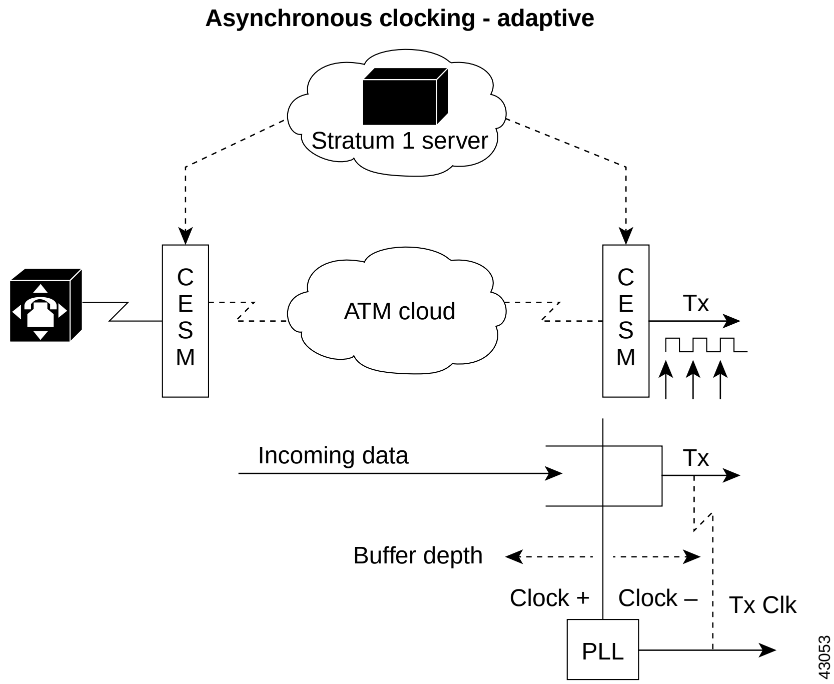
For example, if CBR data is arriving at a CES module at a rate of X bits per second, then that rate is used to govern the flow of the CBR data through the network. Actually the CES module automatically calculates the average data rate. This calculation occurs dynamically as user data traverses the network.

When the CES module senses that its segmentation and reassembly (SAR) buffer is filling up, it increases the rate of the (TX) clock for its output port, thereby draining the buffer at a rate that is consistent with the rate of data arrival.

Similarly, the CES module slows down the transmit clock of its output port if it senses that the buffer is being drained faster than the CBR data is being received. Adaptive clocking attempts to minimize wide excursions in SAR buffer loading, while at the same time providing an effective means of propagating CBR traffic through the network.

Relative to other clocking modes, implementing adaptive clocking is simple and straightforward. It does not require network clock synchronization services, a PRS, or the advance planning typically associated with developing a logical network timing map. However, adaptive clocking does not support structured CES services, and it exhibits relatively high wander characteristics.

Figure 1-3 Asynchronous Clocking (Adaptive)



Idle Suppression

Supported only on single timeslot connections and not on NxDS0 connections, the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards in structured mode can interpret CAS robbed bit signalling for T1 (ABCD for ESF and AB for SF frames) and CAS for E1 (time slot 16). Called the OnHookCode, the ABCD code is user configurable per VC. By detecting on-hook states, AAL1 cell transmission is suppressed for the idle channel. This reduces the consumption of ATM backbone bandwidth. ON/OFF hook detection and Forced Idle Suppression can be enabled or disabled per VC by means of SNMP through the NMS or the Command Line Interface (CLI) using the -onhkcd option of the **xcnfchan** command (**xcnfchan** -onhkcd = 0-15; ABCD = 0000 = 0 … ABCD = 1111 = 15).

On the ingress side (ATM port to ATM network), the CESM or MPSM card monitors the signalling bits of the TDM data frames. Whenever a particular connection goes to on-hook or off-hook states, the CESM or MPSM card senses this condition by comparing the ABCD bits in the TDM frames with the configured OnHookCode for that channel.

When an on-hook state is detected on the near-end CESM or MPSM card, keep-alive ATM cells are sent once every second to the far-end CESM or MPSM. When the far-end CESM or MPSM card detects the on-hook state as well, and also receives the keep-alive ATM cells sent from the near-end CESM or MPSM card, it will start sending keep-alive ATM cells to the near-end CESM or MPSM card and suppress the channel (stop sending ATM cells to the ATM network except the keep-alive ATM cells) in the far-end to near-end direction. When the near-end CESM or MPSM card receives the keep-alive ATM cells and the on-hook state is still detected, it will also start suppressing the channel in the near-end to far-end direction. After both ends suppress the channel there will be only keep-alive ATM cells transmitted on the channel, but no user data. This conserves ATM network bandwidth.

When either the near-end or far-end CESM or MPSM cards stop detecting the on-hook code or the keep-alive ATM cells, channel suppression will cease and user data will start being sent to the ATM network.

Structured Data Transfer

If you configure an individual port for structured data transfer, the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES support:

- Synchronous clocking.
- Superframe or Extended Superframe for T1.
- Fractional (Nx64 Kbps) DS1/E1 service (contiguous time slots only). You can map a Nx64 Kbps channel to any VC.
- CAS robbed bit for T1 (ABCD for ESF and SF frames) and CAS for E1 (channel 16).
- CCS channel as a transparent data channel.
- A choice of partial-fill payload sizes.
- Idle detection and suppression for 64Kbps CAS connections.
- Trunk conditioning support as per TR-NWT-000170 Issue-2 for T1 and ITU G.703 for E1.
- Line conditioning for T1 to E1 connections.
- Loopbacks on a line using the **addlnloop** and **xcnfln** commands.
- **Tstcon** and **tstdelay** command support to detect connectivity of a VC and the delay in the path through which a connection is routed.
- Bit error rate test (BERT) functionality with loopback pattern generation and verification on individual lines or logical port. The CESM-8T1/B, CESM-8T1, and CESM-8E1 requires the use of the SRM for BERT functionality. The MPSM-8T1-CES and MPSM-8E1-CES can use either its own Onboard BERT or the SRM for BERT functionality.

Unstructured Data Transfer

If you configure an individual port for unstructured data transfer, the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES support:

- Synchronous or asynchronous clocking at T1 (1.544 Mbps) or E1 (2.048 Mbps) rates. For asynchronous clocking you can select either SRTS and adaptive clock recovery.
- The special port type *framingOnVcDisconnect*. This port type prevents a remote-end CPE from going to LOF by placing a line in remote loopback mode when the CESM or MPSM determines that a deletion or suspension of a connection segment or cell loss on the connection has occurred at the network-side ATM interface.
- Ability to detect and display a yellow alarm for the ESF framing on a T1 line.
- Loopbacks on a line using the **addlnloop** and **xcnfln** commands.
- **Tstcon** and **tstdelay** command support to detect connectivity of a VC and the delay in the path through which a connection is routed.
- Bit error rate test (BERT) functionality with loopback pattern generation and verification on individual lines. The CESM-8T1/B, CESM-8T1, and CESM-8E1 requires the use of the SRM for BERT functionality. The MPSM-8T1-CES and MPSM-8E1-CES can use either its own Onboard BERT or the SRM for BERT functionality.

Cell Delay Treatment

For each connection on CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards, you can configure a tolerable variation in the cell arrival time (CDVT) according to the expected reliability of the route. The CDVT applies to the AAL1 receive buffer. After an underrun, the receiver places the contents of the first cell to arrive in a receive buffer, then plays it out at least one CDVT value later. For each VC, the maximum cell delay and CDVT (or jitter) are

- For T1:
  - Cell delay of 48 msec.
  - CDVT of 0 to 24 msec in increments of 125 microseconds.
- For E1:
  - Cell delay of 64 msec.
  - CDVT of 0 to 26 msec in increments of 125 microseconds.

SRM Card Services

These topics describe the services that the SRM card provides to the CESM and MPSM cards:

- Overview of the SRM Card
- SRM Card Features

Overview of the SRM Card

The Cisco MGX switch supports both 1:1 and 1:N card redundancy for service modules. The 1:N card redundancy feature requires that a Service Resource Module (SRM) card be installed in the MGX switch. If there are redundant PXMs installed in the MGX switch, then the SRMs must likewise be installed in redundant pairs. In Cisco MGX Releases 5 and 1.3, three models of the SRM are supported on Cisco MGX switches: the SRM-3T3/C, the SRME, and the SRME/B.

The SRM manages Bulk Mode Distribution with 1:N Redundancy, Non-Bulk Mode 1:N Redundancy, and BERT functions on T1 or E1 service module lines and ports. Cards that have the T1 or E1 access lines physically connected to their back cards are in non-bulk mode. Cards that receive T1 or E1 access lines from the SRM across the backplane of the switch are in bulk mode.

Line redundancy is available to service modules if they are configured for bulk distribution using the SRME or SRME/B card. By using the optical back card option, intercard APS line redundancy is available only if the SRM and PXM have been installed in redundant pairs.

For non-bulk mode cards 1:N redundancy uses the redundancy bus on the backplane to pass the user traffic from the back card of the failed primary card to the active secondary front card. In non-bulk mode, multiple 1:N redundancy groups can be defined but an active backup operation is permitted only in one of the groups in a given bay at any given time. In this mode, a back card is not required for the SRM.

For cards in bulk mode, the distribution bus is used to pass the user traffic to the secondary card. In bulk distribution mode, multiple 1:N redundancy groups can be defined. Because the distribution bus can handle multiple traffic flows, multiple secondary cards can be active at the same time.

SRM Card Features

Support for each type of the SRM cards by the PXM1, PXM1E, and PXM45 processor cards is shown in Table 1-4.

Table 1-4 SRM Cards Supported by PXM1, PXM1E, and PXM45 Controllers

		MGX 8230, 8250	MGX 8850					MGX 8830
SRM Card	Back Card	PXM1	PXM1	PXM45	PXM45/B	PXM45/C	PXM1E	PXM1E
SRM-3T3/C	BNC-3T3-M	Yes	Yes	No	Yes	Yes	Yes	Yes
SRME	SMFIR-1-155 STM1-EL-1	Yes	Yes	No	Yes	Yes	Yes	Yes
SRME/B	SMFIR-1-155 STM1-EL-1 BNC-3T3-M	Yes	Yes	No	Yes	Yes	Yes	Yes

The SRM-3T3/C provides redundancy services, BERT services, and T3 to T1 line distribution. The SRM-3T3/C T1 line distribution feature has the following capabilities and limitations:

- Supports up to 80 T1 lines from three T3 lines on the Cisco MGX 8250, Cisco MGX 8850 (PXM1), and Cisco MGX 8850 (PXM1E/PXM45) per bay. Line distribution is supported in all 12 service module slots except for on the Cisco MGX 8250 and Cisco MGX 8850 (PXM1) where slots 9, 10, 25, and 26 do not support line distribution.
- Supports up to 64 T1 lines from three T3 lines on the Cisco MGX 8230 and Cisco MGX 8830. Line distribution is supported in all 8 service module slots.
- A service module should have all T1 lines coming from the SRM-3T3/C or all T1 lines coming from the back card of the service module. If you link just one T1 channel on a service module to the SRM-3T3/C, the back card on the service module becomes inoperative.
- If bulk T1 line distribution is in use, service module back cards are not required.

The SRME provides redundancy services, BERT services, and OC-3/STM-1 to T1/E1 line distribution. The SRME T1 and E1 line distribution feature has the following capabilities and limitations:

- Supports either 84 T1 lines or 63 E1 lines from one OC-3/STM-1 line on the Cisco MGX 8250, Cisco MGX 8850 (PXM1), and Cisco MGX 8850 (PXM1E/PXM45). Line distribution is supported in all 12 service module slots.
- Supports either 64 T1 lines or 63 E1 lines from one OC-3/STM-1 line on the Cisco MGX 8230 and Cisco MGX 8830. Line distribution is supported in all 8 service module slots.
- In a given bay on the Cisco MGX 8850 (PXM1E/PXM45), the mixing of T1 and E1 line distribution is not supported. If you want to set up both T1 and E1 line distribution you must install all T1 service modules in one bay and all E1 service modules in the other bay. On the Cisco MGX 8830 you must choose either T1 or E1 line distribution.
- VT1.5 extraction and distribution of T1 from the Sonet (OC-3/STS-3) interface (North America).
- VC11 extraction and distribution of T1 from the SDH (STM-1) interface (Japan).
- VC12 extraction and distribution of E1 from the SDH (STM-1) interface (Rest of the world).

- A service module should have all T1 or E1 lines coming from the SRME or all T1 or E1 lines coming from the back card of the service module. If you link just one T1 or E1 channel on a service module to the SRME, the back card on the service module becomes inoperative.
- If bulk line distribution is in use, service module back card are not required.

The SRME/B provides redundancy services, BERT services, OC-3/STM-1 to T1/E1 line distribution, and T3 to T1 line distribution. The SRME/B T1 and E1 line distribution feature has the combined capabilities and limitations of the SRM-3T3/C and SRME cards.

Table 1-5 summarizes card redundancy, bulk distribution, and BERT services that the SRM card provides to the CESM and MPSM cards. When consulting this table, remember that the SRME and SRME/B supports bulk distribution of both T1 and E1 lines and the SRM-3T3/C supports only bulk distribution of T1 lines.

Table 1-5 Card Redundancy, Bulk Distribution, and BERT Services for the CESM and MPSM cards

Front Card	1:N Card Redundancy with SRM	1:1 Card Redundancy with Y-cable	Bulk Distribution Support	BERT Support
CESM-8T1/B	Yes	No	Yes	Yes, with SRM
CESM-8T1	Yes	No	Yes	Yes, with SRM
CESM-8E1	Yes	No	Yes	Yes, with SRM
MPSM-8T1E1	Yes	No	Yes	Yes, with SRM and Onboard BERT
CESM-T3E3	No	Yes	No	Yes, with Onboard BERT

For more information on BERT, see Chapter 5, "Managing CESM and MPSM Cards."

Note For instructions on how to set up and configure a Cisco MGX switch for card redundancy, line redundancy, bulk distribution, and SRM supported BERT refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

CHAPTER 2

Preparing CESM and MPSM Lines and Ports for Communications

This chapter describes how to bring up physical lines and add logical ports on the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards by using the command-line interface (CLI).

These topics describe how to bring up physical lines and add logical ports to the CESM and MPSM cards installed in PXM45/PXM1E and PXM1 platforms:

- Preparing for Provisioning
- Quickstart Provisioning Procedures
- General CESM and MPSM Provisioning Procedures

Note CESM and MPSM cards, lines, and ports can also be configured using the Cisco WAN Manager (CWM) application. For configuration instructions, refer to the *Cisco WAN Manager User's Guide, Release 15*.

Bringing up physical lines and adding logical ports on CESM and MPSM card is described in Table 2-1.

Table 2-1 Line and Port Configuration on CESM and MPSM Cards

Configuration Task	Description
Bringing up physical lines	Lines establish physical layer connectivity between a CESM/MPSM port and the same port type (T1, for example) on another device.
Adding logical ports	Ports establish communications over a line to customer premises equipment (CPE).

To eliminate redundancy and to help experienced users complete configuration tasks efficiently, this chapter provides configuration quickstart procedures.

The first time you configure a line or port, use the applicable quickstart procedure to get an overview of the tasks to be performed. Then, for more detailed instructions, consult the appropriate section(s) elsewhere in the document that are called out in the quickstart procedure. As you gain experience in configuring CESM and MPSM lines and ports, referring to a quickstart procedure may suffice for performing a particular configuration task.

Tip You can get information about most CLI commands by entering the command without parameters. Ordinarily, experienced users can configure CESM and MPSM cards using just the quickstart procedures and the online help facilities.

Note For a detailed description of the commands used in this chapter, see Chapter 6, "CESM and MPSM Command Reference."

Preparing for Provisioning

Before you begin configuring lines and ports on CESM and MPSM cards, you need to initialize the cards you plan to provision. The MPSM card must be configured for the interface type and service type through the use of the PXM **cnfcdmode** command and also requires the management of feature licenses. Then you should develop and implement a plan for the card redundancy, line redundancy, and bulk distribution options available for each service module. This plan determines how service modules and their back cards must be installed in the chassis, and how lines must connect to the cards before software configuration starts. Without a plan developed for these services, a configuration change for any of these services has the potential to interrupt service and can require substantial configuration teardown.

The CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards support 1:N card redundancy and bulk distribution through the support of Service Resource Module (SRM) cards. Line redundancy is available to those service modules that support bulk distribution through use of the SRME or SRME/B card with an optical back card. For an overview of the features that the SRM card provides to the CESM and MPSM cards, see"SRM Card Services" in Chapter 1, "Introduction."

For instructions on displaying, moving, and allocating MPSM feature licenses and managing MPSM feature license alarms, see "Managing MPSM Feature Licenses" in Chapter 5, "Managing CESM and MPSM Cards."

For instructions on initializing cards; configuring card redundancy, line redundancy, and bulk distribution; and managing MPSM feature licenses on the PXM processor card, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Quickstart Provisioning Procedures

These quickstart tasks contain abbreviated procedures for selecting the MPSM interface and service type, moving MPSM feature licenses, and provisioning the line and port capabilities of CESM and MPSM cards installed in Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), and Cisco MGX 8830 switches:

- MPSM Interface and Service Configuration Quickstart
- Moving MPSM Feature Licenses Quickstart
- CESM and MPSM Line Configuration Quickstart
- CESM and MPSM Port Configuration Quickstart

These procedures provide a high-level overview and serve as a procedural reminder for users already experienced in configuring MGX switches.

MPSM Interface and Service Configuration Quickstart

To select the interface and service type on the MPSM-8T1E1 card, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session on the PXM processor card. **Note** To perform the steps in this quickstart procedure, you must log in as a user with SERVICE_GP privileges or higher.
Step 2	**cnfcdmode** <*options*> Related commands: **dspcd** <*slot*> **dspcds** **Note** These related commands are performed on the PXM processor card.	This step allows you to configure the interface and service type of the MPSM-8T1E1 card. Select the back card interface type (T1 or E1) and select the service (ATM, Frame Relay, or Circuit Emulation) this card will support. See the "Selecting MPSM Interfaces and Services" section that appears later in this chapter. **Note** The **cnfcdmode** command is performed on the PXM processor card.

Moving MPSM Feature Licenses Quickstart

To move MPSM feature licenses from the MPSM-8T1E1 card into the PXM license pool, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session.
Step 2	**dspliccd**	View the feature licenses that have been installed on the MPSM-8T1E1 card. See the "Displaying MPSM Feature Licenses" section in Chapter 5, "Managing CESM and MPSM Cards."

	Command	Purpose
Step 3	**movelic**	Move the MPSM feature licenses programmed on the MPSM-8T1E1 card to the switch license pool on the PXM processor card. See the "Moving MPSM Feature Licenses" section in Chapter 5, "Managing CESM and MPSM Cards."
Step 4	**dsplics** Related commands: **cnflic** <*options*> **dspliccds** **dspliccd** <*slot*> **dsplicalms** **Note** These related commands are performed on the PXM processor card.	View the MPSM feature licenses installed in the PXM license pool. See the "Moving MPSM Feature Licenses" section in Chapter 5, "Managing CESM and MPSM Cards." **Note** The **dsplics** command is performed on the PXM processor card.

Note To install spare feature licenses into the PXM license pool, transfer feature licenses from one switch to another switch, and resolve feature license alarms, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* and the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*.

CESM and MPSM Line Configuration Quickstart

To add a line to a CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, or MPSM-8E1-CES card, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session. **Note** To perform the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**addln** <*line*> Related commands: **dsplns** **dspln** <*line*> **delln** <*line*>	Bring up a line. This step establishes physical layer connectivity between an MGX switch and a CPE device. See the "Bringing Up Lines" section that appears later in this chapter.
Step 3	**cnfln** <*options*> Related commands: **dsplns** **dspln** <*line*> **delln** <*line*> **xcnfln** <*options*>	This step allows you to change a line configuration when the default or existing configuration needs changing. For example, the line configuration must be changed if you want to create ports that support unstructured E1 communications. See the "Configuring Lines" section that appears later in this chapter.

CESM and MPSM Port Configuration Quickstart

Circuit emulation ports connect a Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), or Cisco MGX 8830 to CPE circuit emulation devices. In most cases these devices are routers or PBXs.

Note The equipment at both ends of a circuit emulation line must be configured with compatible settings in order for the link to be logically completed.

To configure a circuit emulation port on a CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, or MPSM-8E1-CES card, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	**addln** <*line*>	Prepare a CESM or MPSM line for communications. See "“CESM and MPSM Line Configuration Quickstart” which appears earlier in this chapter.
Step 3	**addport** <*options*> Related commands: **dspport** <*port*> **dspports** **xcnfport** <*options*>	Add a circuit emulation port. This step establishes circuit emulation communications between two devices. See the “Adding Circuit Emulation Ports” section that appears later in this chapter.

General CESM and MPSM Provisioning Procedures

These procedures describe preparing CESM and MPSM cards for communications:

- Selecting MPSM Interfaces and Services
- Displaying Lines
- Bringing Up Lines
- Configuring Lines
- Adding Circuit Emulation Ports
- Configuring Circuit Emulation Ports

Selecting MPSM Interfaces and Services

Use the PXM **cnfcdmode** command as described in the following procedure to configure MPSM-8T1E1 interfaces and services:

Step 1 Establish a configuration session using a user name with SERVICE_GP privileges or higher.

Step 2 Enter the cnfcdmode command using the following format:

```
M8850_SF.7.PXM.a > cnfcdmode <slotNo> <ifType> <serviceType>
```

To use this command, the MPSM-8T1E1 card must be in the standby state with no configuration and not in a redundancy group. Table 2-2 defines the parameters for this command.

Table 2-2 cnfcdmode Command Parameters

Parameter	Description
slotNo	Enter the number for the slot in which the MPSM-8T1E1 card is installed.
ifType	Enter a number from the following list that selects the interface type to be used with the MPSM-8T1E1: • T1 Interface = 1 • E1 Interface = 2 • T3 Interface = 3 (Not applicable to the MPSM-8T1E1) • E3 Interface = 4 (Not applicable to the MPSM-8T1E1)
serviceType	Enter a number from the following list that selects the service the MPSM-8T1E1 will support: • Frame Relay Service = 1 • ATM Service = 2 • CES Service = 3

The following example shows how to configure an MPSM-8-T1E1 card to use a T1 interface and Circuit Emulation services:

```
M8850_SF.8.PXM.a > cnfcdmode 28 1 3
You are about to configure MPSM in slot 28 to :
Service Type : CES Interface Type : T1
cnfcdmode: Do you want to proceed (Yes/No)? y

M8850_SF.8.PXM.a >
```

After you set the interface type and service type, the card resets and the card state changes from Standby/Active to Active/Active.

Step 3 You can verify that the PXM **cnfcdmode** command has been run by looking at the *Inserted Card* row of the PXM **dspcd** <*slot*> command display.

Before configuring the MPSM-8-T1E1 for Circuit Emulation services, the *Inserted Card* row displays the generic name *MPSM-8T1E1*. After configuration, the generic name changes to a specific name such as MPSM-8T1-CES or MPSM-8E1-CES.

Table 2-3 lists the MPSM card names and what they mean when they appear in the PXM **dspcd** and **dspcds** command displays.

Table 2-3 MPSM-8-T1E1 Card Names in the PXM dspcd and dspcds Command Displays

Card Name	Description
MPSM-8T1E1	No service configured on card.
MPSM-8T1-ATM	Configured for ATM services and T1 interfaces.
MPSM-8E1-ATM	Configured for ATM services and E1 interfaces.
MPSM-8T1-CES	Configured for Circuit Emulation services and T1 interfaces.
MPSM-8E1-CES	Configured for Circuit Emulation services and E1 interfaces.
MPSM-8T1-FRM	Configured for Frame Relay services and T1 interfaces.
MPSM-8E1-FRM	Configured for Frame Relay services and E1 interfaces.

For more information on use of the PXM **cnfcdmode** command, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5,* the *Cisco MGX 8850 (PXM45/PXM1E), Cisco MGX 8950, and Cisco MGX 8830 Command Reference Guide, Release 5,* the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10,* and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Displaying Lines

To display all lines on a CESM or MPSM card, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP 1 privileges or higher.

Step 2 To display the current configuration for all lines on a CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, or MPSM-8E1-CES card, enter the **dsplns** command:

```
PXM1E_SJ.1.6.CESM.a > dsplns

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  6.1   RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  Yes   No
  6.2   RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  Yes   No
  6.3   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.4   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.5   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.6   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.7   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.8   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim

  LineNumOfValidEntries: 8

PXM1E_SJ.1.6.CESM.a >
```

The alarm state indicates whether the line is communicating with a remote switch. When the alarm state is blank or is reported as *No*, it indicates that the physical devices at each end of the line have established physical layer communications. Higher-layer connectivity is established later when ports are configured on the CESM and MPSM card lines.

Step 3 To display the configuration information for a particular line, enter a **dspln** command in the format shown below:

```
PXM1E_SJ.1.6.CESM.a > dspln 1

  LineNum:                    1
  LineConnectorType:          RJ-48
  LineEnable:                 Enabled
  LineType:                   dsx1ESF
  LineCoding:                 dsx1B8ZS
  LineLength:                 0-131 ft
  LineXmtClockSource:         LocalTiming
  LineLoopbackCommand:        NoLoop
  LineSendCode:               NoCode
  LineUsedTimeslotsBitMap:    0x1
  LineLoopbackCodeDetection: codeDetectDisabled

  LineNumOfValidEntries: 8

PXM1E_SJ.1.6.CESM.a >
```

This sample **dspln** command shows the configuration parameters of a T1 line for a CESM card.

Bringing Up Lines

Installing a CESM or MPSM card can add up to 8 physical lines to your switch. You must bring up a line before you can configure it or before you can provision circuit emulation services on the line.

Before a line is brought up, or after it is brought down, the switch does not monitor the line. Prior to bringing up a line, the CESM or MPSM port status light for the line is unlit, and all line alarms are cleared.

When you bring up a line on a CESM or MPSM card, the switch starts monitoring the line. The CESM or MPSM card port status light turns green when physical layer connectivity is established with a remote device. If a physical layer communications problem occurs, the port status light turns red and an alarm is reported.

Tip To minimize the number of alarms reported and to reduce the frequency of failed port status lamps (which display red), keep lines down until they are actually needed for communication.

To bring up a CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, or MPSM-8E1-CES line on an MGX switch, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP 1 privileges or higher.

Step 2 Select the CESM or MPSM card on which you want to bring up a line by issuing the **cc** command, as shown below:

```
PXM1E_SJ.1.7.PXM.a > cc <slotnumber>
```

Replace the <*slotnumber*> parameter with the number of the slot in which the CESM card is installed.

Step 3 Enter the **dsplns** command to check which lines on the card are available to bring up.

Step 4 To activate a line on the CESM or MPSM card, enter the **addln** command as shown below:

```
PXM1E_SJ.1.6.CESM.a > addln <line>
```

Replace the <*line*> parameter with the number corresponding to the back card physical port to which the line is connected. Table 2-4 lists the valid line numbers for the CESM and MPSM cards.

Table 2-4 CESM and MPSM Card Types

Front Card	Valid Line Numbers
CESM-8T1/B	1 to 8
CESM-8T1	1 to 8
CESM-8E1	1 to 8
MPSM-8T1-CES	1 to 8
MPSM-8E1-CES	1 to 8

The following example brings up a line with the default parameters.

```
PXM1E_SJ.1.4.CESM.a > addln 2

PXM1E_SJ.1.4.CESM.a >
```

Step 5 Enter the **dspln** command to verify that the line has been successfully brought up.

```
PXM1E_SJ.1.6.CESM.a > dsplns

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  6.1   RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  Yes   No
  6.2   RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  Yes   No
  6.3   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.4   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.5   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.6   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.7   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  6.8   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim

  LineNumOfValidEntries: 8

PXM1E_SJ.1.6.CESM.a >
```

When a line has been successfully brought up, the status column reports the line status as *Ena*, which is an abbreviation for enabled. Lines that have not been brought up are reported as *Dis* in the status column, which is an abbreviation for disabled.

Configuring Lines

All line types are brought up with a default configuration, which may or may not be compatible with the CPE device to which you are connecting. When configuring a CESM or MPSM card line, you must ensure that the devices at both ends of the connection are using the same configuration parameters on the shared line.

To configure lines on a CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, or MPSM-8E1-CES card, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP 1 privileges or higher.

Step 2 If you do not know the line number you want to configure on the CESM or MPSM card, enter the **dsplns** command to display the current configuration of all lines on the card:

```
PXM1E_SJ.1.6.CESM.a > dsplns
```

Remember, you cannot configure a line until you have brought it up. See the "Bringing Up Lines" section.

Step 3 To display the configuration information for the particular line that you want to configure, enter a **dspln** command in the format shown below:

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspln 1

  LineNum:                   1
  LineConnectorType:         RJ-48
  LineType:                  dsx1ESF
  LineEnable:                Enabled
  LineCoding:                dsx1B8ZS
  LineLength:                0-131 ft
  LineXmtClockSource:        LocalTiming
  LineLoopbackCommand:       NoLoop
  LineSendCode:              NoCode
  LineUsedTimeslotsBitMap:   0x0
  LineLoopbackCodeDetection: codeDetectDisabled
  LineBERTEnable:            Disable

  LineNumOfValidEntries: 8

M8250_SJ.1.6.MPSM8T1.CES.a >
```

This sample of the **dspln** command shows the configuration parameters of a T1 line on an MPSM card.

Step 4 To configure a line on a CESM or MPSM card, enter a **cnfln** command in the format shown below:

```
PXM1E_SJ.1.6.CESM.a > cnfln <line_num> <line_code> <line_len> <clk_src>
[E1-signalling|T1-Linetype]
```

The following example configures an E1 line for clear channel signalling.

```
PXM1E_SJ.1.3.CESM.a > cnfln 3 3 9 2 CLEAR

PXM1E_SJ.1.3.CESM.a >
```

Table 2-5 lists and describes the parameters that you use in configuring T1 and E1 lines on a CESM or MPSM card.

Table 2-5 Line Parameters for the cnfln Command

Parameter	Description
line_num	Enter the number of the line you want to configure. Use the **dsplns** command to display the available lines.
line_code	Select the line coding: • B8ZS (T1) = 2 • HDB3 (E1) = 3 • AMI (T1/E1) = 4
line_len	Enter the length of the line: • T1 range: – 0 to 131 feet = 10 – 131 to 262 feet = 11 – 262 to 393 feet = 12 – 393 to 524 feet = 13 – 524 to 655 feet = 14 – >655 feet = 15 • E1 (with SMB line module) = 8 • E1 (with RJ48 line module) = 9
clk_src	DSX1 clock source. • 1 = loop clock • 2 = local clock
E1-signalling *T1-Linetype*	This option selects E1 signalling methods or T1 line types. Enter the keyword for the signalling or line type combination listed below. E1 Signalling Methods: • CAS, no CRC = CAS • CAS with CRC = CAS_CRC • CCS, no CRC = CCS • CCS, with CRC = CCS_CRC • Clear E1 = CLEAR **Note** To support unstructured E1 communications (**addport** command), you must set the E1 signalling to CLEAR. T1 Line Types: • Dsx1ESF = ESF (MPSM only) • Dsx1D4 (SF) = D4 (MPSM only)

Step 5 To verify the line configuration changes made above, enter the **dspln** command for the appropriate line.

When configuring E1 signalling methods using the **cnfln** command, Table 2-6 shows the corresponding El line type displayed in the output of the **dspln** and **dsplns** commands.

Table 2-6 E1 Signalling Line Types

E1 Signalling Method	Line Type In Display Line(s) Command
CAS, no CRC	dsx1E1MF
CAS, with CRC	dsx1E1MFCRC
CCS, no CRC	dsx1E1
CCS, with CRC	dsx1E1CRC
Clear E1	dsx1E1CLEAR

Note The **xcnfln** command may also be used to configure lines on CESM and MPSM cards. For more information on the use of this command, see Chapter 6, "CESM and MPSM Command Reference."

Adding Circuit Emulation Ports

The "Bringing Up Lines" section that appears earlier in this chapter describes how to bring up physical lines by specifying the correct line port number. Line ports correspond to the line connectors on the back cards of Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), or Cisco MGX 8830 switches.

Bringing up a line establishes physical layer connectivity between two network devices. When you add a circuit emulation port to a line, you enable circuit emulation communications by means of that line.

The CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES, cards support structured and unstructured circuit emulation ports. Structured ports on CESM or MPSM cards can support up to 24 DS0 circuit emulation ports per T1 line and up to 31 DS0 circuit emulation ports per E1 line. Structured ports are associated with one or more consecutive timeslots on a line. Unstructured circuit emulation ports support only one port per line and must use the full bandwidth of the line for the unstructured port.

To add a circuit emulation port to a line, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Determine the line number on which you intend to add the circuit emulation port. To do so, enter the **dsplns** command.

Step 3 Verify that the port number you want to use is not already in use. To display a list of the configured ports on the CESM or MPSM card, enter the following command:

```
PXM1E_SJ.1.4.CESM.a > dspports

  Port      Ena/Speed   Type
  ------    --- ------ --------
  4.1.1     Add/1536k structur
  4.2.2     Add/1536k structur
  4.3.3     Add/1536k structur
  4.4.4     Add/1536k structur
```

```
  Number of ports:              4

  PortDs0UsedLine1:             0x00ffffff
  PortDs0UsedLine2:             0x00ffffff
  PortDs0UsedLine3:             0x00ffffff
  PortDs0UsedLine4:             0x00ffffff
  PortDs0UsedLine5:             0x00000000
  PortDs0UsedLine6:             0x00000000
  PortDs0UsedLine7:             0x00000000
  PortDs0UsedLine8:             0x00000000
  PortNumNextAvailable:         5

PXM1E_SJ.1.4.CESM.a >
```

This example shows that ports 1 through 4 have been configured on the current card and the next available port number is 5.

Step 4 To add a circuit emulation port to the card, enter the following command:

PXM1E_SJ.1.3.CESM.a > **addport** <*port_num*> <*line_num*> <*begin_slot*> <*num_slot*> <port_type>

The following **addport** command example creates an unstructured port, where all time slots are used by the port (the port range must be entered, but it is ignored).

PXM1E_SJ.1.3.CESM.a > **addport** 3 3 1 1 2

The next **addport** command example assigns half of the available T1 time slots on line 4 to port 4.

PXM1E_SJ.1.4.CESM.a > **addport** 4 4 1 12 1

Table 2-7 lists and describes the **addport** command parameters.

Table 2-7 Parameters for the addport Command

Parameter or Option	Description
port_num	Port number for the Circuit Emulation service. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1 and MPSM-8E1-CES range: 1–248
line_num	Line number to which the port definition applies. To display the lines that have been added, enter the **dsplns** command. You cannot add a port to a line unless the Status/Coding column shows that the line is enabled (Ena).

Table 2-7 Parameters for the addport Command (continued)

Parameter or Option	Description
begin_slot	This parameter selects the starting time slot for port communications over the T1 or E1 frame. Valid slot numbers are: • Structured and Unstructured CESM-8T1/B, CESM-8T1, and MPSM-8T1-CES range: 1–24 • Structured CESM-8E1 and MPSM-8E1-CES range: 2–16, 18-32 (CAS signalling—**cnfln** command. Slot 1 is reserved for framing and slot 17 is reserved for signalling) • Structured CESM-8E1 and MPSM-8E1-CES range: 2–32 (CCS signalling—**cnfln** command. Slot 1 is reserved for framing) • Unstructured CESM-8E1 and MPSM-8E1-CES range: 1–32 (Clear E1 (no signalling)—**cnfln** command) **Note** When using an unstructured port with T1 or E1 lines, the time slot range is ignored and all channels are assigned to the port. Once an unstructured port is added to a line, you cannot assign additional ports to that line.
num_slot	This parameter determines the number of consecutive time slots for this port within the T1 or E1 frame. Valid slot numbers are: • Structured and unstructured CESM-8T1/B, CESM-8T1, and MPSM-8T1-CES range: 1–24 • Structured CESM-8E1 and MPSM-8E1-CES range: 1–30 (CAS signalling—**cnfln** command) • Structured CESM-8E1 and MPSM-8E1-CES range: 1–31 (CCS signalling—**cnfln** command) • Unstructured CESM-8E1 and MPSM-8E1-CES range: 1–32 (Clear E1 (no signalling)—**cnfln** command) **Note** When using an unstructured port with T1 or E1 lines, the time slot range is ignored and all channels are assigned to the port. Once an unstructured port is added to a line, you cannot assign additional ports to that line.
port_type	Circuit emulation port type: • Structured = 1 • Unstructured = 2 • FramingOnVcDisconnect = 3 (E1 line signalling must be set to Clear E1 (no signalling) —**cnfln** command) **Note** FramingOnVcDisconnect prevents a remote-end CPE from going to loss of frame (LOF) by placing the line in remote loopback when a connection deletion or failure has occurred in the ATM network. When using a FramingOnVcDisconnect port type with T1 or E1 lines, the time slot range is ignored and all channels are assigned to the port.

Step 5 To display the configuration information for a specific port, enter the following command:

```
PPXM1E_SJ.1.4.CESM.a > dspport <port>
```

Replace the <*port*> parameter with the number assigned to the port during configuration.

The following example shows the output of a **dspport** command for port number 4:

```
PXM1E_SJ.1.4.CESM.a > dspport 4

  SlotNum:                      4
  PortLineNum:                  4
  PortNum:                      4
  PortRowStatus:                Add
  PortNumOfSlots:               12
  PortDs0ConfigBitMap(1stDS0):  0xfff(1)
  PortSpeed:                    768kbps
  PortType:                     structured
  PortState:                    Active
```

Configuring Circuit Emulation Ports

To modify a circuit emulation port configuration that has been added using the **addport** command on a CESM or MPSM card, you must first delete the port using the **delport** or the **xcnfport** command. Add the port again with the new port configuration parameters using the **addport** command. If there are any SPVC or PVC connections provisioned on the port, these must be deleted before you can change the port configuration.

Tip The **xcnfport** command may also be used to add a circuit emulation port to a line. For more information about managing ports and using these commands, refer to Chapter 5, "Managing CESM and MPSM Cards," and Chapter 6, "CESM and MPSM Command Reference".

CHAPTER 3

Provisioning SPVCs (PXM1E/PXM45) on CESM and MPSM Cards

This chapter describes how to provision circuit emulation Soft Permanent Virtual Circuits (SPVCs) on the physical ports of the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards by using the command-line interface (CLI).

These topics describe how to provision Circuit Emulation SPVCs on the CESM and MPSM cards:

- Preparing for Provisioning
- Quickstart Provisioning Procedures
- General CESM and MPSM SPVC Provisioning Procedures

Note The easiest way to add connections is by using the Cisco WAN Manager (CWM) application. For full details on how to set up a connection with CWM, refer to the *Cisco WAN Manager User's Guide, Release 15*.

This chapter explains how to provision the SPVC connection types described in Table 3-1.

Table 3-1 SPVC Connection Types Applicable to CESM and MPSM Cards

CESM and MPSM SPVC Connection Type	Description
CESM/MPSM-to-CESM/MPSM SPVCs	Soft permanent virtual circuits (SPVCs) are permanent connections that can be rerouted in the event of a link failure. A CESM/MPSM-to-CESM/MPSM SPVC establishes a connection between two CESM/MPSM ports. Such ports can be on the same card, on different cards in the same switch, or on different cards in different switches.
CESM/MPSM-to-Non-CESM/MPSM SPVCs	A CESM/MPSM-to-non-CESM/MPSM SPVC establishes a connection between a CESM or MPSM port and a port on a non-CESM/MPSM card such as a PXM1E, AXSM, or AUSM card. Such ports can be on different cards in the same switch or on different cards in different switches.

To eliminate redundancy and help experienced users complete configuration tasks efficiently, this chapter provides configuration quickstart procedures.

The first time you configure a connection type, use the applicable quickstart procedure to get an overview of the tasks to be performed. For more detailed instructions, consult the appropriate section(s) elsewhere in the document that are called out in the quickstart procedure. As you gain experience in configuring CESM and MPSM card connections, referring to a quickstart procedure may suffice for performing a particular configuration task.

Tip You can get information about most CLI commands by entering the command without parameters. Ordinarily, experienced users can configure CESM and MPSM card connections using just the quickstart procedures and the online help facilities.

Note For a detailed description of the commands used in this chapter, see Chapter 6, “CESM and MPSM Command Reference.”

Preparing for Provisioning

Before you can begin provisioning Circuit Emulation SPVCs on CESM and MPSM cards, you need to bring up the physical lines and add logical ports on the service modules. For instructions on bringing up physical lines and adding logical ports on CESM and MPSM cards, see Chapter 2, “Preparing CESM and MPSM Lines and Ports for Communications.”

Quickstart Provisioning Procedures

These quickstart tasks contain abbreviated procedures for provisioning SPVCs on CESM and MPSM cards installed in Cisco MGX 8850 (PXM1E/PXM45) and Cisco MGX 8830 Release 5 switches:

- CESM/MPSM-to-CESM/MPSM SPVC Configuration Quickstart
- CESM/MPSM-to-Non-CESM/MPSM SPVC Configuration Quickstart

These procedures provide a high level overview and serve as a procedural reminder for users already experienced in configuring MGX switches.

CESM/MPSM-to-CESM/MPSM SPVC Configuration Quickstart

To configure an SPVC between two CESM/MPSM card ports (on the same card in a switch, on different cards in the same switch, or on cards in different switches), perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	Refer to the software configuration guides for the switches between the two CESM/MPSM cards to be connected. See the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*.	Configure the trunks that link the switch(es) that host(s) the CESM or MPSM card ports. Verify PNNI connectivity between the nodes that host the SPVC endpoints.
Step 3	See the "CESM and MPSM Line Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Bring up the physical lines at each end of the SPVC you are creating.
Step 4	See the "CESM and MPSM Port Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Configure the Circuit Emulation ports at each end of the SPVC you are creating.
Step 5	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the slave side of the SPVC (if you are configuring a double-ended SPVC). See the "Configuring the Slave Side of SPVCs" section that appears later in this chapter.
Step 6	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the master side of the SPVC. **Note** In Cisco MGX Release 5, the CESM and MPSM cards cannot host the master side of a single-ended SPVC. See the "Configuring the Master Side of SPVCs" section that appears later in this chapter.

CESM/MPSM-to-Non-CESM/MPSM SPVC Configuration Quickstart

When creating an SPVC between a CESM or MPSM card and a non-CESM/MPSM card (such as a PXM1E, AXSM, or AUSM card), you must define both ends of the connection. This is just as you would for a CESM/MPSM-to-CESM/MPSM connection. You will need to refer to the documentation for the non-CESM/MPSM product for information on configuring the connection endpoint.

To configure an SPVC between a CESM/MPSM card and a non-CESM/MPSM card, perform the following steps:

	Command	Purpose
Step 1	*username* *<password>*	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	Refer to the software configuration guides for the switches between the two cards to be connected. See the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5.*	Configure the trunks that link the switch(es) that host(s) the connection endpoints. Verify PNNI connectivity between the nodes that host the SPVC endpoints.
Step 3	See the "CESM and MPSM Line Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Bring up the physical line at the CESM/MPSM card end of the SPVC you are creating.
Step 4	See the "CESM and MPSM Port Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Configure the Circuit Emulation port at the CESM/MPSM card end of the SPVC you are creating.
Step 5	**addcon** *<options>* Related commands: **dspcons** **dspcon** *<Port>* **cnfcon** *<options>*	Configure the slave side of the SPVC (if you are configuring a double-ended SPVC). If the slave side of the connection is on the CESM or MPSM card, see the "Configuring the Slave Side of SPVCs" section that appears later in this chapter. If the slave side of the connection is on a non-CESM/MPSM card, refer to the documentation for that card.
Step 6	**addcon** *<options>* Related commands: **dspcons** **dspcon** *<Port>* **cnfcon** *<options>*	Configure the master side of the SPVC. **Note** In Cisco MGX Release 5, the CESM and MPSM cards cannot host the master side of a single-ended SPVC. If the master side of the connection is on the CESM or MPSM card, see the "Configuring the Master Side of SPVCs" section that appears later in this chapter. If the master side of the connection is on a non-CESM/MPSM card, refer to the documentation for that card.

General CESM and MPSM SPVC Provisioning Procedures

These procedures and topics describe configuring SPVCs on CESM and MPSM cards:

- Configuring SPVCs on CESM and MPSM Cards
- Configuring the Slave Side of SPVCs
- Configuring the Master Side of SPVCs

Configuring SPVCs on CESM and MPSM Cards

The CESM and MPSM card configured for circuit emulation services can communicate only with cards that understand AAL1 encapsulation or are transparent to the encapsulation type, and that support CBR class of service.

CESM and MPSM SPVCs are created between one circuit emulation port and another circuit emulation port. Soft permanent virtual circuits (SPVCs) are permanent connections that can be rerouted in the event of a link failure. An SPVC, a variant of a permanent virtual circuit (PVC), can be rerouted using the Private Network-to-Network Interface (PNNI) Version 1.0 protocol.

Both PVCs and SPVCs are full-time connections. However, a PVC uses a predefined circuit path that fails altogether if that path is interrupted for any reason. Conversely, if a link along an SPVC path fails or that link cannot provide the required bandwidth to support the connection, the PNNI protocol reroutes that link to maintain the connection and to supply the necessary bandwidth.

Each SPVC has two endpoints. The master endpoint is responsible for routing and rerouting functions. The slave endpoint is responsible for responding to requests from the master during connection setup and rerouting. Both endpoints are configured on the switch or switches to which the circuit emulation CPE connects. Such endpoints can be on the same switch or on different switches.

The master/slave relationship exists for each SPVC and applies only to that SPVC connection. For example, you can have one SPVC with a master on Node A and a slave on Node B, and then create another SPVC with the master on Node B and the slave on Node A. It is good practice to distribute the master side of SPVCs among network nodes so that route processing functions can be distributed.

You can create two types of SPVCs on CESM and MPSM cards in PXM45/PXM1E platforms:

- Single-ended SPVCs.
- Double-ended SPVCs.

Single-ended SPVCs are defined at the master endpoint and do not require configuration of a slave endpoint. The primary benefit of single-ended SPVCs is that they are easier to configure. After configuration, the master endpoint configures and brings up the slave endpoint. In order for this feature to work correctly, the destination endpoint must support single-ended SPVCs.

Note In Cisco MGX Release 5, the CESM-8T1/B, CESM-8T1, CESM-8E1, and MPSM-8T1E1 cards support only the slave side of single-ended SPVCs. This means that you can configure master endpoints for single-ended SPVCs on other devices that support this feature, but you cannot create a single-ended SPVC by defining a master endpoint on a CESM or MPSM card. If both SPVC endpoints must terminate on CESM or MPSM cards, you must create a double-ended SPVC.

Double-ended SPVCs require separate configuration of the master and slave endpoints. The slave endpoint must be configured first because this step generates a slave address that must be entered during master endpoint configuration.

Configuring the Slave Side of SPVCs

If you wish to configure a double-ended SPVC connection, you must first configure the slave endpoint for the connection. If you are configuring a single-ended SPVC, you need not configure a slave endpoint.

To configure the slave side of a double-ended SPVC, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Define the slave side of the SPVC by entering the following **addcon** command:

```
PXM1E_SJ.1.4.CESM.a > addcon <port_num> [-master <MasterShip>] [-rmc <RemoteConnId>]
[-pf <PartialFill>] [-condat <ConditionalData>] [-condsig <ConditionalSigCode>]
[-cdv <CDVT>] [-cas <SignallingType>] [-clip <CellLossIntegPeriod>]
[-maxbuf <MaximumBufferSize>] [-clkmode <ClockMode>] [-contp <ControllerType>]
[-rtngprio <RoutingPriority>] [-prefrte <PreferredRouteID>] [-directrte <DirectedRoute>]
[-maxcost <MaxCost>] [-type <RestrictedType>] [-cos <connServiceType>]
```

Note

- If the **addcon** command fails and displays the “Failed to update disk” message, it could be that the PNNI controller has not been added on the PXM1E or PXM45 card. For information on adding the PNNI controller, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*.
- If the **addcon** command fails and displays the “InvalidTrafficParm: check conformance or local/remote param mismatch” message, it could be that the local connection parameters on the slave/master endpoint do not match the remote connection parameters on the master/slave endpoint. To successfully add a connection both the local and remote connection parameters must match.

Table 3-2 lists and describes the parameters for the **addcon** command. If you omit an option, a default value for that option is used for SPVC configuration. To override the default value for a given option, enter the option with a desired value.

Caution Once you create an SPVC connection, you cannot change the SPVC prefix until all SPVC connections have been deleted. The procedure for changing the SPVC prefix is described in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*.

Table 3-2 Parameters for the addcon Command

Parameter	Description
port_number	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1 and MPSM-8T1-CES range: 1–192 • CESM-8E1 and MPSM-8E1-CES range: 1–248
-master	Mastership role of connection. Select from the following options: • 1 = master • 2 = slave (default)

Table 3-2 Parameters for the addcon Command (continued)

Parameter	Description
-rmc	Remote connection ID. This option is used when defining the master end of a connection. After issuing the **addcon** command to create the slave side of a double-ended SPVC connection, use the generated slave connection ID with this option. The format is: *RemoteNsapAddress.VPI.VCI*. **Tip** You can view the address components for a slave or master connection using the **dspcon** or **dspchan** command.
-pf	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47 • Structured E1 range = 20 to 47 • Unstructured T1/E1 range = 33 to 47 **Note** For structured connections other than Basic and 1x64 Basic without AAL1 Pointer, the partial fill value should be greater than the number of DS0s assigned to port + 1.
-condat	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255
-condsig	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.
-cdv	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds

Table 3-2 Parameters for the addcon Command (continued)

Parameter	Description
-cas	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • CCS = 5 • Conditioned E1 CAS = 6 • 1x64 Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.
-clip	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.
-maxbuf	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The size can be automatically computed, or you can enter a specific size in bytes. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)*N or (CDVT+frames in 2 cells)*N} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384*N • E1 SDT maximum value = 417*N N = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)
-clkmode	Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3
-contp	The Virtual Switch Interface (VSI) controller type that manages the connection. On PXM1E, PXM45 platforms select one of the following: • 1 = PAR • 2 = PNNI (default) • 3 = MPLS

Table 3-2 Parameters for the addcon Command (continued)

Parameter	Description
-rtngprio	Routing priority for this connection. This parameter defines the rerouting derouting priority of the connection. Range is 1 to 15. Default setting is 8.
-prefrte	Preferred Route ID for this connection. The preferred route feature is applicable only to the master end of an SPVC. This option assigns a unique identifier for the preferred route to which this connection is associated. When the route ID is set to 0, the connection is not associated with any preferred routes. Range is 0 to 65,535. Default is 0.
-directrte	Directed Route option. When this option is yes, the associated preferred route is the only permissible route for the connection to take. Should the directed preferred route be unavailable, the connection is failed. When the option is no, the connection is allowed to try another alternate route should the preferred route be unavailable. • 1 = Yes • 2 = No (default)
-maxcost	Maximum end-to-end cost for the connection. The VSI controller uses the maximum cost to determine which network routes are available to the connection. The maximum cost is the calculated sum of the administrative weights (AWs) in both directions on every hop in a selected route. Range is 1 to 2,147,483,647. Default setting is 2147483647.
-type	Trunk restriction option. • 1 = Enable connection routing without trunk restrictions (Default) • 2 = Restrict the connection routing to terrestrial trunks • 3 = Restrict the connection routing to satellite trunks
-cos	Connection service type. • 21 = CBR1 • 31 = CBR2 (Used only for signalling with UNI 3.1 devices) • 32 = CBR3 (Used only for signalling with UNI 3.1 devices)

The following **addcon** command defines a CESM port as the slave side of an SPVC connection. Note the slave Local Connection ID shown at the end of the display.

```
PXM1E_SJ.1.4.CESM.a > addcon 1

Local Connection ID is : 47009181000000000001a53337700000107230100.4.35


PXM1E_SJ.1.4.CESM.a >
```

Step 3 Write down the NSAP address displayed when the **addcon** command output is completed. You will need the NSAP address to configure the master side of the SPVC connection.

Tip When you set up the master side of the SPVC, you will need to enter the slave ATM address reported by the **addcon** command. If you maintain the current session or use the session Copy command to copy the ATM address now, you can use the session Paste command to complete the **addcon** command on the switch that hosts the master side of the SPVC.

Step 4 Verify the addition of the slave side of the SPVC connection by entering the following command, which displays all configured SPVCs:

```
PXM1E_SJ.1.4.CESM.a > dspcons

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.04.035   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT
  0037 003.04.037   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT

  Number of channels:    2

  ChanNumNextAvailable:  38

PXM1E_SJ.1.4.CESM.a >
```

Step 5 If you add the master side of the SPVC at a later date, you can display the slave connection ID with the **dspcon** command as shown in the following example. The connection number is specified by entering the port number. The complete slave ID must be entered at the master endpoint in the format *ChanLocalNSAP.ChanLocalVpi.ChanLocalVci*. These values correspond to **dspcon** parameters shown in this example:

```
PXM1E_SJ.1.4.CESM.a > dspcon 1

  -------------------------------------------
  ChanNum:   35         RowStatus: Add
  AdmnState: Up         ChanState: Alarm
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO         NO         NO        YES
  -------------------------------------------
  ChanNum:                  35
  ChanRowStatus:            Add
  ConnAdminStatus:          Up
  ChanLineNum:              1
  ChanMapVpi:               4
  ChanMapVci:               35
  ChanCBRService:           struct
  ChanClockMode:            Synchronous
  ChanCAS:                  Basic
  ChanPartialFill:          47
  ChanMaxBufSize:           384 bytes
  ChanCDVT:                 1000 micro seconds
  C L I P:                  2500 milliseconds
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:             TestOff
  ChanTestState:            NotInProgress
  ChanRTDresult:            65535 ms
  ChanPortNum               1
  ChanConnType              SPVC
  ISDetType                 DetectionDisabled
  CondData                  255
  CondSignalling            15
  ExtISTrig                 DisableIdleSupression
```

```
  ISIntgnPeriod             3 seconds
  ISSignallingCode          0
  OnHookCode                1
  ChanLocalVpi:             4
  ChanLocalVci:             35
  ChanLocalNSAP:            47009181000000001a5333770000107230100
  ChanRemoteVpi:            0
  ChanRemoteVci:            0
  ChanRemoteNSAP:           NULL NSAP
  ChanMastership:           Slave
  ChanVpcFlag:              Vcc
  ChanConnServiceType:      CBR1
  ChanRoutingPriority:      8
  ChanPreferredRouteId:     0
  ChanDirectedRoute:        No
  ChanMaxCost:              2147483647
  ChanRestrictTrunkType:    No Restriction
  ChanConnPCR:              4096
  ChanConnMCR:              4096
  ChanConnPercentUtil:      100
  Channel Reroute:          False

  ChanNumNextAvailable:  36

PXM1E_SJ.1.4.CESM.a >
```

Configuring the Master Side of SPVCs

To configure the master side of an SPVC, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Tip During this procedure, you will have to enter the ATM address for the slave end of the connection. If you establish this session from the same workstation you used to create the slave connection, you can do a copy and paste sequence to avoid data entry errors.

Step 2 To define the master side of the SPVC connection, enter the following command:

```
PXM1E_SJ.1.4.CESM.a > addcon <port_num> [-master <MasterShip>] [-rmc <RemoteConnId>]
[-pf <PartialFill>] [-condat <ConditionalData>] [-condsig <ConditionalSigCode>]
[-cdv <CDVT>] [-cas <SignallingType>] [-clip <CellLossIntegPeriod>]
[-maxbuf <MaximumBufferSize>] [-clkmode <ClockMode>] [-contp <ControllerType>]
[-rtngprio <RoutingPriority>] [-prefrte <PreferredRouteID>] [-directrte <DirectedRoute>]
[-maxcost <MaxCost>] [-type <RestrictedType>] [-cos <connServiceType>]
```

Table 3-2 lists and describes the parameters for the **addcon** command. If you omit an option, a default value for that option is used for SPVC configuration. To override the default value for a given option, enter the option with a desired value.

Note

- If the **addcon** command fails and displays the “Failed to update disk” message, it could be that the PNNI controller has not been added on the PXM1E or PXM45 card. For information on adding the PNNI controller, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*.

- If the **addcon** command fails and displays the "InvalidTrafficParm: check conformance or local/remote param mismatch" message, it could be that the local connection parameters on the slave/master endpoint do not match the remote connection parameters on the master/slave endpoint. To successfully add a connection both the local and remote connection parameters must match.

The following **addcon** command defines a CESM port as the master side of a double-ended SPVC.

```
PXM1E_SJ.1.4.CESM.a > addcon 2 -master 1 -rmc
47009181000000000001a53337700000107230100.4.35

PXM1E_SJ.1.4.CESM.a >
```

Step 3 To view the master-side of the new SPVC connection in the connection list, enter the **dspcons** command:

```
PXM1E_SJ.1.4.CESM.a > dspcons

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.04.035   stru S   Synch 4096   01000 00384 02500 Up    OK
  0036 002.04.036   stru M   Synch 4096   01000 00384 02500 Up    OK
  0037 003.04.037   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT

  Number of channels:    3

  ChanNumNextAvailable:  38
```

This command displays all the connections for the CESM or MPSM card.

Step 4 To display the configuration information for a specific SPVC endpoint, enter the following command:

```
PPXM1E_SJ.1.4.CESM.a > dspcon <port>
```

Replace the *port* parameter with the port number for the connection you want to display. The port number is listed in the **dspcons** command display.

The following is sample output from the **dspcon** command for the connection created in the previous example. Notice that once the master connection is added, the **dspcon** report shows the NSAP IDs for both ends of the connection.

```
PXM1E_SJ.1.4.CESM.a > dspcon 2

  -------------------------------------------
  ChanNum:   36         RowStatus: Add
  AdmnState: Up         ChanState: Ok
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO         NO         NO         NO
  -------------------------------------------
  ChanNum:                  36
  ChanRowStatus:            Add
  ConnAdminStatus:          Up
  ChanLineNum:              2
  ChanMapVpi:               4
  ChanMapVci:               36
  ChanCBRService:           struct
  ChanClockMode:            Synchronous
  ChanCAS:                  Basic
  ChanPartialFill:          47
  ChanMaxBufSize:           384 bytes
  ChanCDVT:                 1000 micro seconds
  C L I P:                  2500 milliseconds
```

```
ChanLocalRemoteLpbkState: Disabled
ChanTestType:             TestOff
ChanTestState:            NotInProgress
ChanRTDresult:            65535 ms
ChanPortNum               2
ChanConnType              SPVC
ISDetType                 DetectionDisabled
CondData                  255
CondSignalling            15
ExtISTrig                 DisableIdleSupression
ISIntgnPeriod             3 seconds
ISSignallingCode          0
OnHookCode                1
ChanLocalVpi:             4
ChanLocalVci:             36
ChanLocalNSAP:            47009181000000000001a53337700000107230200
ChanRemoteVpi:            4
ChanRemoteVci:            35
ChanRemoteNSAP:           47009181000000000001a53337700000107230100
ChanMastership:           Master
ChanVpcFlag:              Vcc
ChanConnServiceType:      CBR1
ChanRoutingPriority:      8
ChanPreferredRouteId:     0
ChanDirectedRoute:        No
ChanMaxCost:              2147483647
ChanRestrictTrunkType:    No Restriction
ChanConnPCR:              4096
ChanConnMCR:              4096
ChanConnPercentUtil:      100
Channel Reroute:          False

ChanNumNextAvailable:  38
```

CHAPTER 4

Provisioning PVCs (PXM1) on CESM and MPSM Cards

This chapter describes how to provision Circuit Emulation Permanent Virtual Circuits (PVCs) on the physical ports of the CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards using the command-line interface (CLI).

These topics describe how to provision Circuit Emulation PVCs on CESM and MPSM cards:

- Preparing for Provisioning
- Quickstart Provisioning Procedures
- General CESM and MPSM PVC Provisioning Procedures

Note The easiest way to add connections is by using the Cisco WAN Manager (CWM) application. For full details on how to set up a connection with CWM, refer to the *Cisco WAN Manager User's Guide, Release 15*.

This chapter explains how to provision the PVC connection types described in Table 4-1.

Table 4-1 PVC Connection Types Applicable to CESM and MPSM Cards

CESM and MPSM PVC Connection Type	Description
Three-segment Feeder Connection	A Permanent Virtual Circuit (PVC) is a static connection between two ATM ports. A three-segment feeder connection establishes a multi segment PVC connection in a tiered ATM network comprised of two Cisco MGX PXM1 feeder switches and Cisco BPX 8600, Cisco MGX 8850 (PXM45), or Cisco MGX 8950 core switches. Each feeder hosts one segment of the connection, and the core switches host one segment of the connection. Feeder connections provisioned on the PXM1 platform are always master connections.
Two-segment Feeder Connection	A two-segment feeder connection establishes a multi segment PVC connection in a tiered ATM network between one Cisco MGX PXM1 feeder switch and Cisco BPX 8600, Cisco MGX 8850 (PXM45), or Cisco MGX 8950 core switches. The feeder hosts one segment of the connection, and the core switches host one segment of the connection. Feeder connections provisioned on the PXM1 platform are always master connections.

Table 4-1 PVC Connection Types Applicable to CESM and MPSM Cards (continued)

CESM and MPSM PVC Connection Type	Description
Service Module to Service Module Local Connection (DAX)	A local connection is a PVC established between two interfaces on the same Cisco MGX PXM1 switch. When the switch is in either Feeder mode or Standalone mode, a service module to service module local connection establishes a PVC between two user ports located either on the same service module or on different service modules. Local connections provisioned on the PXM1 platform are made up of master and slave end-points.
Service Module to PXM1 Local Connection	When the Cisco MGX PXM1 switch is in Standalone mode, a service module to PXM1 local connection establishes a PVC between a service module user port and a PXM1 broadband user port. Local connections provisioned on the PXM1 platform are made up of master and slave end-points.

To eliminate redundancy and help experienced users complete configuration tasks quickly and efficiently, this chapter provides configuration quickstart procedures.

The first time you configure a connection type, use the applicable quickstart procedure to get an overview of the tasks to be performed. Then, for more detailed instructions, consult the appropriate section(s) elsewhere in the document that are called out in the quickstart procedure. As you gain experience in configuring CESM card connections, referring to a quickstart procedure may suffice for performing a particular configuration task.

Tip You can get information about most CLI commands by entering the command without parameters. Ordinarily, experienced users can configure CESM card connections using just the quickstart procedures and the online help facilities.

Note For a detailed description of the commands used in this chapter, see Chapter 6, "CESM and MPSM Command Reference."

Preparing for Provisioning

Before you can begin provisioning Circuit Emulation PVCs on CESM and MPSM cards, you need to bring up the physical lines and add logical ports on the service modules. For instructions on bringing up physical lines and adding logical ports on CESM and MPSM cards, see Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."

Quickstart Provisioning Procedures

These quickstart tasks contain abbreviated procedures for provisioning PVCs on CESM and MPSM cards installed in Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1) Release 1.3 switches:

- CESM and MPSM Feeder Connection Configuration Quickstarts
- CESM and MPSM Local Connection Configuration Quickstarts

These procedures provide a high level overview and serve as a procedural reminder for users already experienced in configuring MGX switches.

CESM and MPSM Feeder Connection Configuration Quickstarts

These quickstart procedures describe how to provision three-segment and two-segment feeder connections on CESM and MPSM cards:

- Three-Segment Feeder Connection Configuration Quickstart
- Two-Segment Feeder Connection Configuration Quickstart

Three-Segment Feeder Connection Configuration Quickstart

To configure a three-segment feeder connection in a tiered network comprised of two Cisco MGX feeder switches and Cisco BPX 8600, Cisco MGX 8850 (PXM45), or Cisco MGX 8950 core switches, perform the following steps:

	Command	Purpose
Step 1	*username* *<password>*	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	See the "CESM and MPSM Line Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Bring up the physical lines at each end of the PVC you are creating.
Step 3	See the "CESM and MPSM Port Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Configure the Circuit Emulation ports at each end of the PVC you are creating.

	Command	Purpose
Step 4	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the master side of the feeder connection from the CESM/MPSM user port to the PXM1 feeder trunk at each end of the PVC you are creating. **Tip** Only the master side of the connection is required for feeder segment connections on Cisco MGX PXM1 platforms. See the "Configuring Feeder Connections on CESM and MPSM Cards" section that appears later in this chapter.
Step 5	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Add a routing connection through the ATM core network. The ATM core network may be comprised of Cisco BPX 8600, Cisco MGX 8850 (PXM45), and MGX 8950 switches. **Tip** Be sure to match the VPI and VCI values in the ATM core network connections with the values used when adding the Cisco MGX feeder connection segments. **Tip** Both slave and master connections are required when adding routing connections between AXSMs. Refer to the software configuration guides for the switches in the ATM core network for configuration instructions. See the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* or the *Cisco BPX 8600 Series Installation and Configuration, Release 9.3.30.*

Two-Segment Feeder Connection Configuration Quickstart

To configure a two-segment feeder connection in a tiered network between one Cisco MGX feeder switch and Cisco BPX 8600, Cisco MGX 8850 (PXM45), or Cisco MGX 8950 core switches, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	See the "CESM and MPSM Line Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Bring up the physical line at the CESM/MPSM card end of the PVC you are creating.
Step 3	See the "CESM and MPSM Port Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Configure the Circuit Emulation port at the CESM/MPSM end of the PVC you are creating.

	Command	Purpose
Step 4	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the master side of the feeder connection from the service module user port to the PXM1 feeder trunk at the CESM/MPSM card end of the PVC you are creating. **Tip** Only the master side of the connection is required for feeder segment connections on the Cisco MGX PXM1 platforms. See the "Configuring Feeder Connections on CESM and MPSM Cards" section that appears later in this chapter.
Step 5	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Add a routing connection through the ATM core network. The ATM core network may be comprised of Cisco BPX 8600, Cisco MGX 8850 (PXM45), and MGX 8950 switches. **Tip** Be sure to match the VPI and VCI values in the ATM core network connections with the values used when adding the Cisco MGX feeder connection segments. **Tip** Both slave and master connections are required when adding routing connections between AXSMs. Refer to the software configuration guides for the switches in the ATM core network for configuration instructions. See the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* or the *Cisco BPX 8600 Series Installation and Configuration, Release 9.3.30*.

CESM and MPSM Local Connection Configuration Quickstarts

These quickstart procedures describe how to provision local connections on CESM and MPSM cards:

- Service Module to Service Module Local Connection Quickstart
- Service Module to PXM1 Local Connection Quickstart

Service Module to Service Module Local Connection Quickstart

To configure a local connection (DAX) on a Cisco MGX Feeder or Standalone mode switch between two service module user ports on the same card or on different cards, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	See the "CESM and MPSM Line Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Bring up the physical lines at each end of the PVC you are creating.

	Command	Purpose
Step 3	See the "CESM and MPSM Port Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Configure the Circuit Emulation ports at each end of the PVC you are creating.
Step 4	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the slave side of the PVC. **Note** The slave side of the connection must be added before the master side of a local connection. See the "Configuring Service Module to Service Module Local Connections" section that appears later in this chapter.
Step 5	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the master side of the PVC. See the "Configuring Service Module to Service Module Local Connections" section that appears later in this chapter.

Service Module to PXM1 Local Connection Quickstart

To configure a local connection on a Cisco MGX Standalone mode switch between a service module user port and a PXM1 broadband user port, perform the following steps:

	Command	Purpose
Step 1	*username* <*password*>	Start a configuration session. **Note** To perform all the steps in this quickstart procedure, you must log in as a user with GROUP1 privileges or higher.
Step 2	Refer to the *Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3*, the *Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3*, or the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* for PXM1 configuration instructions.	Bring up the physical line at the PXM1 card end of the PVC you are creating. **Tip** Be sure to configure the switch as a standalone routing node with the PXM1 **cnfswfunc** command before bringing up the physical line on the PXM1. **Tip** After bringing up the physical line on the PXM1, use the PXM1 **cnfatmln** command to configure the cell header type to UNI.
Step 3	Refer to the PXM1 documentation outlined in Step 2 for configuration instructions.	Configure the logical port at the PXM1 card end of the PVC you are creating.
Step 4	See the "CESM and MPSM Line Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Bring up the physical line at the CESM/MPSM card end of the PVC you are creating.

	Command	Purpose
Step 5	See the "CESM and MPSM Port Configuration Quickstart" section in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications."	Configure the Circuit Emulation port at the CESM/MPSM end of the PVC you are creating.
Step 6	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the slave side of the PVC. **Note** The slave side of the connection must be added before the master side of a local connection. See the "Configuring Service Module to PXM1 Local Connections" section that appears later in this chapter.
Step 7	**addcon** <*options*> Related commands: **dspcons** **dspcon** <*Port*> **cnfcon** <*options*>	Configure the master side of the PVC. See the "Configuring Service Module to PXM1 Local Connections" section that appears later in this chapter.

General CESM and MPSM PVC Provisioning Procedures

This section describes the following procedures for configuring CESM and MPSM card communications:

- Configuring PVCs on CESM and MPSM Cards
- Configuring Feeder Connections on CESM and MPSM Cards
- Configuring Local Connections on CESM and MPSM Cards

Configuring PVCs on CESM and MPSM Cards

The CESM and MPSM card configured for circuit emulation services can communicate only with cards that understand AAL1 encapsulation or are transparent to the encapsulation type, and that support CBR class of service.

A Permanent Virtual Circuit (PVC) is a static connection that does not require call setup and are built between two ports on an ATM switch or between two ports on separate switches. PVCs are full-time connections that use a predefined circuit path that fails altogether if that path is interrupted for any reason. Once a PVC is established the connection remains in place until it is manually removed by network management action. The network resources that have been allocated to the PVC remain dedicated to the PVC for as long as the PVC remains provisioned.

Each PVC has two endpoints. The master endpoint is responsible for routing functions. The slave endpoint is responsible for responding to requests from the master during connection setup. The slave endpoint must be configured first because this step generates a slave address that must be entered during master endpoint configuration. Both endpoints are configured on the switch or switches to which the Frame Relay CPE connects.

Provisioning PVCs requires careful planning prior to the actual configuration of the PVC. Any Quality of Service (QoS) or traffic contract parameters that differ from the switch defaults need to be defined on a per-connection basis.

On PXM1 platforms, a PVC may originate and terminate on the same service module or on different service modules within the same switch (local switching). It may also terminate on the ATM feeder trunk (broadband port switching) for a PVC that is part of a multi segment network connection.

You can create two types of PVC connections on PXM1 platforms:

- Feeder segment connections.
- Local connections.

A feeder segment connection is one that originates on a service module and terminates on the PXM1 feeder trunk attached to an ATM core network. A local connection is one that originates on a user port and terminates on another user port. How each type of PVC is provisioned is dependent upon the configured mode the PXM1 platform (feeder mode or standalone mode) and the terminating port type (feeder trunk or user port).

The switching and PVC connection types supported by CESM and MPSM cards on the PXM1 platform are described in Table 4-2.

Table 4-2 CESM and MPSM Switching and Connection Types on the PXM1 Platform

Switching Type	PXM1 Feeder Mode	PXM1 Standalone Mode
Local Switching (DAX) (SM to SM user ports)	Local Connection[1]	Local Connection[1]
Broadband Port Switching (PXM Broadband ports to SM user ports[2])	Feeder Segment Connection[3] (PXM Broadband port configured as Feeder Trunk)	Local Connection[1] (PXM Broadband port configured as user port)

1. Local Connections originate from a user port and terminate on another user port on the same switch. User ports may be service module ports or PXM broadband ports. Local Connections consist of Slave and Master connections.
2. Broadband Port Switching is also supported between two broadband ports.
3. Feeder Segment Connections are always Master connections.

In feeder mode, the PXM1 platform interfaces as a shelf with an ATM core network that may be comprised of Cisco BPX 8600, Cisco MGX 8850 (PXM45), or Cisco MGX 8950 core switches.

To add an end-to-end connection from a local feeder to a remote feeder, a three-segment feeder connection is provisioned. A feeder segment connection from the service module to the PXM1 feeder trunk on the local feeder would be segment 1, a routed connection in the ATM core network would be segment 2, and another feeder segment connection from the service module to the PXM1 feeder trunk on the remote feeder would be segment 3.

To add an end-to-end connection from a local feeder to a routing node, a two-segment feeder connection is provisioned. A feeder segment connection from the service module to the PXM1 feeder trunk on the local feeder would be segment 1, and a routed connection in the ATM core network from the trunk card to the destination routing node's user port would be segment 2.

In standalone mode, the PXM1 platform interfaces with a third party ATM network.

To add an end-to-end connection in a standalone switch, a local connection (DAX) is provisioned between one service module user port and another service module user port on the same switch, or a local connection is provisioned from a service module user port to the PXM1 broadband user port. From that point a connection in the third party network is provisioned to a terminating device.

Local connections (DAX) from one service module user port to another service module user port are also provisioned on PXM1 platforms configured as feeders.

Configuring Feeder Connections on CESM and MPSM Cards

To configure the feeder segment portion of a three-segment or two-segment feeder connection from a CESM or MPSM user port to a PXM1 feeder trunk, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **addcon** command to define a feeder segment connection from a service module user port to the PXM1 feeder trunk:

```
M8250_SJ.1.3.CESM.a > addcon <port_num> <sig_type> <partial_fill> <cond_data>
<cond_signalling> [<controller_type> [<mastership> [<remoteConnId>]]]
```

Table 4-3 lists and describes the parameters for the **addcon** command on CESM and MPSM cards.

Note To configure CBR1, CBR2, or CBR3 connection service types, use the -cos option of the **xcnfchan** or **xcnfcon** commands.

Table 4-3 Parameters for the addcon Command on the CESM and MPSM

Parameter	Description
port_num	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
sig_type	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • CCS = 5 (PXM1E, PXM45 only) • Conditioned E1 CAS = 6 • 1x64 Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.

Table 4-3 Parameters for the addcon Command on the CESM and MPSM (continued)

Parameter	Description
partial_fill	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47 • Structured E1 range = 20 to 47 • Unstructured T1/E1 range = 33 to 47 **Note** For structured connections other than Basic and 1x64 Basic without AAL1 Pointer, the partial fill value should be greater than the number of DS0s assigned to port + 1.
cond_data	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255
cond_signalling	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.
controller_type	The Virtual Switch Interface (VSI) controller type that manages the connection. On PXM1 platforms: • 1 = PAR (PVC) (Default) • 2 = PNNI (SPVC)
mastership	Mastership role of connection. Select from the following options: • 1 = Master • 2 = Slave (default) • 3 = Unknown (MPSM-8T1/E1-CES on PXM1 only)
remoteConnID	Remote connection ID. This option is used when defining the master end of a connection. After issuing the **addcon** command to create the slave side of a double-ended connection, use the generated slave connection ID with this option. On PXM1 platforms the format can be one of the following: • *NodeName.SlotNo.PortNo.0.0* for CES end point • *NodeName.SlotNo.PortNo.VPI.VCI* for ATM end point (Use a value of 0 when *SlotNo* = PXM) **Tip** You can view the address components for a slave or master connection using the **dspcon** or **dspchan** command.

The following **addcon** command defines a service module user port as the master side of a feeder segment connection. Feeder connections are always master connections provisioned on the service module user port. When defining the remote connection ID, use a value of 0 for the PXM slot number.

```
M8250_SJ.1.3.CESM.a > addcon 8 1 0 255 15 1 1 M8250_SJ.0.1.80.80

M8250_SJ.1.3.CESM.a >
```

This example adds a master feeder segment connection to user port 8 on the current CESM card using basic signalling, fully filled ATM cells, a conditional data bit pattern of 255, a conditional signalling bit pattern of 15, a PAR controller, a VPI value of 80, and a VCI value of 80 to port 1 on the PXM1.

Step 3 Enter the **dspcons** command, which displays all configured PVCs, to verify the addition of the feeder segment connection:

```
M8250_SJ.1.3.CESM.a > dspcons

  Line     ConnId            ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     8 M8250_SJ.3.8.0         39   Add     1000   384    2500   struct Alarm

  ChanNumNextAvailable:  40

M8250_SJ.1.3.CESM.a >
```

In this example, note that the feeder segment connection is in alarm. The connection will remain in alarm until you add the routing segment of a three-segment or two-segment feeder connection in the ATM core network.

Configuring Local Connections on CESM and MPSM Cards

These procedures describe configuring Local Connections on CESM and MPSM cards:

- Configuring Service Module to Service Module Local Connections
- Configuring Service Module to PXM1 Local Connections

Configuring Service Module to Service Module Local Connections

To configure a local connection between two service module user ports located on the same card or on different cards, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **addcon** command to define the slave side of the local connection:

```
M8250_SJ.1.3.CESM.a > addcon <port_num> <sig_type> <partial_fill> <cond_data>
<cond_signalling> [<controller_type> [<mastership> [<remoteConnId>]]]
```

Table 4-3 lists and describes the parameters for the **addcon** command on CESM and MPSM cards.

The following **addcon** command defines a CESM user port as the slave side of the local connection. Note the slave Local Connection ID shown in the display.

```
M8250_SJ.1.3.CESM.a > addcon 8 1 0 255 15

Local Connection Id is : M8250_SJ.3.8.0.0

M8250_SJ.1.3.CESM.a >
```

Step 3 Write down the Local Connection ID displayed when the **addcon** command output is completed. You will need the Local Connection ID to configure the master side of the local connection.

Tip If you create the master side of the local connection from the same workstation you used to create the slave connection, you can do a copy and paste sequence to avoid data entry errors.

Step 4 Enter the **dspcons** command, which displays all configured PVCs, to verify the addition of the slave side of the local connection:

```
M8250_SJ.1.3.CESM.a > dspcons

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     8 M8250_SJ.3.8.0        39   Add     1000   384    2500   struct Alarm

  ChanNumNextAvailable:  40

M8250_SJ.1.3.CESM.a >
```

Step 5 Enter the **addcon** command to define the master side of the local connection:

```
M8250_SJ.1.3.CESM.a > addcon <port_num> <sig_type> <partial_fill> <cond_data>
<cond_signalling> [<controller_type> [<mastership> [<remoteConnId>]]]
```

Table 4-3 lists and describes the parameters for the **addcon** command on CESM and MPSM cards.

The following **addcon** command defines a CESM user port as the master side of the local connection:

```
M8250_SJ.1.3.CESM.a > addcon 7 1 0 255 15 1 1 M8250_SJ.3.8.0.0

M8250_SJ.1.3.CESM.a >
```

In this example, we added the master side of the local connection to the same CESM card that we added the slave side of the local connection. The *remoteConnID* parameter entered is the Local Connection ID that was generated when the slave side of the local connection was added.

Step 6 Enter the **dspcons** command to verify the addition of the master side of the local connection:

```
M8250_SJ.1.3.CESM.a > dspcons

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     7 M8250_SJ.3.7.0        38   Add     1000   384    2500   struct  Okay
     8 M8250_SJ.3.8.0        39   Add     1000   384    2500   struct  Okay

  ChanNumNextAvailable:  40

M8250_SJ.1.3.CESM.a >
```

Note in this example the successful addition of both the slave and master endpoints of the local connection. Both endpoints are not in alarm and dispay an *Okay* status.

Step 7 Enter the **dspcon** command to display the configuration information for a specific local connection endpoint:

```
M8250_SJ.1.3.CESM.a > dspcon <Port>
```

Replace the *port* parameter with the port number for the connection you want to display. The port number is listed in the **dspcons** command display in the *ConnID* column in the format *Nodename.Slot.Port.0*.

The following is sample output from the **dspcon** command for the master side of the local connection created in Step 5. Notice that once the master connection is added, the **dspcon** report shows the NSAP IDs for both ends of the connection.

```
M8250_SJ.1.3.CESM.a > dspcon 7

  ChanNum:                   38
  ChanRowStatus:             Add
  ChanLineNum:               7
  ChanMapVpi:                3
  ChanMapVci:                38
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
  ChanCAS:                   Basic
  ChanPartialFill:           47
  ChanMaxBufSize:            384 bytes
  ChanCDVT:                   1000 micro seconds
  C L I P:                   2500 milliseconds
  ChanLocalRemoteLpbkState:  Disabled
  ChanTestType:              TestOff
  ChanTestState:             NotInProgress
  ChanRTDresult:             65535 ms
  ChanPortNum                7
  ChanConnType               PVC
  ISDetType                  DetectionDisabled
  CondData                   255
  CondSignalling             15
  ExtISTrig                  DisableIdleSupression
  ISIntgnPeriod              3 seconds
  ISSignallingCode           0
  OnHookCode                 1
  ChanLocalVpi:              0
  ChanLocalVci:              0
  ChanLocalNSAP:             4d383235305f534a000000000000000003000700
  ChanRemoteVpi:             0
  ChanRemoteVci:             0
  ChanRemoteNSAP:            4d383235305f534a000000000000000003000800
  ChanMastership:            Master
  ChanVpcFlag:               Vcc
  ChanConnServiceType:       CBR
  ChanRoutingPriority:       1
  ChanMaxCost:               2147483647
  ChanRestrictTrunkType:     No Restriction
  ChanConnPCR:               4096
  ChanConnMCR:               4096
  ChanConnPercentUtil:       100

  ChanNumNextAvailable:  40

M8250_SJ.1.3.CESM.a >
```

Configuring Service Module to PXM1 Local Connections

To configure a local connection between a service module user port and the PXM1 broadband user port, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **addcon** command to define the slave side of the local connection on the service module:

```
M8230_CH.1.6.CESM.a >addcon <port_num> <sig_type> <partial_fill> <cond_data>
<cond_signalling> [<controller_type> [<mastership> [<remoteConnId>]]]
```

Table 4-3 lists and describes the parameters for the **addcon** command on CESM and MPSM cards.

The following **addcon** command defines a CESM user port as the slave side of the local connection. Note the slave Local Connection ID shown in the display.

```
M8230_CH.1.6.CESM.a > addcon 5 1 0 255 15

Local Connection Id is : M8230_CH.6.5.0.0

M8230_CH.1.6.CESM.a >
```

There are no restrictions on which cards can host the slave or master endpoints of a local connection. In this step we have chosen to add the slave side of the local connection to the service module user port. We could also add the slave side of the local connection to the PXM1 broadband user port, and then add the master side of the local connection to the service module user port to complete the connection.

Step 3 Write down the Local Connection ID displayed when the **addcon** command output is completed. You will need the Local Connection ID to configure the master side of the local connection.

Tip If you create the master side of the local connection from the same workstation you used to create the slave connection, you can do a copy and paste sequence to avoid data entry errors.

Step 4 Enter the **dspcons** command, which displays all configured PVCs, to verify the addition of the slave side of the local connection:

```
M8230_CH.1.6.CESM.a > dspcons

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     5 M8230_CH.6.5.0        36   Add     1000   480    2500   struct Alarm

  ChanNumNextAvailable:  37

M8230_CH.1.6.CESM.a >
```

Step 5 Enter the **addcon** command to define the master side of the local connection on the PXM1:

```
M8230_CH.1.1.PXM.a > addcon <port_no> <conn_type> <local_VPI> <local_VCI> <service>
    [<CAC>] [<mastership>] [<remoteConnId>]
```

Table 4-4 lists and describes the parameters for the **addcon** command on the PXM1 card.

Note For detailed instructions on PXM1 configuration, refer to the *Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3*, the *Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3*, or the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Table 4-4 Parameters for the addcon Command on the PXM1

Parameter	Description
port_no	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column. Port range is from 1 to 32.
conn_type	Connection Type. • 1 = Virtual Path Connection (VPC) • 2 = Virtual Channel Connection (VCC)
local_VPI	Local Virtual Path Identifier (VPI). Range is 0 to 4095.
local_VCI	Local Virtual Channel Identifier (VCI). Range is 0 to 65535.
service	Connection Service Type. • 1 = CBR • 2 = VBR • 3 = ABR • 4 = UBR • 5 = VBRrt
CAC	Connection Admission Control. • 1 = Enable • 2 = Disable (default)
mastership	Mastership role of connection. • 1 = Master • 2 = Slave (default)
remoteConnID	Remote connection ID. This option is used when defining the master end of a connection. After issuing the **addcon** command to create the slave side of a double-ended connection, use the generated slave connection ID with this option. Format is *NodeName.SlotNo.PortNo.VPI.VCI*

The following **addcon** command defines a PXM1 broadband user port as the master side of a local connection:

```
M8230_CH.1.1.PXM.a > addcon 2 2 50 50 1 2 1 M8230_CH.6.5.0.0

    Connection ID: M8230_CH.0.2.50.50

M8230_CH.1.1.PXM.a >
```

This example adds the master side of the local connection to PXM1 broadband user port 2. The *remoteConnID* parameter is the Local Connection ID that was generated when the slave side of the local connection was added. After adding the master side of the local connection, a master side Connection ID is generated.

Step 6 Enter the PXM1 **dspcons** command, which displays all configured PVCs, to verify the addition of the master side of the local connection:

```
M8230_CH.1.1.PXM.a > dspcons
This End        Node Name       Other End       Status

1.2.50.50       M8230_CH        6.5.0.0         OK
6.5.0.0         M8230_CH        1.2.50.50       OK

M8230_CH.1.1.PXM.a >
```

Note in this example the successful addition of both the slave and master endpoints of the local connection added to the CESM and PXM1 cards. Both endpoints are not in alarm and dispay an *OK* status.

Step 7 Enter the **dspcon** command to display the configuration information for a specific local connection endpoint.

On the service module end of the local connection, enter the **dspcon** command in the following format:

```
M8250_CH.1.6.CESM.a > dspcon <Port>
```

Replace the *port* parameter with the port number for the connection you want to display. The port number is listed in the **dspcons** command display in the *ConnID* column in the format *Nodename.Slot.Port.0.*

On the PXM1 end of the local connection, enter the **dspcon** command in the following format:

```
M8230_CH.1.1.PXM.a > dspcon <SlotNo.PortNo.VPI.VCI>
```

Replace the *SlotNo.PortNo.VPI.VCI* parameter with the Connection ID for the connection you want to display. The Connection ID is listed in the PXM1 **dspcons** command display in the *This End* or *Other End* columns in the format *SlotNo.PortNo.VPI.VCI* .

The following is sample output from the PXM1 **dspcon** command for the master side of the local connection created in Step 5:

```
M8230_CH.1.1.PXM.a > dspcon 1.2.50.50

    Conn Par Addr       : 1.2.50.50
    Vc Index            : 805306371
    Conn SM Addr        : Ept:      vpi = 50 vci = 50 vpc = 0
    ifNum = 0x2        conNum = 0x7ffc     glcn = 0x8009     lcn = 32
    qosFwd = 1028 qosBwd = 1028 pcrFwd = 50 pcrBwd = 50 mcrFwd = 50 mcrBwd = 50

    Remote Node Name    : M8230_CH
    Remote Conn PAR Addr: 6.5.0.0
    Remote Conn SM  Addr: Ept:      vpi = 0 vci = 0 vpc = 0
    ifNum = 0x60005    conNum = 0x7ffc     glcn = 0x2c9      lcn = 36
    qosFwd = 1028 qosBwd = 1028 pcrFwd = 50 pcrBwd = 50 mcrFwd = 50 mcrBwd = 50

    OE VC Index         : 805306371
    Oper Status         : OK
    Conn Failure Reason :
    RRT Failure Reason  :
    Admin Status        : UP
    Route               :

M8230_CH.1.1.PXM.a >
```

CHAPTER 5

Managing CESM and MPSM Cards

This chapter provides procedures for managing CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, and MPSM-8E1-CES cards after the initial card setup and provisioning.

> **Note** Initial card setup is described in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation. The provisioning of CESM and MPSM cards is described in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications," Chapter 3, "Provisioning SPVCs (PXM1E/PXM45) on CESM and MPSM Cards," and Chapter 4, "Provisioning PVCs (PXM1) on CESM and MPSM Cards."

This chapter describes the following CESM and MPSM management procedures:

Managing CLI Sessions

Basic session initialization and management are described in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Table 5-1 lists and describes the session management commands supported on the CESM and MPSM cards. For more information on these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-1 Session Management Commands

Command	Purpose
? **Help**	Enter this command to display the available commands.
clear **clrscrn** **cls**	Enter this command to clear the session screen.
myid	Enter this command to display the user ID that was used to start the current session.
setcmdc	Enter this command to enable or disable the command completion feature, which automatically completes an incomplete command if the command portion entered uniquely identifies a supported command. This command is supported on the MPSM-8T1-CES and MPSM-8E1-CES only.
setpagemode	Enter this command to enable or disable the page feature, which breaks command displays into pages for easier viewing.

Managing Cards

Basic card initialization and configuration are described in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

The following sections provide procedures for doing the following:

- Displaying General Card Information
- Displaying Software Version and Status Information
- Displaying CESM Card Features

Note This section provides procedures for some of the most common card management commands. For a complete list of card management commands, refer to Table 6-2 in Chapter 6, "CESM and MPSM Command Reference."

Displaying General Card Information

To display general information about a CESM or MPSM card use the **dspcd** command.

The following example shows general information about a CESM-8T1/B card:

```
M8850_SF.1.26.CESM.a > dspcd


  ModuleSlotNumber:          26
  FunctionModuleState:       Active
```

```
FunctionModuleType:         CESM-8T1/B
FunctionModuleSerialNum:    B24356
FunctionModuleHWRev:        aa
FunctionModuleFWRev:        021.000.001.193-A
FunctionModuleResetReason:  Reset by PXM
LineModuleType:             LM-RJ48-8T1
LineModuleState:            Present
mibVersionNumber:           82
configChangeTypeBitMap:     CardCnfChng, LineCnfChng
cardIntegratedAlarm:        Clear

     Front Card Info
Hardware Revision      :    AA
Card Type              :    787
Serial Number          :    B24356
Fab Number             :    28-4253-01

     Back Card Info
Hardware Revision      :    AA
Card Type              :    22
Serial Number          :    648395
Fab Number             :    28-2011-01
```

Note Note that the **dspcd** command displays information on card alarms.

The following example shows general information about an MPSM-8T1-CES card:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspcd


  ModuleSlotNumber:          28
  FunctionModuleState:       Active
  FunctionModuleType:        MPSM-8T1-CES
  FunctionModuleSerialNum:   SAG07208RRA
  FunctionModuleHWRev:       02
  FunctionModuleFWRev:       030.000.001.077-A
  FunctionModuleResetReason: Reset by PXM
  LineModuleType:            ?
  LineModuleState:           Not Present
  mibVersionNumber:          100
  configChangeTypeBitMap:    No changes
  cardIntegratedAlarm:       Major
  cardMajorAlarmBitMap:      Line Alarm

      Front Card Info

  PCB PART NO-(800 LEVEL):   800-22480-04
  PCB PART_NO-(73 LEVEL):    73-8466-04
  PCB REVISION (800 LEVEL):
  PCB SERIAL NO:             SAG07208RRA
  CLEI CODE:                 0
  MANUFACTURING ENG:         0x0
  RMA TEST HISTORY:          0x0

      Back Card Info

  PCB PART NO-(800 LEVEL):   ??
  PCB PART NO-(73 LEVEL):    ??
  PCB REVISION (800 LEVEL):  ??
  FAB PART NO-(28 LEVEL):    ??
  PCB SERIAL NO:             ??
  CLEI CODE:                 ??
```

```
  MANUFACTURING ENG:         ??
  RMA HISTORY:               ??

M8850_SF.1.28.MPSM8T1.CES.a >
```

To determine whether a card is a CESM-8T1/B, CESM-8T1, CESM-8E1, MPSM-8T1-CES, or MPSM-8E1-CES card, use the **dspcd** command on the CESM or MPSM card, or use the **dspcds** command on the PXM1, PXM1E, or PXM45 controller card.

Displaying Software Version and Status Information

To display information about the software running on a CESM or MPSM card, use the **chkflash** and **version** commands.

The following example shows the status of the boot software on a CESM card:

```
PXM1E_SJ.1.20.CESM.a > chkflash
Program length = 264592
Calculated checksum = a9f614f6 stored checksum = a9f614f6
Flash checksum passed

PXM1E_SJ.1.20.CESM.a >
```

The following example shows the status of the boot software on an MPSM card:

```
M8850_SF.1.28.MPSM8T1.CES.a > chkflash

[chkflashfn]: Program length = 1477096
Calculated checksum = 0x5a73afb6 stored checksum = 0x5a73afb6

Flash checksum passed

M8850_SF.1.28.MPSM8T1.CES.a >
```

The following example displays the software versions running on a CESM card:

```
PXM1E_SJ.1.20.CESM.a > version
***** Cisco Systems CESM-8T1E1 Card *****
    Firmware Version    = 021.000.001.193-A
    Backup Boot version = CE8_BT_1.0.02
    ASCFRSM Xilinx file = cbslave.h
VxWorks (for CISCO) version 5.3.1.
Kernel: WIND version 2.5.
Made on Feb 11 2003, 03:07:58.
Boot line:
Boot from PROM

PXM1E_SJ.1.20.CESM.a >
```

The following example displays the software versions running on an MPSM card:

```
M8850_SF.1.28.MPSM8T1.CES.a > version
***** Cisco System MPSM-8-T1E1 Card *****
    Firmware Version            = 030.000.001.077-A
    Backup Boot Version         = 030.000.001.077-A
VxWorks (for Broadcom BCM1125) version VxWorks5.4.2.
Kernel: WIND version 2.5.
Made on Dec  5 2003, 12:19:50.
Boot line:

M8850_SF.1.28.MPSM8T1.CES.a >
```

Displaying CESM Card Features

The CESM-8T1/B, CESM-8T1, and CESM-8E1 cards are available in channelized (structured) and nonchannelized (unstructured) versions. To determine if a CESM-8T1/B, CESM-8T1, or CESM-8E1 is a nonchannelized or channelized version, enter the **dspfeature** command as shown in the following example:

```
PXM1E_SJ.1.20.CESM.a > dspfeature

  Channelized:  On

PXM1E_SJ.1.20.CESM.a >
```

The example above is for a channelized CESM-8T1/B card.

Managing MPSM Feature Licenses

Some features on the MPSM-8T1E1 card are enabled by the use of feature licenses. These feature licenses reside on the PXM processor in a license pool until needed by the MPSM card.

The following sections provide procedures for doing the following:

- Displaying MPSM Feature Licenses
- Moving MPSM Feature Licenses
- Allocating MPSM Feature Licenses
- Managing MPSM Feature License Alarms

Note To install spare feature licenses into the PXM license pool, transfer feature licenses from one switch to another switch, and rekey feature licenses, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* and the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*.

Displaying MPSM Feature Licenses

Use the **dspliccd** command to display the details of feature licenses that are needed, that have been allocated from the PXM license pool, or that have been programmed into the NVRAM of the MPSM-8T1E1 card.

Because the MPSM-8T1E1 card configured for Circuit Emulation services does not require any feature licenses, the **dspliccd** command is used exclusively to view feature licenses that have been programmed into the NVRAM of the MPSM-8T1E1 card.

Note The rate control feature license is the only feature license available for the MPSM-8T1E1 card. This feature license is used by the MPSM-8T1E1 card when configured for Frame Relay services.

In the following example, the **displiccd** command shows one rate control feature license programmed into the NVRAM on the MPSM-8T1-CES card:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspliccd

Card License Alarm:              None
Service Module Type:             MPSM8T1E1
Service Module Serial Number:    SAG07208RRA
Provisioning (addcon) Allowed:   YES
=========================================================
Needed License Type               Needed Licenses
-------------------               ---------------

=========================================================
Allocated License Type            Allocated licenses
----------------------            ------------------

=========================================================
Programmed  License Type          Programmed licenses
------------------------          -------------------
RateControl                       1

=========================================================
Programmed License Registered:   NO
License registration node:       NONE
License registration chassis:    NONE
=========================================================

M8850_SF.1.28.MPSM8T1.CES.a >
```

If a feature license is moved to the PXM license pool, then the *Programmed License Registered* field in the output of the **dspliccd** command will state *YES*. Notice in this example that the rate control license programmed into the NVRAM on the MPSM-8T1-CES card has not been moved to the PXM license pool.

Moving MPSM Feature Licenses

If a feature license is purchased at the same time as the MPSM card, that license can be programmed into the NVRAM on the MPSM card. When a feature license is programmed on an MPSM card, the license is unavailable to that MPSM card and all other cards on the switch. To enable use of the programmed feature license, it must be moved from the MPSM card and installed in the switch license pool, which is a database on the PXM processor card.

The **movelic** command is used to move feature licenses programmed on MPSM cards to the switch license pool on the PXM processor card.

To move feature licenses, perform the following steps:

Step 1 Enter the **dspliccd** command to view the feature licenses that have been programmed on the MPSM card:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspliccd

Card License Alarm:              None
Service Module Type:             MPSM8T1E1
Service Module Serial Number:    SAG07208RRA
Provisioning (addcon) Allowed:   YES
```

```
==========================================================
Needed License Type               Needed Licenses
-------------------               ---------------

==========================================================
Allocated License Type            Allocated licenses
----------------------            ------------------

==========================================================
Programmed  License Type          Programmed licenses
------------------------          -------------------
RateControl                       1

==========================================================
Programmed License Registered:   NO
License registration node:       NONE
License registration chassis:    NONE
==========================================================

M8850_SF.1.28.MPSM8T1.CES.a >
```

In this example, the output of the **dspliccd** command shows that one Rate Control feature license has been programmed into the NVRAM on the MPSM card.

Step 2 Enter the **movelic** command to move the feature licenses programmed on the MPSM card to the switch license pool on the PXM processor card:

```
M8850_SF.1.28.MPSM8T1.CES.a > movelic
------------------------------------------------
Programmed License Type          #Programmed
-----------------------          -----------
RateControl                       1

Do you want to proceed (Yes/No)? y

Card Licenses have been moved to license pool.

M8850_SF.1.28.MPSM8T1.CES.a >
```

After the feature licenses are moved from the MPSM card and installed in the switch license pool on the PXM processor card, the feature licenses are available for use by the MPSM cards installed in that switch

Step 3 When feature licenses are moved from the NVRAM on the MPSM card to the PXM license pool, the process is also referred to as *registration* of licenses with the switch.

Enter the **dspliccd** command to verify feature license registration into the switch license pool:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspliccd

Card License Alarm:              None
Service Module Type:             MPSM8T1E1
Service Module Serial Number:    SAG07208RRA
Provisioning (addcon) Allowed:   YES
==========================================================
Needed License Type               Needed Licenses
-------------------               ---------------

==========================================================
Allocated License Type            Allocated licenses
----------------------            ------------------

==========================================================
```

```
Programmed  License Type          Programmed licenses
------------------------          -------------------
RateControl                       1

=========================================================
Programmed License Registered:   YES
License registration node:       M8850_SF
License registration chassis:    SCA062300GF
=========================================================

M8850_SF.1.28.MPSM8T1.CES.a >
```

This example shows that the Rate Control feature license has been registered, the name of the switch where the license has been registered, and the chassis serial number of the switch where the feature license has been registered.

Step 4 Enter the **dsplics** command on the PXM processor card to view the MPSM feature licenses installed in the PXM license pool:

```
M8850_SF.7.PXM.a > dsplics
M8850_SF                         System Rev: 05.00   Jul. 02, 2004 01:51:22 GMT
MGX8850                                              Node Alarm: MINOR
Licensed           License      Licenses   Licenses   Licenses
Card Type          Type         Installed  Allocated  Available
-----------------  -----------  ---------  ---------  ---------
MPSM-8T1E1         RateControl  1          0          1

M8850_SF.7.PXM.a >
```

In this example, one Rate Control feature license has been successfully moved from the MPSM-8T1E1 card into the PXM license pool.

Allocating MPSM Feature Licenses

To allocate a feature license to an MPSM card, configure the card to use the licensed feature.

For example, to assign a channelized feature license to an MPSM card, enter the **addport** command and use the channelization parameters to channelize the line. If the license pool on the PXM has an available license for that feature and MPSM card type, that license is automatically assigned to the card and the feature is successfully configured.

If you try to configure an MPSM card to use a feature for which no licenses are available, the configuration attempt will fail. Once a license is assigned to an MPSM card, it is no longer available for use by other MPSM cards until it returns to the license pool.

Note

- Because the MPSM-8T1E1 card configured for Circuit Emulation services does not require any feature licenses, no feature licenses are allocated from the PXM license pool for any features or services configured on the MPSM-8T1-CES or MPSM-8E1-CES cards.
- The rate control feature license is the only feature license available for the MPSM-8T1E1 card. This feature license is used by the MPSM-8T1E1 card when configured for Frame Relay services.

Managing MPSM Feature License Alarms

MPSM feature license alarms can occur at the node level or the slot level of the switch. The following sections describe these alarms:

- Node License Alarm
- Slot License Alarms

Note Because the MPSM-8T1E1 card configured for Circuit Emulation services does not require any feature licenses, no feature licenses alarms will be raised on the MPSM-8T1-CES or MPSM-8E1-CES cards. The following sections are useful in alerting the user to MPSM feature license alarm conditions that may occur for MPSM-8T1E1 cards configured for Frame Relay services.

Node License Alarm

Node license alarms can happen under the following conditions:

- A switch configuration that was saved before licenses were added or transferred to and from the PXM license pool has been restored. Any mismatch between the actual license count and the restored license count generates a minor license alarm. To prevent this type of alarm, always save the switch configuration after you move, transfer, or add licenses.
- The switch configuration is restored on a different node, or the Cisco MGX chassis is replaced with another chassis. Because licenses are authorized for a specific backplane serial number, such conditions will cause a mismatch between the physical backplane serial number and serial number recorded in the database.

When a node license alarm is raised, all cards that are using feature licenses go into the slot license alarm state. If no licenses are in use by the cards, no slot license alarms will be raised.

On PXM45 and PXM1E platforms, use the PXM **dspndalms** command to troubleshoot the node license alarm. On PXM1 platforms, use the PXM **dspcd** command to troubleshoot the node license alarm.

Node license alarms are cleared by validating licenses in the license pool. This is done by applying the special Rekey feature license to the node using the **cnflic** command. When the pool licenses are validated, any existing slot license alarms are also cleared and normal operation is restored. For the procedure to rekey feature licenses, see the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* and the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*.

Note If the switch is in node license alarm, you must rekey the PXM license pool *before* proceeding with any other license management tasks.

Slot License Alarms

Slot license alarms are raised under the following conditions:

- When a node license alarm is raised, all cards that are using feature licenses go into the slot license alarm state. Slot license alarms raised under this condition are cleared by rekeying the PXM license pool.

- The slot in alarm has acquired or oversubscribed one or more licenses while these licenses were not available in the license pool. For example, on the PXM1 platform this situation might occur when a card is configured to use licenses, the card slot configuration is removed with the PXM **clrsmcnf** command, the licenses are assigned to another card, and then the card slot configuration is restored. Slot license alarms raised under this condition are cleared by adding the required number of licenses to the PXM license pool or by releasing corresponding licenses from other slots so that they become available to the slot in alarm. If slots in alarm have redundancy, you must add licenses to cover both the primary and secondary slots to clear the alarms.

On the PXM card, use the **dsplicalms** and **dspliccd** <*slot*> commands to troubleshoot slot license alarms. On the MPSM card, use the **dspcd** and **dspliccd** commands to troubleshoot slot license alarms.

For the procedures to rekey feature licenses, recover feature licenses, and add feature licenses to the PXM license pool see the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* and the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.10*.

Note If the switch is in node license alarm, you must rekey the PXM license pool *before* proceeding with any other license management tasks.

When the switch is in slot license alarm, you have a grace period of 5 days (120 hours) to resolve the alarm(s). During the first 4 days (96 hours), traps are sent every 24 hours. For the final 24 hours of the grace period, traps are sent every hour of operation. If the alarms do not get cleared, the following actions are taken:

- An event is logged indicating the expiration of the grace period for a given slot needing license(s).
- A trap is sent hourly indicating the expiration of the grace period.
- The **addcon** command is blocked on the slot in license alarm until the license alarms are cleared.

When the PXM license pool has been rekeyed or licenses have been added to the PXM license pool, provisioning is restored and the switch exits the license alarm state.

Managing Lines

Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications," describes how to bring up (add) and modify CESM and MPSM card lines. The following sections provide procedures for doing the following:

- Displaying a List of Lines
- Displaying the Configuration for a Single Line
- Bringing Down a Line
- Managing Line Alarms

Note This section provides procedures for some of the most common line management commands. For a complete list of line management commands, refer to Table 6-3 in Chapter 6, "CESM and MPSM Command Reference."

Displaying a List of Lines

To display a list of lines on the CESM or MPSM card, enter the **dsplns** command as follows:

```
PXM1E_SJ.1.20.CESM.a > dsplns

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  20.1  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  20.2  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  20.3  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  20.4  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  Yes   No
  20.5  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  20.6  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  20.7  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  20.8  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim

  LineNumOfValidEntries: 8

PXM1E_SJ.1.20.CESM.a >
```

The line number is found in the *Line* column in the format *Slot.Line*.

Displaying the Configuration for a Single Line

To display the configuration of a single line on the CESM or MPSM card, enter the **dspln** command as follows:

```
PXM1E_SJ.1.20.CESM.a > dspln <line>
```

Enter the line number with the command. You can view the available line numbers in the **dsplns** display.

The following example shows the information you can display with the **dspln** command on the CESM card:

```
PXM1E_SJ.1.20.CESM.a > dspln 8

  LineNum:                   8
  LineConnectorType:         RJ-48
  LineEnable:                Modify
  LineType:                  dsx1ESF
  LineCoding:                dsx1B8ZS
  LineLength:                0-131 ft
  LineXmtClockSource:        LocalTiming
  LineLoopbackCommand:       LocalLineLoop
  LineSendCode:              NoCode
  LineUsedTimeslotsBitMap:   0x0
  LineLoopbackCodeDetection: codeDetectDisabled

  LineNumOfValidEntries: 8

PXM1E_SJ.1.20.CESM.a >
```

The following example shows the information you can display with the **dspln** command on the MPSM card:

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspln 1

  LineNum:                    1
  LineConnectorType:          RJ-48
  LineType:                   dsx1ESF
  LineEnable:                 Enabled
  LineCoding:                 dsx1B8ZS
  LineLength:                 0-131 ft
  LineXmtClockSource:         LocalTiming
  LineLoopbackCommand:        NoLoop
  LineSendCode:               NoCode
  LineUsedTimeslotsBitMap:    0x0
  LineLoopbackCodeDetection:  codeDetectDisabled
  LineBERTEnable:             Disable

  LineNumOfValidEntries: 8

M8250_SJ.1.6.MPSM8T1.CES.a >
```

Bringing Down a Line

When a line is not working properly, it generates a line alarm. If you want to suppress the alarm and you do not have time to correct the problem, you can bring down the line. Bringing down the line takes it out of service, so no alarms are generated.

Tip You can reduce the level of an alarm on a failed line from major to minor by using the **addlnloop** command to place the line in local loopback mode. This does not completely eliminate the alarm, but it does reduce the severity and allow you to preserve the configured resources for that line.

To bring down a line, use the following procedure.

Step 1 Delete all connections that are associated with the line (**dspcons** and **delcon** commands).

Tip Connections are associated with ports (**dspcons**), and ports are associated with lines (**dspports**). To determine which connections use a line, first determine which ports are configured for that line.

Step 2 Delete all ports that are associated with the line (**delport** command).

Tip When a port is deleted, the resource partition associated with that port is also deleted at the same time. Therefore, it is not necessary to delete the port resource partition prior to deleting the port.

Step 3 Enter the **delln** command as follows:

```
PXM1E_SJ.1.20.CESM.a > delln <line>
```

Enter the line number with the command. You can view the available line numbers in the **dsplns** display.

The following example shows how to use the **delln** command:

```
PXM1E_SJ.1.20.CESM.a > delln 8

PXM1E_SJ.1.20.CESM.a >
```

Managing Line Alarms

CESM and MPSM cards generate line alarms when problems occur. When a loss of signal (LOS) alarm is detected, a CESM or MPSM card notifies the connected CPE in the upstream direction after an integration period. The CESM or MPSM card then continues to emit cells at the nominal rate but sets the ATM cell payload with an appropriate data pattern as specified by the ATM Forum CES-IS V2.0 specification. Also, an OAM cell with RDI code goes to the far end to indicate out-of-service. The significance of the different types of alarms appears in Table 5-2.

Table 5-2 CESM and MPSM Line Errors and Alarms

Error	Alarm Type	Transmit Downstream	Transmit Upstream	Comments
Receive LOS	Red	AIS	RAI	—
Receive LOF	Red	AIS	RAI	—
Receive AIS	Blue (AIS)	AIS (link)	FERF OAM cells	AIS—done over the T1/E1 link by sending the AIS data over the T1/E1 link
Receive RAI	Yellow	RAI	—	—
ATM Link Failure (RX)	Red (AIS)	AIS—OAM cells	None	Data cells According to ATM-Forum CES-IS V 2.0

Tip For more information on T1 and E1 signalling procedures and alarms, refer to the ATM Forum *Circuit Emulation Service Interoperability Specification* (AF-SAA-0032.00) or the *Bellcore TR-NWT-000170*.

Use the commands in table Table 5-3 to display, clear, and configure CESM and MPSM line alarms.

Table 5-3 CESM and MPSM Line Alarm Commands

Command	Purpose
dspalm	Enter this command to display the active alarms associated with a specific line.
dspalms	Enter this command to display a summary of the active line alarms.
dspalmcnf	Enter this command to display the alarm configuration and thresholds for a specific line.
dspalmcnt	Enter this command to display the alarm counters for a specific line.

Table 5-3 CESM and MPSM Line Alarm Commands (continued)

Command	Purpose
clralm	Enter this command to clear any active alarms on a specific line (Alarms will not clear if the cause for the alarm is still present).
clralms	Enter this command to clear active alarms on all lines (Alarms will not clear if the cause for the alarm is still present).
clralmcnt	Enter this command to clear the alarm counters for a specific line.
clralmcnts	Enter this command to clear the alarm counters for all lines.
xcnfalm	Enter this command to modify alarm counters, thresholds, and statistics for a specific line.
xcnfalmcnt	Enter this command to modify threshold values of statistical alarm counters for a specific line.

Table 5-4 lists other CESM and MPSM card alarms and shows how these alarms affect the transmit and receive channels for a line.

Table 5-4 CESM and MPSM Card Alarms

Type of Alarm	Channel RCV ATM State	Channel XMT ATM State	Action
Port Alarm	—	Sending AIS OAM	Generate OAM-AIS towards the network
Abit (from PXM)	Normal	Normal	—
Underrun	Normal	Normal	Conditioning towards line
Overrun	Normal	Normal	Conditioning towards line

Note When the line is in alarm, the line alarm trap is sent. There are no separate traps sent for the ports or for the connections that go into alarm due to the line alarm. Similarly when the port is in alarm, the port alarm trap is sent and no separate traps are sent for the connections that go into alarm due to the port alarm.

Managing Ports

Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications," describes how to add logical ports to the lines on CESM and MPSM cards. The following sections provide procedures for doing the following:

- Displaying a List of Ports
- Displaying the Status of a Single Port
- Changing a Port Configuration
- Deleting Ports

Displaying a List of Ports

To display a list of ports provisioned on the CESM or MPSM card, enter the **dspports** command as follows:

```
PXM1E_SJ.1.4.CESM.a > dspports

  Port     Ena/Speed   Type
  ------   --- ------ --------
  4.1.1    Add/1536k structur
  4.2.2    Add/1536k structur
  4.3.3    Add/1536k structur
  4.4.4    Add/1536k structur

  Number of ports:              4

  PortDs0UsedLine1:             0x00ffffff
  PortDs0UsedLine2:             0x00ffffff
  PortDs0UsedLine3:             0x00ffffff
  PortDs0UsedLine4:             0x00ffffff
  PortDs0UsedLine5:             0x00000000
  PortDs0UsedLine6:             0x00000000
  PortDs0UsedLine7:             0x00000000
  PortDs0UsedLine8:             0x00000000
  PortNumNextAvailable:         5

PXM1E_SJ.1.4.CESM.a >
```

The port number is found in the *Port* column in the format *Slot.Line.Port*. For more information on a single port, use the **dspport** command.

Displaying the Status of a Single Port

To display the configuration and status of a single provisioned port on the CESM or MPSM card, enter the **dspport** command as follows:

```
PXM1E_SJ.1.4.CESM.a > dspport <port>
```

Enter the port number with the command. You can view the provisioned port numbers in the **dspports** display.

The following example shows the **dspport** report for a CESM-8T1/B card.

```
PXM1E_SJ.1.4.CESM.a > dspport 1

  SlotNum:                      4
  PortLineNum:                  1
  PortNum:                      1
  PortRowStatus:                Add
  PortNumOfSlots:               24
  PortDs0ConfigBitMap(1stDS0):  0xffffff(1)
  PortSpeed:                    1536kbps
  PortType:                     structured
  PortState:                    Active


PXM1E_SJ.1.4.CESM.a >
```

Changing a Port Configuration

To modify a circuit emulation port configuration that has been added using the **addport** command on a CESM or MPSM card, you must first delete the port using the **delport** command. Add the port again with the new port configuration parameters using the **addport** command.

Tip If there are any SPVC or PVC connections provisioned on the port, these must be deleted before you can change the port configuration.

Deleting Ports

To delete a Circuit Emulation port on a CESM or MPSM card, use the following procedure.

Step 1 Delete all connections that are associated with the port (**dspcons** and **delcon** commands).

Step 2 Enter the **delport** command as follows:

```
PXM1E_SJ.1.20.CESM.a > delport <port>
```

Replace the *port* parameter with the port number you want to delete. Port numbers are listed in the **dspports** command display.

Tip When a port is deleted, the resource partition associated with that port is also deleted at the same time. Therefore, it is not necessary to delete the port resource partition prior to deleting the port.

The following example shows how to use the **delport** command:

```
PXM1E_SJ.1.20.CESM.a > delport 1

PXM1E_SJ.1.20.CESM.a >
```

To delete multiple CESM or MPSM ports, enter the **delports** command as described in Chapter 6, "CESM and MPSM Command Reference."

Managing Resource Partitions

Resource partitions define how a switch's limited resources are distributed between two or more virtual switch controllers. By defining the limits of the resources available to each controller, competition and overlap is eliminated for these resources.

How resource partitions are managed on CESM and MPSM cards is dependent upon the platform in which the service modules are provisioned. On PXM1 platforms, service module resource partitions are managed on both the card level and the port level. On PXM45 and PXM1E platforms, service module resource partitions are managed only on the port level.

When a card is first brought up, the card resource partition consists of each controller sharing the maximum number of connections available for the service module type. This equal sharing of card level resources may be modified to eliminate resource conflicts.

When a port is added, a port resource partition is created and consists of the number of connections, the range of connection identifiers, and the ingress and egress bandwidth available to each controller. By default, the port resources are fully shared among the controllers and the connection values are inherited from the card resource partition. Port level resources may also be modified to eliminate resource conflicts.

These topics describe resource partitions on Cisco MGX switch platforms:

- Resource Partitions on PXM45 and PXM1E Based Switches
- Resource Partitions on PXM1 Based Switches

Resource Partitions on PXM45 and PXM1E Based Switches

On the PXM45 and PXM1E platforms, CESM and MPSM resource partitions are managed only on the port level. Cisco MGX Release 5 supports only the PNNI controller on service modules, so all port resources are assigned to the PNNI controller when a port is added. This resource assignment is automatically made by the software and results in the creation of a resource partition for the port.

The following section, "Managing Port Resource Partitions on PXM45 and PXM1E Based Switches", describes how to manage port resource partitions on PXM45 and PXM1E based switches.

Managing Port Resource Partitions on PXM45 and PXM1E Based Switches

The following tasks describe how to manage port resource partitions on CESM and MPSM cards installed in PXM45 and PXM1E based switches:

- Displaying a Port Resource Partition Configuration on PXM45 and PXM1E Based Switches
- Adding a Port Resource Partition on PXM45 and PXM1E Based Switches
- Modifying a Port Resource Partition on PXM45 and PXM1E Based Switches
- Deleting a Port Resource Partition Configuration on PXM45 and PXM1E Based Switches

During the normal operation of CESM and MPSM cards, you will not need to add a port resource partition. Port resource partitions are created automatically when you add a port to a line.

On the MPSM card, you can view the port resource partition configuration, make changes to it, or delete it. If you delete a port resource partition, you will have to add a new partition for that port before you can assign connections to the port. On the CESM card, you can view the port resource partition configuration and delete it, but you cannot modify it.

Table 5-5 lists the CESM and MPSM port resource partition commands supported on PXM45 and PXM1E platforms in Cisco MGX Release 5. For more information on these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-5 CESM/MPSM Port Resource Partitioning Commands (PXM45/PXM1E Platform)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1 CESM-8E1
addrscprtn	X	X
cnfrscprtn	X	
delrscprtn	X	X
dsprscprtn	X[1]	X
xcnfrscprtn	X	
cnfportrscprtn	X[2]	
dspportrscprtn	X[3]	

1. This command gives the same output as the **dspportrscprtn** command.
2. This command does nothing except change the partition status to modified. There are no options supported.
3. This command gives the same output as the **dsprscprtn** command.

Displaying a Port Resource Partition Configuration on PXM45 and PXM1E Based Switches

To display the resource partition configuration of a port on a CESM or MPSM card, enter the **dsprscprtn** command as follows:

```
PXM1E_SJ.1.4.CESM.a > dsprscprtn <port>
```

Replace the port parameter with the port number. For example:

```
PXM1E_SJ.1.4.CESM.a > dsprscprtn 1

  Port  User  Status  NumOfLcnAvail   LcnLow   LcnHigh   IngrBW  EgrBW CtrlrId
  ---- ------ ------ --------------  -------- ---------  ------  ----- --------
   1    PNNI   Add          1           1         1        100     100    2


PXM1E_SJ.1.4.CESM.a >
```

Adding a Port Resource Partition on PXM45 and PXM1E Based Switches

To add a resource partition to a port on a CESM or MPSM card, enter the **addrscprtn** command as follows:

```
PXM1E_SJ.1.4.CESM.a > addrscprtn <port_num> <cntrlr_type> <cntrlr_id>
```

Table 5-6 lists and describes the parameters for the **addrscprtn** command on PXM45 and PXM1E platforms in Cisco MGX Release 5.

Table 5-6 Parameters for the addrscprtn/delrscprtn Commands

Parameter	Description
port_num	Port number associated with the resource partition to be added or deleted. You must add a port to a line before you can define a partition for a port. Use the **dspports** command to view the available ports. The port number is found in the *Port* column in the format *Slot.Line.Port*.
cntrlr_type	Controller for this partition. Enter 2 as the PNNI controller is the only controller type supported in MGX Release 5. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
cntrlr_id	If adding a resource partition, enter a number that will be associated with the controller used by this partition. Range is 1 to 255. If deleting a resource partition, enter the controller ID assigned to the partition you are deleting. To display the controller ID, use the **dsprscprtn** command. Valid range is from 1 to 255.

The following example adds a resource partition to a CESM port after the default partition was deleted:

```
PXM1E_SJ.1.4.CESM.a > addrscprtn 1 2 2

PXM1E_SJ.1.4.CESM.a >
```

Modifying a Port Resource Partition on PXM45 and PXM1E Based Switches

To modify the resource partition of a port on an MPSM card, enter the **cnfrscprtn** command as follows:

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfrscprtn <port_num> <cntrlr> <pct_bw_ingr> <pct_bw_egr>
<low_lcn> <high_lcn> <numOfLcnAvail>
```

Table 5-7 lists and describes the parameters for the **cnfrscprtn** command on PXM45 and PXM1E platforms in Cisco MGX Release 5.

Table 5-7 Parameters for the cnfrscprtn Command

Parameter	Description
port_num	Port number associated with the resource partition to be modified. You must add a port to a line before you can modify the resource partition on a port. Use the **dspports** command to view the available ports. The port number is found in the *Port* column in the format *Slot.Line.Port*.
cntrlr	Controller for this partition. Enter 2 as the PNNI controller is the only controller type supported in MGX Release 5. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
pct_bw_ingr	Ingress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for ingress communications. Range is 0 to 100 percent.

Table 5-7 Parameters for the cnfrscprtn Command (continued)

Parameter	Description
pct_bw_egr	Egress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for egress communications. Range is 0 to 100 percent.
low_lcn	Low LCN number available in this port resource partition. Range is 1 to 1000.
high_lcn	High LCN number available in this port resource partition. Range is 1 to 1000.
numOfLcnAvail	Maximum LCNs (connections) available in this port resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES: 1–192 • CESM-8E1, MPSM-8E1-CES: 1–248

The following example changes the PNNI port resource partition configured on port 1 of an MPSM card to use an ingress and egress bandwidth of 50 percent, a low LCN number of 1, a high LCN number of 1, and the maximum connections available as 1:

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfrscprtn 1 2 50 50 1 1 1

M8850_SF.1.28.MPSM8T1.CES.a >
```

Deleting a Port Resource Partition Configuration on PXM45 and PXM1E Based Switches

To delete the resource partition configuration of a port on a CESM or MPSM card, use the following procedure.

Step 1 Delete all connections that are associated with the port resource partition (**dspcons** and **delcon** commands).

Step 2 Enter the **delrscprtn** command as follows:

```
PXM1E_SJ.1.30.CESM.a > delrscprtn <port_num> <cntrlr_type> <cntrlr_id>
```

Table 5-6 lists and describes the parameters for the **delrscprtn** command.

The following example shows how to use the **delrscprtn** command:

```
PXM1E_SJ.1.30.CESM.a > delrscprtn 6 2 2

PXM1E_SJ.1.30.CESM.a >
```

Resource Partitions on PXM1 Based Switches

On the PXM1 platform, CESM and MPSM resource partitions are managed on both the card level and the port level. Cisco MGX Release 1.3 supports only the PAR controller on service modules, so all card and port resources are assigned to the PAR controller when a card is brought up and a port is added even though the PNNI and TAG controllers are present in the card and port partition display commands. This resource assignment is automatically made by the software and results in the creation of a resource partition for the card and the port.

The following topics describe how to manage card and port resource partitions on PXM1 based switches:

- Managing Card Resource Partitions on PXM1 Based Switches
- Managing Port Resource Partitions on PXM1 Based Switches

Managing Card Resource Partitions on PXM1 Based Switches

The following tasks describe how to manage card resource partitions on PXM1 switches:

- Displaying a Card Resource Partition Type on PXM1 Based Switches
- Displaying a Card Resource Partition Configuration on PXM1 Based Switches
- Adding a Card Resource Partition on PXM1 Based Switches
- Modifying a Card Resource Partition on PXM1 Based Switches
- Deleting a Card Resource Partition Configuration on PXM1 Based Switches

On the CESM-8T1/B, CESM-8T1, CESM-8E1, and MPSM cards, the card resource partition type is not configurable. The default setting on these cards is for a *Port Controller Based* card resource partition type.

During the normal operation of CESM and MPSM cards, you will not need to add a card resource partition. Card resource partitions are created automatically when you bring up a card.

On the MPSM card you can view the card resource partition configuration, make changes to it, or delete it. If you delete a card resource partition, you will have to add a new partition for that card before you can assign ports to the card. On the 8-port CESM cards you can only view and make changes to the card resource partition.

Table 5-8 lists the CESM and MPSM card resource partition commands supported on PXM1 platforms in Cisco MGX Release 1.3. For more information on these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-8 CESM/MPSM Card Resource Partitioning Commands (PXM1 Platform)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1 CESM-8E1
cnfcdprtntype	X[1]	X[1]
dspcdprtntype	X	X
xcnfcdprtntype	X[1]	X[1]
addcdrscprtn	X	X[2]
cnfcdrscprtn	X[3]	X
delcdrscprtn	X	X[1]
dspcdrscprtn	X	X
xcnfcdrscprtn	X[4]	X[5]

1. This command is in the CLI, but it is not supported.
2. This command will modify the card resource partition if the status of the card resource partition is modified.
3. This command modifies all controllers. All controllers do not have to be present. Does not add controllers not present in the card resource partition.
4. This command cannot add or delete, only modify.

5. This command cannot add or delete, only modify. The add parameter will modify if the status of the card resource partition is modified

Displaying a Card Resource Partition Type on PXM1 Based Switches

To display the card resource partition type of a CESM or MPSM card, enter the **dspcdprtntype** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspcdprtntype

   cardLcnPartitionType: port controller based

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Displaying a Card Resource Partition Configuration on PXM1 Based Switches

To display the card resource partition configuration of a CESM or MPSM card, enter the **dspcdrscprtn** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspcdrscprtn

User   NumOfLcnAvail
------  -------------
   PAR         192
   PNNI        192
   TAG         192


M8250_SJ.1.22.MPSM8T1.CES.a >
```

Note in this example that although the PAR controller is the only controller supported on the CESM and MPSM cards on PXM1 platforms, the PNNI and TAG controllers are also present in the display output.

Adding a Card Resource Partition on PXM1 Based Switches

To add a card resource partition to a CESM or MPSM card, enter the **addcdrscprtn** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > addcdrscprtn <controller> <numOfLcnAvail>
```

Table 5-9 lists and describes the parameters for the **addcdrscprtn** command on PXM1 platforms in Cisco MGX Release 1.3.

Table 5-9 Parameters for the addcdrscprtn Command

Parameter	Description
controller	Controller type for the resource partition. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
numOfLcnAvail	Number of LCNs (connections) available for the resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

The following example adds a card resource partition to an MPSM card after the default partition was deleted.

```
M8250_SJ.1.22.MPSM8T1.CES.a > addcdrscprtn 1 100

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Modifying a Card Resource Partition on PXM1 Based Switches

To modify the card resource partition on a CESM or MPSM card, enter the **cnfcdrscprtn** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfcdrscprtn <#PARcon> <#PNNIcon> <#TAGcon>
```

Table 5-10 lists and describes the parameters for the **cnfcdrscprtn** command on PXM1 platforms in Cisco MGX Release 1.3.

Table 5-10 Parameters for the cnfcdrscprtn Command

Parameter	Description
#PARcon *#PNNIcon* *#TAGcon*	Maximum number of connections (LCNs) available to the PAR, PNNI, and TAG controllers. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

The following example configures an MPSM card to support up to 100 connections per controller:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfcdrscprtn 100 100 100

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Deleting a Card Resource Partition Configuration on PXM1 Based Switches

To delete a card resource partition on a CESM or MPSM card, enter the **delcdrscprtn** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > delcdrscprtn <controller>
```

Table 5-11 lists and describes the parameters for the **delcdrscprtn** command on PXM1 platforms in Cisco MGX Release 1.3.

Table 5-11 Parameters for the delcdrscprtn Command

Parameter	Description
controller	Controller of the resource partition to delete: • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)

The following example deletes a PNNI card resource partition from an MPSM card:

```
M8250_SJ.1.22.MPSM8T1.CES.a > delcdrscprtn 2

M8250_SJ.1.22.MPSM8T1.CES.a >
```

The **delcdrscprtn** command is not supported on the 8-port CESM cards.

Managing Port Resource Partitions on PXM1 Based Switches

The following tasks describe how to manage port resource partitions on PXM1 switches:

- Displaying a Port Resource Partition Configuration on PXM1 Based Switches
- Modifying a Port Resource Partition on PXM1 Based Switches

On the CESM and MPSM cards, you can only view and make changes to the port resource partition configuration. The port resource partitions are created automatically when you add a port to a line.

Table 5-12 lists the CESM and MPSM port resource partition commands supported on PXM1 platforms in Cisco MGX Release 1.3. For more information on these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-12 CESM/MPSM Port Resource Partitioning Commands (PXM1 Platform)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1 CESM-8E1
addrscprtn	X[1]	X[1]
cnfrscprtn	X	X
delrscprtn	X[2]	X[2]
dsprscprtn	X[3]	
xcnfrscprtn	X[4]	X[4]
cnfportrscprtn	X[5]	X[5]
dspportrscprtn	X[6]	X

1. This command is supported if the status of the card resource partition is modified.
2. This command is in the CLI, but it is not supported.
3. This command gives the same output as the **dspportrscprtn** command.
4. This command cannot add or delete, only modify. The add parameter will modify if the status of the port resource partition is modified.
5. This command does nothing except change the partition status to modified. There are no options supported
6. This command gives the same output as the **dsprscprtn** command.

Displaying a Port Resource Partition Configuration on PXM1 Based Switches

To display the resource partition configuration of a port on a CESM or MPSM card, enter the **dspportrscprtn** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspportrscprtn

  Port  User  Status  NumOfLcnAvail   LcnLow   LcnHigh   IngrBW  EgrBW
  ---- ------ ------ --------------  -------- ---------  ------  -----
   1    PAR    Add          1           0         0        100     100
   1    PNNI   Add          1           0         0        100     100
   1    TAG    Add          1           0         0        100     100


M8250_SJ.1.22.MPSM8T1.CES.a >
```

Modifying a Port Resource Partition on PXM1 Based Switches

To modify a resource partition of a port on a CESM or MPSM card, enter the **cnfrscprtn** command as follows:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfrscprtn <port_num> <cntrl> <pct_bw_ingr> <pct_bw_egr>
<low_lcn> <high_lcn> <numOfLcnAvail>
```

Table 5-13 lists and describes the parameters for the **cnfrscprtn** command on PXM1 platforms in Cisco MGX Release 1.3.

Table 5-13 Parameters for the cnfrscprtn Command

Parameter	Description
port_num	Port number associated with the resource partition to be modified. You must add a port to a line before you can modify the resource partition on a port. Use the **dspports** command to view the available ports.
cntrlr	Controller for this partition: • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
pct_bw_ingr	Ingress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for ingress communications. Range is 0 to 100 percent.
pct_bw_egr	Egress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for egress communications. Range is 0 to 100 percent.
low_lcn	Low LCN number available in this port resource partition. Range is 1 to 1000.
high_lcn	High LCN number available in this port resource partition. Range is 1 to 1000.
numOfLcnAvail	Maximum LCNs (connections) available in this port resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES: 1–192 • CESM-8E1, MPSM-8E1-CES: 1–248

The following example modifies a port resource partition on an MPSM card:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfrscprtn 1 1 50 50 1 1 1

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Managing Connections

Chapter 3, "Provisioning SPVCs (PXM1E/PXM45) on CESM and MPSM Cards," and Chapter 4, "Provisioning PVCs (PXM1) on CESM and MPSM Cards," describe how to add connections to CESM and MPSM cards. The following sections provide procedures for doing the following:

- Displaying a List of Connections
- Displaying the Status of a Single Connection
- Deleting SPVC Connections
- Deleting PVC Connections

- Testing Connections
- Monitoring Connection Statistics
- Displaying Connection Alarms

Displaying a List of Connections

Enter the **dspcons** command to display a list of the connections provisioned on the current CESM or MPSM card.

This example shows the connections provisioned on an MPSM-8T1-CES card installed in a PXM1E platform:

```
PXM1E_SJ.1.4.CESM.a > dspcons

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.04.035   stru S   Synch 4096   00500 00384 02500 Up    OK
  0036 002.04.036   stru M   Synch 4096   01000 00384 02500 Up    OK
  0037 003.04.037   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT

  Number of channels:    3

  ChanNumNextAvailable:  38

PXM1E_SJ.1.4.CESM.a >
```

This example shows the connections provisioned on a CESM-8T1 card installed in a PXM1 platform:

```
M8250_SJ.1.3.CESM.a > dspcons

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     1 M8250_SJ.3.1.0        32    Add     1000   192    2500   struct  Okay

  ChanNumNextAvailable:  33

M8250_SJ.1.3.CESM.a >
```

To determine if a connection is in alarm, check the status in the Alarm column. For more information on a single connection, use the **dspcon** command.

Displaying the Status of a Single Connection

To display the configuration and status of a single connection, enter the **dspcon** command as follows:

```
PXM1E_SJ.1.4.CESM.a > dspcon <port>
```

Enter the port number with the command. You can view the port numbers in the **dspcons** display.

This example shows the configuration and status of a single connection provisioned on a CESM card installed in a PXM45 platform:

```
M8850_SF.1.30.CESM.a > dspcon 1

  -------------------------------------------
  ChanNum:   35         RowStatus: Add
  AdmnState: Up         ChanState: Ok
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
```

```
 ---------- ---------- ---------- ----------
     NO         NO         NO         NO
 -------------------------------------------

 ChanNum:                    35
 ChanRowStatus:              Add
 ConnAdminStatus:            Up
 ChanLineNum:                1
 ChanMapVpi:                 30
 ChanMapVci:                 35
 ChanCBRService:             struct
 ChanClockMode:              Synchronous
 ChanCAS:                    Basic
 ChanPartialFill:            47
 ChanMaxBufSize:             240 bytes
 ChanCDVT:                   1000 micro seconds
 C L I P:                    2500 milliseconds
 ChanLocalRemoteLpbkState:   Disabled
 ChanTestType:               TestOff
 ChanTestState:              NotInProgress
 ChanRTDresult:              65535 ms
 ChanPortNum                 1
 ChanConnType                SPVC
 ISDetType                   DetectionDisabled
 CondData                    255
 CondSignalling              15
 ExtISTrig                   DisableIdleSupression
 ISIntgnPeriod               3 seconds
 ISSignallingCode            0
 OnHookCode                  1
 ChanLocalVpi:               30
 ChanLocalVci:               35
 ChanLocalNSAP:              47009181000000000164444b6100000107f30100
 ChanRemoteVpi:              0
 ChanRemoteVci:              0
 ChanRemoteNSAP:             NULL NSAP
 ChanMastership:             Slave
 ChanVpcFlag:                Vcc
 ChanConnServiceType:        CBR1
 ChanRoutingPriority:        8
 ChanPreferredRouteId:       0
 ChanDirectedRoute:          No
 ChanMaxCost:                2147483647
 ChanRestrictTrunkType:      No Restriction
 ChanConnPCR:                2560
 ChanConnMCR:                2560
 ChanConnPercentUtil:        100
 Channel Reroute:            False

 ChanNumNextAvailable:  37
```

This example shows the configuration and status of a connection provisioned on a CESM card installed in a PXM1 platform:

```
M8250_SJ.1.3.CESM.a > dspcon 1

  ChanNum:                    32
  ChanRowStatus:              Add
  ChanLineNum:                1
  ChanMapVpi:                 3
  ChanMapVci:                 32
  ChanCBRService:             struct
  ChanClockMode:              Synchronous
  ChanCAS:                    Basic
```

```
  ChanPartialFill:          47
  ChanMaxBufSize:           192 bytes
  ChanCDVT:                  1000 micro seconds
  C L I P:                  2500 milliseconds
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:             TestOff
  ChanTestState:            NotInProgress
  ChanRTDresult:            65535 ms
  ChanPortNum               1
  ChanConnType              PVC
  ISDetType                 DetectionDisabled
  CondData                  255
  CondSignalling            15
  ExtISTrig                 DisableIdleSupression
  ISIntgnPeriod             3 seconds
  ISSignallingCode          0
  OnHookCode                1
  ChanLocalVpi:             0
  ChanLocalVci:             0
  ChanLocalNSAP:            4d383235305f534a000000000000000003000100
  ChanRemoteVpi:            11
  ChanRemoteVci:            100
  ChanRemoteNSAP:           4d383235305f534a000000000000000000000100
  ChanMastership:           Master
  ChanVpcFlag:              Vcc
  ChanConnServiceType:      CBR
  ChanRoutingPriority:      1
  ChanMaxCost:              2147483647
  ChanRestrictTrunkType:    No Restriction
  ChanConnPCR:              2048
  ChanConnMCR:              2048
  ChanConnPercentUtil:      100

  ChanNumNextAvailable:  33

M8250_SJ.1.3.CESM.a >
```

Deleting SPVC Connections

Each SPVC connection has two endpoints. To completely delete a connection, you need to delete both endpoints. To delete an SPVC connection endpoint, enter the **delcon** command, as shown below:

```
PXM1E_SJ.1.4.CESM.a > delcon <port>
```

Replace the *port* parameter with the port number for the connection you want to delete. On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** command.

The **delcon** command deletes one end of the connection. Note, however, that this command does not delete the other end of the SPVC. The other endpoint of the SPVC can reside on the same service module, on a different service module located in the same switch, or on a service module located in a different switch. Issue the **delcon** command at the location of where the other endpoint is located to completely delete the SPVC connection.

Deleting PVC Connections

Each PVC connection has two endpoints. To completely delete a connection, you need to delete both endpoints. How a PVC is deleted depends upon whether the PVC is a feeder segment connection or a local connection.

To delete a feeder segment connection, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 On the local CESM or MPSM card that hosts the feeder segment connection, enter the **delcon** command as shown below:

```
M8850_R1.1.2.CESM.a > delcon <port_num>
```

Replace the *port* parameter with the port number for the connection you want to delete. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** command.

Since feeder segment connections are added only as master connections from a service module user port to a PXM1 feeder trunk, the **delcon** command will delete both ends of the feeder segment connection.

Step 3 If the PVC you are deleting is part of a two segment feeder connection, delete the routing connection in the ATM core network. Refer to the software configuration guides for the switches in the ATM core network for instructions on deleting connections. See the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* or the *Cisco BPX 8600 Series Installation and Configuration, Release 9.3.30.*

Step 4 If the PVC you are deleting is part of a three segment feeder connection, delete the routing connection in the ATM core network, and then log in to the remote feeder switch and delete the feeder connection on the remote service module.

If the feeder connection on the remote switch originates from a CESM or MPSM user port, use the **delcon** command as outlined in step 2 to delete the feeder segment connection.

If the feeder connection on the remote feeder switch originates from a user port on a card other than a Circuit Emulation service module, refer to the documentation for that card for instructions on deleting the connection.

To delete a local connection on a feeder switch or standalone switch, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 On the CESM or MPSM card that hosts one end of the local connection, enter the **delcon** command as shown below:

```
M8850_R1.1.2.CESM.a > delcon <port_num>
```

Replace the *port* parameter with the port number for the connection you want to delete. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** command.

Since local connections are added as slave and master endpoints, the **delcon** command deletes only one endpoint of the local connection. The other endpoint of the local connection can reside on a user port located on the same service module, or on a user port located on a different service module in the same switch.

Step 3 If the other end of the local connection is located on a CESM or MPSM user port, use the **delcon** command as outlined in step 2 to delete the endpoint.

If the other endpoint of the local connection is located on a user port on a card other than a Circuit Emulation service module, refer to the documentation for that card for instructions on deleting the connection.

Testing Connections

The following tasks describe how to test Circuit Emulation connections on CESM and MPSM cards:

- Testing with tstcon
- Testing with tstdelay

The **tstcon** and **tstdelay** commands perform short tests that verify that the switch can communicate with both ends of a connection.

Testing with tstcon

The **tstcon** command checks to see if the switch can communicate with both ends of a connection. To test a Circuit Emulation connection on a CESM or MPSM card with the **tstcon** command, enter the command as follows:

```
PXM1E_SJ.1.4.CESM.a > tstcon <port>
```

Replace the *port* parameter with the port number for the connection you want to test. On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** and **dspchans** commands.

The following is an example of a **tstcon** test:

```
PXM1E_SJ.1.4.CESM.a > tstcon 2

TestCon in progress.

TestCon Passed.

PXM1E_SJ.1.4.CESM.a >
```

The **tstcon** command sends a single collection of supervisory cells from the local to the remote end of a connection and displays a pass or fail message. If connection segments are failed or misconfigured, the **tstcon** command fails. Note that the **tstcon** command does not test quality of service or connectivity beyond the Cisco MGX network.

The **tstcon** command has some limitations:

- It works only for local connections or connections in a tiered network comprising a Cisco backbone network.
- It should be issued from both ends of a connection to completely verify connectivity.
- A passing result of the test does not guarantee a connection’s end-to-end performance.

> **Note** In addition to the **tstcon** command, the **tstchan** command is available to test connections on CESM and MPSM cards. The **tstchan** command has the same functionality as the **tstcon** command.

Testing with tstdelay

The **tstdelay** command checks to see if the switch can communicate with both ends of a connection, and it returns a measurement of the round-trip delay across the connection. To test a Circuit Emulation connection on a CESM or MPSM card with the **tstdelay** command, enter the command as follows:

```
PXM1E_SJ.1.4.CESM.a > tstdelay <chan_num>
```

Replace the *chan_num* parameter with the channel number for the connection you want to test. On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the ChNum column in the output of the **dspcons** and **dspchans** commands.

The following is an example of a **tstdelay** test:

```
PXM1E_SJ.1.4.CESM.a > tstdelay 36

TestDelay in progress.

TestDelay Passed with 2 ms.

PXM1E_SJ.1.4.CESM.a >
```

The **tstdelay** command shares the same limitations as the **tstcon** command.

Monitoring Connection Statistics

Use the commands in table Table 5-14 to display and clear CESM and MPSM connection statistics. The channel count commands enable the user to monitor the traffic being transmitted to and received from attached end-user equipment. The SAR counter commands enable the user to monitor the cell bus SAR statistics.

Table 5-14 CESM and MPSM Connection Statistics Commands

Command	Purpose
dspchancnt	Enter this command to display connection statistics of a specific connection.
xdspchancnt	Enter this command to display connection statistics of a specific connection.
clrchancnt	Enter this command to clear connection counter values of a specific connection.
xclrchancnt	Enter this command to clear connection counter values of a specific connection.
clrchancnts	Enter this command to clear connection counter values of all connections on a CESM or MPSM card.
dspsarcnt	Enter this command to display connection SAR statistics of a specific connection.
dspsarcnts	Enter this command to display connection SAR statistics of all connections on a CESM or MPSM card.

Table 5-14 CESM and MPSM Connection Statistics Commands (continued)

Command	Purpose
clrsarcnt	Enter this command to clear the SAR counter values for a specific connection.
clrsarcnts	Enter this command to clear connection SAR counter values of all connections on a CESM or MPSM card.

The following example shows the output of the **dspchancnt** command on a CESM card:

```
PXM1E_SJ.1.4.CESM.a > dspchancnt 35

ChanNum:                   35
Chan State:                Okay
Chan RCV ATM State:        Normal
Chan XMT ATM State:        Normal
Cell Loss Status:          No Cell Loss
Reassembled Cells:         3744204536
Generated Cells:           4192713783
Header Errors:             187710088
Seqence Mismatches :       93862536
Lost Cells:                22147575
Channel Uptime (secs.)     4144394
Signalling Status          Offhook

PXM1E_SJ.1.4.CESM.a >
```

In the command output, the transmit (Tx) direction is from the ATM network and service module towards the CPE. The receive (Rx) direction is from the CPE towards the service module and ATM network.

The following example shows the output of the **dspsarcnt** command on a CESM card:

```
PXM1E_SJ.1.4.CESM.a > dspsarcnt 35

                          SarShelfNum:         1
                          SarSlotNum:          4
                          SarChanNum:          35
                                Tx                      Rx
                          ---------------       ---------------
  Total Cells:            72810522              72696866
  Total CellsCLP:         0                     0
  Total CellsAIS:         0                     0
  Total CellsFERF:        0                     0
  Total CellsEnd2EndLpBk: 0                     0
  Total CellsSegmentLpBk: 0                     0
  RcvCellsDiscOAM:                              0


PXM1E_SJ.1.4.CESM.a >
```

Displaying Connection Alarms

To display a list of any connections in alarm use the **dspcons** command:

```
M8850_SF.1.26.CESM.a > dspcons

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.26.035   stru S   Synch 2048   01000 00192 02500 Up    OK
  0036 002.26.036   stru M   Synch 2048   01000 00192 02500 Down  ADMIN-DOWN
  0037 003.26.037   stru M   Synch 2048   01000 00192 02500 Up    OK
```

```
  0038 004.26.038   stru S   Synch 2048   01000 00192 02500 Up    CTRLR-ABIT

  ChanNumNextAvailable:  39

M8850_SF.1.26.CESM.a >
```

The connection alarm state displayed in the **dspcons** command follows the following hierarchy:

ADMIN_DOWN, PORT_ALARM, CTRLR-ABIT, E-AIS/RDI, CELL LOSS

To display the status and the type of alarms present on a connection use the **dspcon** command:

```
M8850_SF.1.26.CESM.a > dspcon 2

  -------------------------------------------
  ChanNum:   36         RowStatus: OOS
  AdmnState: Down       ChanState: Failed
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO        YES         NO        YES
  -------------------------------------------

  ChanNum:                  36
  ChanRowStatus:            OOS
  ConnAdminStatus:          Down
  ChanLineNum:              1
  ChanMapVpi:               26
  ChanMapVci:               36
  ChanCBRService:           struct
  ChanClockMode:            Synchronous
  ChanCAS:                  Basic
  ChanPartialFill:          47
  ChanMaxBufSize:           192 bytes
  ChanCDVT:                 1000 micro seconds
  C L I P:                  2500 milliseconds
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:             TestOff
  ChanTestState:            NotInProgress
  ChanRTDresult:            65535 ms
  ChanPortNum               2
  ChanConnType              SPVC
  ISDetType                 DetectionDisabled
  CondData                  255
  CondSignalling            15
  ExtISTrig                 DisableIdleSupression
  ISIntgnPeriod             3 seconds
  ISSignallingCode          0
  OnHookCode                1
  ChanLocalVpi:             26
  ChanLocalVci:             36
  ChanLocalNSAP:            47009181000000000164444b6100000107d30200
  ChanRemoteVpi:            4
  ChanRemoteVci:            36
  ChanRemoteNSAP:           4700918100000000001a53337700000107230200
  ChanMastership:           Master
  ChanVpcFlag:              Vcc
  ChanConnServiceType:      CBR1
  ChanRoutingPriority:      8
  ChanPreferredRouteId:     0
  ChanDirectedRoute:        No
  ChanMaxCost:              2147483647
  ChanRestrictTrunkType:    No Restriction
  ChanConnPCR:              2048
  ChanConnMCR:              2048
```

```
  ChanConnPercentUtil:      100
  Channel Reroute:          False

  ChanNumNextAvailable:  39

M8850_SF.1.26.CESM.a >
```

Managing Loopbacks

Loopbacks are used as a troubleshooting tool to aid in resolving problems with physical lines and logical connections. These topics describe loopbacks on the CESM and MPSM cards:

- CESM Card Loopbacks
- MPSM Card Loopbacks

CESM Card Loopbacks

The CESM-8T1/B, CESM-8T1, and the CESM-8E1 cards support line loopbacks.

Line loopbacks can be enabled by:

- Manually placing the line in loopback mode using CESM CLI commands.
- Enabling loopback code detection using CESM CLI commands.
- Placing a line in loopback mode using the SRM by means of PXM BERT CLI commands.

Channel loopbacks are not supported on the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards.

Figure 5-1 shows the details of where the various types of loopbacks occur within the architecture of the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards.

Figure 5-1 CESM-8T1E1 Line Loopbacks

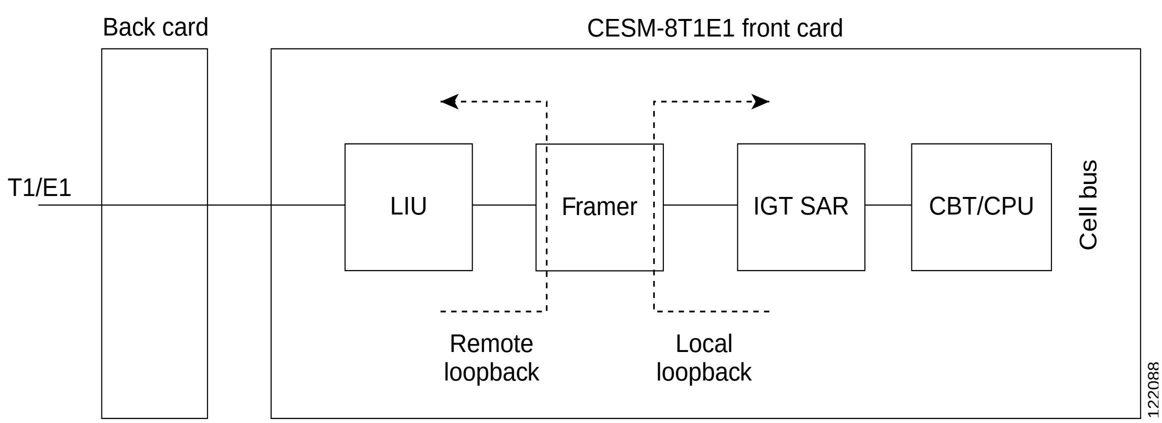


Table 5-15 describes the loopback commands supported by the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards. For more information on the use of these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-15 Loopback Commands Supported on the CESM-8T1 and CESM-8E1

Command	Purpose
addlnloop	Enter this command to place a line in local loopback. When a line is in local loopback, all data is looped back to the network.
dellnloop	Enter this command to remove the local line loopback feature from a line.
xcnfln	Enter this command to enable or disable a local loopback on a line by using the -**lpb** option. **Note** Although remote loopback is displayed as an option for this command, it is not supported and remote loopback must be enabled through the use of the SRM. A line in remote loopback loops data sent from the CPE back to the CPE. Enter this command to enable loopback code detection by using the **-detect** option. Upon detecting a loopback activate code, the line goes into remote loopback.

MPSM Card Loopbacks

The MPSM-8T1-CES and MPSM-8E1-CES cards support line and channel loopbacks.

Line loopbacks can be enabled by:

- Manually placing the line in loopback mode using MPSM CLI commands.
- Enabling loopback code detection using MPSM CLI commands.
- Placing a line in loopback mode using the SRM by means of PXM BERT CLI commands.

Channel loopbacks are enabled through use of CLI commands on the MPSM card.

Figure 5-2 shows the details of where the various types of loopbacks occur within the architecture of the MPSM-8T1E1 card.

Figure 5-2 MPSM-8T1E1 Line and Channel Loopbacks

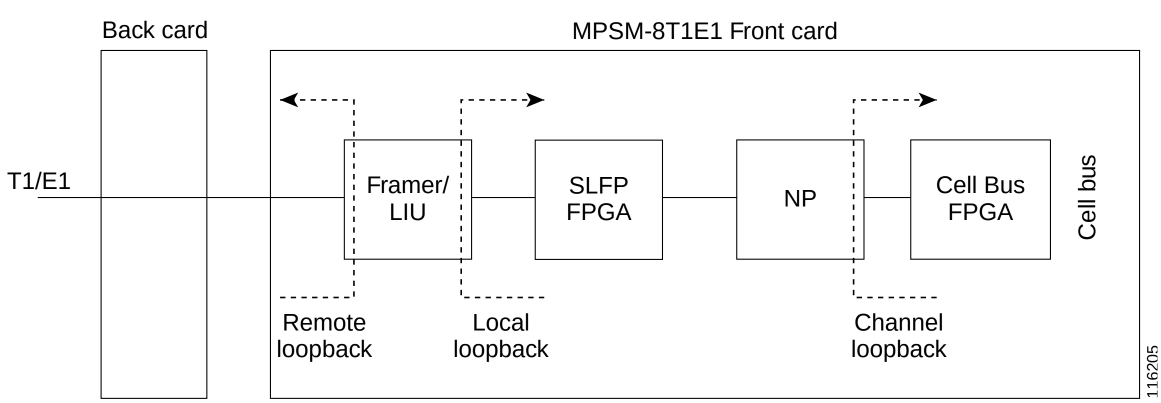


Table 5-16 describes the loopback commands supported by the MPSM-8T1-CES and MPSM-8E1-CES cards. For more information on the use of these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-16 Loopback Commands Supported on the MPSM-8T1-CES and MPSM-8E1-CES Cards

Command	Purpose
addlnloop	Enter this command to place a line in local loopback. When a line is in local loopback, all data is looped back to the network.
dellnloop	Enter this command to remove the local line loopback feature from a line.
xcnfln	Enter this command to enable or disable a local loopback or remote loopback on a line by using the **-lpb** option. A line in remote loopback loops data sent from the CPE back to the CPE. Enter this command to enable loopback code detection by using the **-detect** option. Upon detecting a loopback activate code, the line goes into remote loopback.
addchanloop	Enter this command to place a connection in channel local remote loopback[1].
delchanloop	Enter this command to remove the channel local remote loopback from a connection[1].
xcnfchan, xcnfcon	Enter this command to enable or disable a channel local remote loopback[1] by using the **-rmtlb** option.

1. A channel local remote loopback is enabled on the local card and looped back in the direction of the network to the remote end of a connection, hence the term *local remote*.

Managing Bit Error Rate Testing (BERT)

The following topics discuss Bit Error Rate Testing (BERT) on CESM and MPSM cards:

- SRM Supported BERT
- MPSM-8T1E1 Onboard BERT

Bit Error Rate Testing (BERT) is utilized to determine the health of a full T1, E1, or DS3 line, or can be run on a fractional T1 or E1 line, such as a single DS0 or group of DS0's. Tests are categorized into three broad areas: BERT pattern tests, Loopbacks, and Monitoring functions.

Bit Error Rate Testing involves sending a pseudo-random, a repetitive, or a user-specified pattern on a physical line. The loopbacked pattern received by the local end is compared with the original test pattern. The quality of a physical interface/line is determined by the number of bit errors discovered in the received patterns. When determining the bit error rate, the following formula is used: Bit Error Rate = Bits received in error/Bits sent.

BERT operations are data intrusive and regular, user traffic cannot flow on the line/port being tested while the operation is in progress. A BERT session requires the tested path to be in a loopback mode. The line/port is put into an alarmed state at the start of the operation and restored to a normal state when the operation is terminated.

BERT should not affect performance since it is a diagnostic feature. It is however important to note that this is a destructive/intrusive feature in that it puts the line or port being tested out of service. As a result, all channels that exist on the line/port being tested will go into the alarmed state. This may result in a flood of traps and/or other kinds of traffic (AIS, and so forth.) reporting the channel alarms. This might negatively impact the performance of other functions.

A typical sequence in performing Bit Error Rate Testing consists of the following steps:

1. Place the far end interface on the attached end-user equipment in loopback mode if it does not support loopback code detection.

2. Configure BERT. The user can configure the following parameters:

   – Type of loopback (The loopbacks configured are enabled when the BERT is started and deleted when the BERT is stopped)

   – Pattern to transmit

   – Error rate insertion

3. Start BERT: Start the Bit Error Rate Test on the specified interface. Generate the test pattern and detect the incoming pattern. Compare the two patterns and update the counters.

4. Display BERT results: Display the bit error count and the bit error rate.

5. Stop BERT: Stop generating the test pattern and the Bit Error Rate test.

SRM Supported BERT

The following topics provide an overview of SRM supported Bit Error Rate Testing (BERT):

- Overview of SRM Supported BERT
- BERT Configuration Parameters on the SRM

Overview of SRM Supported BERT

With support from the SRM-3T3/C, SRME, or SRME/B the Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), and Cisco MGX 8830 switches can perform a bit error rate test (BERT) on an active T1 or E1 line or port on the MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, or CESM-8E1 cards.

There are two BERT buses in the Cisco MGX 8250 and Cisco MGX 8850 switches. One is in the top bay and the other in the bottom bay. The shelf can run a maximum of two sessions at once. However, the Cisco MGX 8230 and the Cisco MGX 8830 switches have only one BERT bus and only one BERT session can be conducted at a time.

The CLI commands for configuring, displaying, modifying, and terminating SRM supported BERT are found on the PXM1, PXM1E, and PXM45 processor cards.

For instructions on how to configure SRM supported Bit Error Rate Tests on PXM1, PXM1E, and PXM45 platforms, refer to the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* and the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5* documentation.

BERT Configuration Parameters on the SRM

During BERT configuration on the PXM processor card, the choice of parameters or menu items depends first on the card type to be tested, and then whether the test medium is a physical line or a logical port.

Table 5-17 shows a summary of the SRM supported BERT configuration options available on the MPSM-8T1-CES, CESM-8T1, and CESM-8T1/B cards.

Table 5-17 SRM Supported BERT Configuration Options for MPSM-8T1-CES, CESM-8T1, and CESM-8T1/B Cards

Test Medium	Medium Type	Test Type	Device to Loop	BERT Test Patterns	Loopback Type
Port	Port with multiple timeslots (Nx56K, Nx64K)	BERT pattern Loopback	v54[1]	all l	Far end loopback Remote loopback
	Port with one 64K timeslot	BERT Pattern DDS seek[2] Loopback	latch[3] v54[1]		
	Port with one 56K timeslot	BERT pattern DDS seek[2]	nolatch[4]	2^9 2^11	
		Loopback	latch[3] v54[1]	all	
Line		BERT pattern Loopback	inband/ESF[5] metallic[6]	all	Far end loopback Remote loopback Metallic loopback

1. A polynomial loopback which loops only the timeslots sent across. V54 is used to test select channels and does not affect other user data on the T1.
2. Digital Dataphone Services (DDS) seek is a monitoring function test type and can be run only on a single DS0. This test is non-destructive and detects and displays network trouble codes, such as Abnormal Station Condition, Block, Channel Loopback, DSU Loopback, Far End Voice, Idle, Loopback Enable, MTU Alert, Mux Out of Sync, OCU Loopback, Release, Test, Test Alert, Transition in Progress, and Unassigned MUX Channel.
3. A device that can latch the data automatically unloops the loopback after the test signal ceases.
4. A device that does not latch the data receives the test pattern sent, enables the loopback automatically, and then must be manually taken out of loopback mode at the end of testing.
5. Far end inband loopback or far end ESF loopback.
6. A local loopback within the service module which does not involve an external device.

Table 5-18 shows a summary of the SRM supported BERT configuration options available on the MPSM-8E1-CES and CESM-8E1 cards.

Table 5-18 SRM Supported BERT Configuration Options for MPSM-8E1-CES and CESM-8E1 Cards

Test Medium	Test Type	Device to Loop	BERT Test Patterns	Loopback Type
Port	BERT Pattern Loopback		all	Remote loopback
Line	BERT Pattern Loopback	metallic[1]	all	Remote loopback Metallic loopback

1. A local loopback within the service module which does not involve an external device.

The available SRM supported T1 and E1 BERT patterns to choose from are shown in Table 5-19

Table 5-19 SRM Supported T1 and E1 BERT Patterns

Supported T1 and E1 BERT Patterns	
1. All zeroes	10. 3 in 24
2. All ones	11. DDS-1
3. Alternate Ones/Zeroes	12. DDS-2
4. Double Ones/Zeroes	13. DDS-3
5. 2^15 - 1 (non-ITU)	14. DDS-4
6. 2^20 - 1	15. DDS-5
7. 2^20 - 1 QRSS	16. 2^9
8. 2^23 - 1 (non-ITU)	17. 2^11
9. 1 in 8	

The loopback tests do not monitor the integrity of the data but rather the integrity of the path. The type of loopback indicates the direction of the data transmission. The loopback types supported by the SRM are described in Table 5-20.

Table 5-20 SRM Supported BERT Loopback Options

Loopback Type	Function
Far End Loopback	The service module transmits data to the CPE and receives the data back. There are three subtypes of far end loopbacks: Inband, ESF, and SmartJack inband loop codes (SRME only).
Remote Loopback	The service module receives the data from the CPE and loops back to the CPE. Another way of configuring remote loopback is to enable loopback code detection on the service module, then send the loopback code from the CPE.
Metallic Loopback	The service module receives data from the network and loops it back to the network. Metallic loopback is not the same as local loopback. Metallic loopback loops the data back to the network at the physical port on the back card of a service module, whereas local loopback loops the data back to the network through the framer in the service module.

MPSM-8T1E1 Onboard BERT

The following topics describe MPSM-8T1E1 onboard BERT:

- MPSM-8T1E1 Onboard BERT Features
- Managing a BERT Session on the MPSM-8T1E1

MPSM-8T1E1 Onboard BERT Features

MPSM Onboard BERT features and limitations common to the MPSM-8T1E1 card regardless of the interface and service type configured include:

- The MPSM onboard BERT session is initiated from the MPSM card.
- The use of SRM supported BERT and MPSM onboard BERT at the same time on the same card is not supported.
- Only one BERT session per line is supported.
- All eight lines on the MPSM can be configured for BERT sessions at the same time.
- The BERT CLI commands are not service dependent.
- The Cisco BERT MIB is supported.
- Line inband loopback codes are supported.
- Remote loopbacks on ports are not supported.
- Sending loopback codes on ports is not supported.
- Port BERT session on 56k ports is not supported.
- BERT sessions can be run only on active MPSM cards.
- The tests patterns supported by the BERT generator/detector are compliant with CCITT/ITU O.150, O.151, O.152, O.153, and O.161 standards.

Table 5-21 describes the onboard BERT commands supported by the MPSM-8T1-CES and MPSM-8E1-CES cards. For more information about these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-21 Onboard BERT Commands Supported on the MPSM-8T1-CES and MPSM-8E1-CES Cards

Command	Purpose
cnfbert	Enter this command to configure a Bit Error Rate Test on a line or port.
startbert	Enter this command to begin the Bit Error Rate Test configured on the specified line or port.
dspbert	Enter this command to view the BERT parameters configured with the **cnfbert** command and to view the status of the current BERT session.
dspbertstats	Enter this command to view statistics for the Bit Error Rate Test configured on the specified line or port. This command can be used to view changing statistics while the Bit Error Rate Test is running or it can be used after testing has stopped to view the total statistics accumulated during the test period.
clrbertstats	Enter this command to clear all statistics that have accumulated during Bit Error Rate Testing on the specified line or port. This command can be used to reset the statistics counters while Bit Error Rate Testing is running or it can be used to reset statistics counters after Bit Error Rate Testing has been stopped.
insbiterror	Use this command to insert single bit errors into the transmitted BERT pattern configured on the specified line or port.

Table 5-21 Onboard BERT Commands Supported on the MPSM-8T1-CES and MPSM-8E1-CES Cards

Command	Purpose
stopbert	Enter this command to stop the Bit Error Rate Test running on the specified line or port.
delbert	Enter this command to clear a Bit Error Rate Testing configuration from a line or port. This command may be used to clear a BERT session that is running or may be used after the BERT session has been stopped.

Managing a BERT Session on the MPSM-8T1E1

To manage a Bit Error Rate Test using the MPSM-8T1E1 onboard BERT feature, perform the following steps:

Step 1 If the far end interface on the attached end-user equipment does not support loopback code detection, log into the attached end-user equipment and place the line under test into loopback mode.

Step 2 Establish a configuration session with the MPSM using a user name with GROUP1 privileges or higher.

Step 3 Enter the **cnfbert** command as follows to configure a BERT session:

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfbert <ifNumber> [-tp <TestPattern>] [-lpbk <loopback>]
[-eir <errorInsertRate>]
```

Table 5-22 lists and describes the parameters for the **cnfbert** command on the MPSM-8T1-CES and MPSM-8E1-CES cards.

Table 5-22 Parameters for the cnfbert Command

Parameter	Description
ifNumber	Specify the interface number to be configured using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0. When you enter the **cnfbert** command with only the interface number specified with no other options selected, the Bit Error Rate Test is configured using the defaults: test pattern 25, no loopback, and no error insertion rate.

Table 5-22 Parameters for the cnfbert Command (continued)

-tp	Test pattern. Default test pattern is 25. • 1 = All Zeros • 2 = All Ones • 3 = Alternate One and Zero • 4 = Double Alternate Ones and Zeroes • 5 = 1 in 4 • 6 = 1 in 8 • 7 = 1 in 16 • 8 = 3 in 24 • 9 = Inband Loop Back Activate • 10 = Inband Loop Back Deactivate • 11 = Three Bit (2^3-1) • 12 = Four Bit (2^4-1) • 13 = Five Bit (2^5-1) • 14 = Six Bit (2^6-1) • 15 = Seven Bit (2^7-1) • 16 = Seven Bit (2^7-1) Fractional T1 Loop Up	• 17 = Seven Bit (2^7-1) Fractional T1 Loop Down • 18 = Nine Bit (2^9-1) • 19 = Ten Bit (2^10-1) • 20 = Eleven Bit (2^11-1) • 21 = Fifteen Bit (2^15-1) • 22 = Seventeen Bit (2^17-1) • 23 = Eighteen Bit (2^18-1) • 24 = Twenty Bit (2^20-1) (Not supported in Cisco MGX Releases 5 and 1.3) • 25 = Twenty Bit (2^20-1) QRSS • 26 = TwentyOne Bit (2^21-1) • 27 = TwentyTwo Bit (2^22-1) • 28 = TwentyThree Bit (2^23-1) • 29 = TwentyFive Bit (2^25-1) • 30 = TwentyEight Bit (2^28-1) • 31 = TwentyNine Bit (2^29-1) • 32 = ThirtyOne Bit (2^31-1)
-lpbk	Loopback Code. • Line Inband = 12 • No Loopback = 15 (Default)	
-eir	Error Insertion Rate. • 1 = No Error (Default) • 2 = 1 in 10 • 3 = 1 in 100 • 4 = 1 in 1,000 • 5 = 1 in 10,000 • 6 = 1 in 100,000 • 7 = 1 in 1,000,000 • 8 = 1 in 10,000,000	

The following example configures a Bit Error Rate Test on an MPSM-8T1-CES card on line 1 using the default parameters:

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfbert 1.0

        Use startbert to start BERT
        Use delbert followed by cnfbert to re-configure BERT parameters

M8850_SF.1.28.MPSM8T1.CES.a >
```

Step 4 Enter the **dspbert** command as follows to view the BERT parameters configured with the **cnfbert** command:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbert <ifNumber>
```

Replace the *ifNumber* parameter with the line and port number configured for the BERT session in the format *line.port*. To specify a line test, enter a port value of zero.

The following example shows the BERT parameters configured in the previous step:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbert 1.0

 Interface Number   : 1.0
 Loopback Code      : No Loopback
 Pattern            : TwoE20MinusOneQRSS
 ErrorInsertRate    : NoError
 Start Date/Time    : Not Started
 Operational Status : Out Of Sync

M8850_SF.1.28.MPSM8T1.CES.a >
```

Step 5 Enter the **startbert** command as follows to start a Bit Error Rate Test:

```
M8850_SF.1.28.MPSM8T1.CES.a > startbert <ifNumber>
```

Replace the *ifNumber* parameter with the line and port number configured for the BERT session in the format *line.port*. To specify a line test, enter a port value of zero.

The following example starts a BERT session:

```
M8850_SF.1.28.MPSM8T1.CES.a > startbert 1.0

M8850_SF.1.28.MPSM8T1.CES.a >
```

Step 6 Enter the **dspbert** command to verify the start of the Bit Error Rate Test:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbert 1.0

 Interface Number   : 1.0
 Loopback Code      : No Loopback
 Pattern            : TwoE20MinusOneQRSS
 ErrorInsertRate    : NoError
 Start Date/Time    : 03/17/2004 04:55:52
 Operational Status : In Sync


M8850_SF.1.28.MPSM8T1.CES.a >
```

In this example, an Operational Status of *In Sync* indicates that the test has been successfully started.

Step 7 Enter the **dspbertstats** command as follows to view statistics from a Bit Error Rate Test in progress:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbertstats <ifNumber>
```

Replace the *ifNumber* parameter with the line and port number configured for the BERT session in the format *line.port*. To specify a line test, enter a port value of zero.

The following example displays statistics from a BERT session in progress:

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbertstats 1.0

 Interface Number          : 1.0
 Rx Bit Count              : 33793765
 Rx Bit Error Count        : 83
 Sync Loss Transition      : 0
 Pattern Loss Count (secs) : 0


M8850_SF.1.28.MPSM8T1.CES.a >
```

The **dspbertstats** command may also be used to view the total statistics gathered during a BERT session after the test has been stopped.

To clear the incrementing statistics during a BERT session or after the BERT session has been stopped, use the **clrbertstats** command to reset the statistics counters.

Step 8 Enter the **insbiterror** command as follows to insert single bit errors into an active BERT session:

```
M8850_SF.1.28.MPSM8T1.CES.a > insbiterror <ifNumber>
```

Replace the *ifNumber* parameter with the line and port number configured for the BERT session in the format *line.port*. To specify a line test, enter a port value of zero.

The following example inserts a single bit error into the BERT session in progress:

```
M8850_SF.1.28.MPSM8T1.CES.a > insbiterror 1.0

M8850_SF.1.28.MPSM8T1.CES.a >
```

Step 9 Enter the **stopbert** command as follows to stop a BERT session:

```
M8850_SF.1.28.MPSM8T1.CES.a > stopbert <ifNumber>
```

Replace the *ifNumber* parameter with the line and port number configured for the BERT session in the format *line.port*. To specify a line test, enter a port value of zero.

The following example stops the current BERT session:

```
M8850_SF.1.28.MPSM8T1.CES.a > stopbert 1.0

M8850_SF.1.28.MPSM8T1.CES.a >
```

After a BERT session has been stopped, it may be restarted by using the **startbert** command.

Step 10 Enter the **delbert** command as follows to clear a BERT configuration:

```
M8850_SF.1.28.MPSM8T1.CES.a > delbert <ifNumber>
```

Replace the *ifNumber* parameter with the line and port number configured for the BERT session in the format *line.port*. To specify a line test, enter a port value of zero.

The following example clears the current BERT session configuration:

```
M8850_SF.1.28.MPSM8T1.CES.a > delbert 1.0

M8850_SF.1.28.MPSM8T1.CES.a >
```

To modify the configuration parameters of a BERT session, you must first clear the current BERT configuration with the **delbert** command and then reconfigure the new parameters with the **cnfbert** command.

Managing MPSM Online Diagnostics

The following topics describe MPSM-8T1E1 Online Diagnostics:

- MPSM-8T1E1 Online Diagnostics Features
- Configuring Online Diagnostics on the MPSM-8T1E1

MPSM-8T1E1 Online Diagnostics Features

The MPSM-8T1E1 Online Diagnostics are used to test and monitor the health of the components and data paths on the MPSM card after its successful boot up. These tests are used solely for hardware diagnosis and are not used to detect operational errors.

Online tests are diagnostics performed by the run-time firmware while a card is in an Active or Standby operational state. These tests are limited on the Active card due to the requirements that the tests be non-intrusive and not affect user traffic. More elaborate tests are performed on the Standby card without affecting switch-over time. Note that these tests cannot be configured on the Standby card using CLI commands. The tests have to be pre-configured when the card is in an Active state to run on a card in Standby mode.

Note In Cisco MGX Releases 5 and 1.3, diagnostic tests are supported only on Active cards.

Although alarms, logs, and traps are generated upon the failure of a test, there is no SNMP support for test configuration. All test configuration must be done by means of CLI commands on the MPSM card. Tests may be scheduled to run in the Online Diagnostics test suite or run individually.

The tests are common to all service types configured on the MPSM-8T1E1 card, however NP Utilization tests are not supported on an MPSM card in Frame Relay mode.

Table 5-23 shows the online diagnostics tests available on the MPSM-8T1E1 card.

Table 5-23 MPSM-8T1E1 Online Diagnostics Tests

Test ID	Test Name	Function
1	Boot Checksum	This test verifies the checksum for the boot code in Flash memory.
2	Front card NVRAM Checksum	This test performs a front card NVRAM checksum test.
3	CPU Performance Monitor	This test monitors CPU performance based on the idle time.
4	NP Performance Monitor	This test monitors Network Processor performance based on the idle time. (This test is not supported in Frame Relay mode)
5	SLFP Access	This test accesses diagnostic registers in the SLFP FPGA and performs pattern tests to verify data bus integrity.

Table 5-23 MPSM-8T1E1 Online Diagnostics Tests (continued)

Test ID	Test Name	Function
6	MPCTL Access	This test accesses diagnostic registers in the MPCTL FPGA and performs pattern tests to verify data bus integrity.
7	FRAMER Access	This test accesses diagnostic registers in the FRAMER and performs pattern tests to verify data bus integrity.
8	LDRAM Memory Availability	This test monitors the available DRAM memory.
9	Host Memory Availability	This test monitors the available Host memory.
10	Packet Memory Availability	This test monitors the available Packet memory.
11	Internal Memory Availability	This test monitors the available Internal memory.
12	Parameter Memory Availability	This test monitors the available Parameter memory.
13	Host Memory Access	This test accesses the Host memory and performs diagnostic pattern tests to verify data bus integrity.
14	Packet Memory Access	This test accesses the Packet memory and performs diagnostic pattern tests to verify data bus integrity.
15	Parameter Memory Access	This test accesses the Parameter memory and performs diagnostic pattern tests to verify data bus integrity.
16	MPCTL Error Monitor	This test monitors the error counters for the MPCTL FPGA.
17	NP Error Monitor	This test monitors the error counters for the Network Processor input parameters.
18	NP Health Check	This test monitors the health of the Network Processor.
19	MPCTL Loopback	This test verifies the data path between the CPU and the MPCTL by injecting cells on a diagnostic LCN that the MPCTL will loop back.
20	PXM Data Path Loopback Test	This test verifies the data path between the MPSM and the PXM by injecting cells on a diagnostic LCN that the PXM will loop back.
21	NP TDM Loopback Test	This test verifies the data path between the CPU and the NP TDM port by injecting cells on a diagnostic LCN that the NP will loop back. (This test is not supported on an MPSM card in Active mode)
22	SLFP TDM Loopback Test	This test verifies the data path between the CPU and the SLFP by injecting cells on a diagnostic LCN that the SLFP will loop back. (This test is not supported on an MPSM card in Active mode)
23	Framer Loopback Test	This test verifies the data path between the CPU and the Framer by injecting cells on a diagnostic LCN that the Framer will loop back. (This test is not supported on an MPSM card in Active mode)

Table 5-24 shows the CLI commands used to configure and manage Online Diagnostics on the MPSM-8T1E1 card. For more information on the use of these commands, see Chapter 6, "CESM and MPSM Command Reference."

Table 5-24 MPSM-8T1E1 Online Diagnostics Commands

Command	Purpose
dspdiagtests	Enter this command to view the complete list of available online diagnostic tests configured on the current MPSM card. Using this command with the Test ID number option will give detailed information about a specific online diagnostic test.
cnfdiagtest	Enter this command to modify the parameters of a single diagnostic test that is a member of the online diagnostics test suite. This command may also be used to modify all online diagnostic tests at the same time.
rundiagtest	Enter this command to run an individual online diagnostic test.
dspdiagresults	Enter this command to display the results of the configured diagnostic tests.
clrdiagresults	Enter this command to clear the results of all the configured online diagnostic tests.
pausediag	Enter this command to temporarily stop the scheduled online diagnostic tests.
resumediag	Enter this command to resume the previously paused diagnostic tests.

Configuring Online Diagnostics on the MPSM-8T1E1

To configure Online Diagnostics on the MPSM-8T1E1, perform the following steps:

Step 1 Establish a configuration session with the MPSM using a user name with GROUP1 privileges or higher.

Step 2 Enter the **dspdiagtests** command as follows to view the available online diagnostics tests on the MPSM-8T1E1 card:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspdiagtests

ID Name                           Enable   Role   StartTOD   Period  Iteratns
-- ---------------------------    -------  ------ --------    ------  --------
1  Boot Checksum                   No      Active    NOW        1440  FOREVER
2  Front card NVRAM Checksum       No      Active    NOW        1440  FOREVER
3  CPU Performance Monitor         No      Active    NOW         5    FOREVER
4  NP Performance Monitor          No      Active    NOW         5    FOREVER
5  SLFP Access                     No      Active    NOW         5    FOREVER
6  MPCTL Access                    No      Active    NOW         5    FOREVER
7  FRAMER Access                   No      Active    NOW         5    FOREVER
8  LDRAM Memory Availability       No      Active    NOW         5    FOREVER
9  Host Memory Availability        No      Active    NOW         30   FOREVER
10 Packet Memory Availability      No      Active    NOW         30   FOREVER
11 Internal Memory Availability    No      Active    NOW         30   FOREVER
12 Parameter Memory Availability   No      Active    NOW         30   FOREVER
13 Host Memory Access              No      Active    NOW         1    FOREVER
14 Packet Memory Access            No      Active    NOW         5    FOREVER
15 Parameter Memory Access         No      Active    NOW         5    FOREVER
16 MPCTL Error Monitor             No      Active    NOW         5    FOREVER
17 NP Error Monitor                No      Active    NOW         5    FOREVER
18 NP Health Check                 No      Active    NOW         5    FOREVER
```

```
19 MPCTL Loopback                    No      Active    NOW        1    FOREVER
20 PXM Data Path Loopback Test       No      Active    NOW        1    FOREVER
21 NP TDM Loopback Test              No      Active    NOW        30   FOREVER
22 SLFP TDM Loopback Test            No      Active    NOW        30   FOREVER
23 Framer Loopback Test              No      Active    NOW        30   FOREVER

Online Diagnostic tests RUNNING.

M8250_SJ.1.22.MPSM8T1.CES.a >
```

The output of the **dspdiagtests** commands shows the current configuration and status of all the available tests.

Step 3 Enter the **dspdiagtests** command as follows to view detailed information about a specific online diagnostic test:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspdiagtests <TestId>
```

Replace the *TestId* parameter with the ID number of the test shown in the **dspdiagtests** command display.

The following example shows the status and configuration of test number 10:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspdiagtests 10

Test Name: Packet Memory Availability
Function: Monitors the available Packet memory.
          Input Parameters:
           Threshold for available memory: 0 - 100%
           NP ID: 0 for MPSM-8T1E1, 0/1/2(Both NP) for MPSM-16T1E1
Alarm Raised on Failure: Major
Recovery Action: N.A
Role: Active
Enable: No
StartTOD: NOW
Period: 30
Iterations: FOREVER
Configured Parameters:  2, 0

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Step 4 Enter the **cnfdiagtest** command as follows to modify the default configuration of a specific test or all online diagnostic tests:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfdiagtest <TestId> [<enable|disable>] [-role <role>]
[-startTOD <time>] [-period <period>] [-iterns <iterns>] [-param1 <param>] [-param2
<param>]
```

Table 5-25 lists and describes the parameters for the **cnfdiagtest** command on the MPSM-8T1-CES and MPSM-8E1-CES cards.

Table 5-25 Parameters for the cnfdiagtest Command

Parameter	Description
TestId	Test ID number of the diagnostic test to be modified in the range 1 to 23, or enter *all* to specify all tests. Enter the **dspdiagtests** command to view the diagnostic tests available and the associated test ID numbers. **Note** Only the *enable*|*disable* and -role option may be used with the *all* command option. All other command options are for use with individual diagnostic tests.
enable|*disable*	Enables or disables the diagnostic test on the current card.

Table 5-25 Parameters for the cnfdiagtest Command (continued)

-role	State of the card on which the specified diagnostic test is performed: • Active state = 1 **Note** In Cisco MGX Releases 5 and 1.3, Online Diagnostic tests are supported only on Active cards.
-startTOD	Scheduled start time of the diagnostic test using a 24 hour format (HH:MM). Enter *Now* to execute the test immediately.
-period	Time between successive iterations of the diagnostic test in minutes.
-iterns	Number of times the diagnostic test should be repeated. When the value is specified as -1, the test will continuously execute.
-param1	Parameter 1 for test. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.
-param2	Parameter 2 for test. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.

The following example modifies diagnostic test number 9 to enabled in the active state, to start now, to wait one minute between successive tests, and run only twice:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfdiagtest 9 enable -role 1 -startTOD now -period 1 -iterns 
2

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Step 5 Enter the **rundiagtest** command as follows to run an online diagnostic test on the MPSM-8T1E1 card:

```
M8250_SJ.1.22.MPSM8T1.CES.a > rundiagtest <TestId> [param1] [param2]
```

Table 5-26 lists and describes the parameters for the **rundiagtest** command on the MPSM-8T1-CES and MPSM-8E1-CES cards.

Table 5-26 Parameters for the rundiagtest Command

Parameter	Description
TestId	Test ID number of the diagnostic test to be executed in the range 1 to 23. Enter the **dspdiagtests** command to view the diagnostic tests available and the associated test ID numbers.
param1	Parameter 1 for tests. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.
param2	Parameter 2 for tests. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.

The following example runs online diagnostic test number 9 on the current MPSM-8T1-CES card:

```
M8250_SJ.1.22.MPSM8T1.CES.a > rundiagtest 9 15

Host Memory Availability  PASSED

M8250_SJ.1.22.MPSM8T1.CES.a >
```

To pause a currently running online diagnostic test, enter the **pausediag** command. To resume an online diagnostic test that has been paused, enter the **resumediag** command.

Step 6 Enter the **dspdiagresults** command as follows to view the results of an online diagnostic test:

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspdiagresults

Online Diagnostic tests RUNNING.

ID Name                          Enable    Attempts   FailCnt   Result
-- ----------------------------- -------   --------   -------   -------
1  Boot Checksum                 No           1          0       Pass
2  Front card NVRAM Checksum     No           0          0       N/A
3  CPU Performance Monitor       No           0          0       N/A
4  NP Performance Monitor        No           0          0       N/A
5  SLFP Access                   No           0          0       N/A
6  MPCTL Access                  No           0          0       N/A
7  FRAMER Access                 No           0          0       N/A
8  LDRAM Memory Availability     No           0          0       N/A
9  Host Memory Availability      Yes          16         0       Pass
10 Packet Memory Availability    No           0          0       N/A
11 Internal Memory Availability  No           0          0       N/A
12 Parameter Memory Availability No           0          0       N/A
13 Host Memory Access            No           0          0       N/A
14 Packet Memory Access          No           0          0       N/A
15 Parameter Memory Access       No           0          0       N/A
16 MPCTL Error Monitor           No           0          0       N/A
17 NP Error Monitor              No           0          0       N/A
18 NP Health Check               No           0          0       N/A
19 MPCTL Loopback                No           0          0       N/A
20 PXM Data Path Loopback Test   No           0          0       N/A
21 NP TDM Loopback Test          No           0          0       N/A
22 SLFP TDM Loopback Test        No           0          0       N/A
23 Framer Loopback Test          No           0          0       N/A


M8250_SJ.1.22.MPSM8T1.CES.a >
```

To clear the results from an online diagnostic test, enter the **clrdiagresults** command.

Step 7 Enter the **cnfdiagtests** to stop a test that is continuously running.

Table 5-25 lists and describes the parameters for the **cnfdiagtest** command on the MPSM-8T1-CES and MPSM-8E1-CES cards

The following example stops online diagnostic test number 9:

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfdiagtest 9 disable

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Managing MPSM Core Dumps

The following topics describe managing MPSM core dumps:

- Overview of MPSM Core Dumps
- Managing Core Dump Files
- Aborting Core Dumps
- Displaying Core Command Options
- Displaying Core Dump Settings

- Displaying the Core Dump Mask
- Configuring Core Dump Settings
- Hot-Dumping the Core

Overview of MPSM Core Dumps

The **core** command is used to manage core memory dumps on the MPSM-8T1E1 card. This command is supported on PXM1, PXM1E, and PXM45 platforms.

Core dumps are used to debug hardware and software errors. Certain software errors such as memory corruption, memory leaks, and resource leaks are difficult to catch during product testing. Other types of errors may manifest only after prolonged usage in a production network. When such errors occur, it is imperative to capture the software image in memory and the hardware configurations so that debugging can be performed.

Core memory dumps on the MPSM card are supported on MPSM cards in redundancy groups and on non-redundant MPSM cards.

When a software or hardware error condition requiring a reset occurs, the MPSM card will be reset after writing the reset reason to the NVRAM. The boot code will then examine the reset reason. If the reset reason is part of the core dump mask, a core dump to the PXM hard disk is performed by means of the cell bus. This type of core dump is known as a cold-dump. The goal is to capture the dump without affecting the tasks running on the PXM card or other service modules.

Note You must set the PXM **core red-policy** command to *enable* to support cold-dumps from a non-redundant MPSM card.

The MPSM card also supports a hot-dump or run-time snapshot of the current Host CPU memory, hardware configuration, and Winpath memory. Only one hot-dump of the core memory can take place at a time on an MPSM card.

The PXM processor card will allow multiple cold-dumps and hot-dumps of the MPSM core memory from different MPSM cards to take place at the same time on the switch.

Managing Core Dump Files

Cold-dump and hot-dump MPSM core dump files are saved in the C:/ directory on the PXM processor card.

Cold-dump files are saved in the format *core_slotNumber.zip*. New cold-dump files from the same slot will overwrite any existing cold-dump files from that same slot.

Hot-dump files are saved in the format *filename.zip* using a user specified filename. Do not use the same filename format used by cold-dump files, otherwise the hot-dump file could be overwritten by a subsequent cold-dump of the core.

Use FTP to transfer the core dump zip files to a work station. Core dump zip files must be sent to Cisco TAC for debugging.

Aborting Core Dumps

Both hot-dumps and cold-dumps of the core memory on the MPSM card may be aborted by using the PXM **core abort-dump** <*slot*> command.

Cold-dumps of the MPSM core memory will also be aborted if any of the following events occur:

- The MPSM card is reset during a cold-dump in progress.
- The PXM **switchcc** command is performed on the active PXM card during a cold-dump in progress on the MPSM card.
- The cold-dump takes longer than the core dump time-out period in effect on the PXM card.

Hot-dumps of the MPSM core memory will also be aborted if any of the following events occur:

- The MPSM card is reset during a hot-dump in progress.
- The PXM **switchcc** command is performed on the active PXM card during a hot-dump in progress on the MPSM card.
- The PXM **switchredcd** command is performed during a hot-dump in progress on the active MPSM card in a redundancy group.
- On the PXM1 card, if there is less than 20MB of available space on the PXM1 hard drive.
- The hot-dump takes longer than the core dump time-out period in effect on the PXM card.

Note To display and set the time-out period for cold and hot dumps of core memory, use the PXM **core time-out** command to view the time-out period in effect on the PXM card and use the PXM **core time-out** <*timeInSecs*> command to change the time-out setting on the PXM card.

Displaying Core Command Options

Enter the **core** command with a question mark to list the optional parameters for the **core** command as shown in the following example:

```
M8850_SF.1.28.MPSM8T1.CES.a > core ?

core command syntax:

core                         ( show settings and saved images )
core ?                       ( print usage information        )
core mask                    ( show autodump conditions       )
core mask default            ( set default coredump mask      )
core mask <hex-mask>         ( select autodump conditions     )
core enable                  ( enable auto coredump           )
core disable                 ( disable auto coredump          )

core hot-dump <filename.zip> ( take hot dump and save to file )

M8850_SF.1.28.MPSM8T1.CES.a >
```

Displaying Core Dump Settings

Enter the **core** command without any arguments to display the current core dump settings on the MPSM card. The following example shows the core dump settings on an MPSM card that has automatic core dumping enabled and where the saved core images are located:

```
M8850_SF.1.28.MPSM8T1.CES.a > core
Automatic core dumping is enabled for this slot.

Saved core images are on PXM's hard disk (C:/).

M8850_SF.1.28.MPSM8T1.CES.a >
```

Displaying the Core Dump Mask

The core dump mask is the sum of the hexadecimal numbers associated with reset reasons that are enabled to trigger a core dump. Most reasons for a card reset can be enabled to trigger a core dump. If the reset reason in ON, the associated hexadecimal number is an element of the mask.

Enter the **core mask** command to display the current core dump mask and the error conditions for which a core dump is enabled as shown in the following example:

```
M8850_SF.1.28.MPSM8T1.CES.a > core mask
Automatic core dumping is enabled for this slot.
The current core mask is 0x273ae.

OFF 00001 not used (can't be turned ON)
ON  00002 DRAM Parity Error
ON  00004 WatchDog Timeout Reset
ON  00008 Resource Overflow
OFF 00010 Clear All Configuration (can't be turned ON)
ON  00020 Missing Task
OFF 00040 Reset because of PXM Low Voltage (can't be turned ON)
ON  00080 Reset By Event Log Task
ON  00100 Reset from Shell
ON  00200 Unknown
OFF 00400 Reset from PXM (can't be turned ON)
OFF 00800 Reset System (can't be turned ON)
ON  01000 Switch Core Card
ON  02000 Secondary Cache Error
ON  04000 Software Error Reset
OFF 08000 S/W reset due to upgrade (can't be turned ON)
OFF 10000 Restore All Configuration (can't be turned ON)
ON  20000 Device Driver Error

M8850_SF.1.28.MPSM8T1.CES.a >
```

In this example, the mask is set to the default mask of 0x273ae. To change the mask, see "Changing the Core Dump Mask".

A reason that cannot trigger a core dump is indicated in the preceding example with *can't be turned ON*. A reset reason that *can't be turned ON* removes debugging information from memory and therefore is excluded from being part of the mask.

Configuring Core Dump Settings

The following topics describe the configuration of core dump settings:

- Enabling Automatic Core Dumping
- Disabling Automatic Core Dumping
- Changing the Core Dump Mask
- Restoring the Default Core Dump Mask

Enabling Automatic Core Dumping

Enter the **core enable** command to enable automatic core dumping as shown in the following example:

```
M8850_SF.1.28.MPSM8T1.CES.a > core enable
Automatic core dumping is enabled for this slot.

M8850_SF.1.28.MPSM8T1.CES.a >
```

Disabling Automatic Core Dumping

You may want to disable automatic core dumps for the MPSM card due to the time it takes to write core memory to the PXM hard drive. For example:

- You may have isolated a problem and want to save the time required to write RAM contents to disk.
- The traffic on the MPSM card may be of such high priority that you do not want to dump core memory to disk.
- The MPSM card is a non-redundant service module and the dump time may be a concern.

Note The PXM **core red-policy** [<*enable*|*disable*>] command is used to enable or disable core dumps on non-redundant MPSM cards. Setting the **core red-policy** command to *disable* does not disable hot-dumps of the core memory.

Enter the **core disable** command to disable automatic core dumping as shown in the following example:

```
M8850_SF.1.28.MPSM8T1.CES.a > core disable
Automatic core dumping is ** disabled ** for this slot.

M8850_SF.1.28.MPSM8T1.CES.a >
```

The use of this command is similar to setting the mask to 0x0.

Changing the Core Dump Mask

Enter the **core mask** command as follows to change the core dump mask:

```
M8850_SF.1.28.MPSM8T1.CES.a > core mask <hex-mask>
```

Replace the <*hex-mask*> parameter with the sum of all the hexadecimal values for the reset reasons that you want to have in the new core dump mask.

In the following example, the default core dump mask of 0x273ae has been changed to 0x263ac:

```
M8850_SF.1.28.MPSM8T1.CES.a > core mask 263ac
Automatic core dumping is enabled for this slot.
The current core mask is 0x263ac.

OFF 00001 not used (can't be turned ON)
OFF 00002 DRAM Parity Error
ON  00004 WatchDog Timeout Reset
```

```
ON  00008 Resource Overflow
OFF 00010 Clear All Configuration (can't be turned ON)
ON  00020 Missing Task
OFF 00040 Reset because of PXM Low Voltage (can't be turned ON)
ON  00080 Reset By Event Log Task
ON  00100 Reset from Shell
ON  00200 Unknown
OFF 00400 Reset from PXM (can't be turned ON)
OFF 00800 Reset System (can't be turned ON)
OFF 01000 Switch Core Card
ON  02000 Secondary Cache Error
ON  04000 Software Error Reset
OFF 08000 S/W reset due to upgrade (can't be turned ON)
OFF 10000 Restore All Configuration (can't be turned ON)
ON  20000 Device Driver Error

M8850_SF.1.28.MPSM8T1.CES.a >
```

Note When automatic core dumping is disabled, changing the mask will not have any effect until the core dump feature is enabled using the **core enable** command.

Restoring the Default Core Dump Mask

Enter the **core mask default** command to restore the default core dump mask as shown in the following example:

```
M8850_SF.1.28.MPSM8T1.CES.a > core mask default
Automatic core dumping is enabled for this slot.
The current core mask is 0x273ae.

OFF 00001 not used (can't be turned ON)
ON  00002 DRAM Parity Error
ON  00004 WatchDog Timeout Reset
ON  00008 Resource Overflow
OFF 00010 Clear All Configuration (can't be turned ON)
ON  00020 Missing Task
OFF 00040 Reset because of PXM Low Voltage (can't be turned ON)
ON  00080 Reset By Event Log Task
ON  00100 Reset from Shell
ON  00200 Unknown
OFF 00400 Reset from PXM (can't be turned ON)
OFF 00800 Reset System (can't be turned ON)
ON  01000 Switch Core Card
ON  02000 Secondary Cache Error
ON  04000 Software Error Reset
OFF 08000 S/W reset due to upgrade (can't be turned ON)
OFF 10000 Restore All Configuration (can't be turned ON)
ON  20000 Device Driver Error

M8850_SF.1.28.MPSM8T1.CES.a >
```

If you add all of the reset reasons that are ON in the default mask, the sum is the hexadecimal number 0x273ae.

Hot-Dumping the Core

A hot-dump of the core directs the boot code to save memory but not to reset the card. Because the memory-read during a hot-dump occurs while other tasks are running and modifying the memory, data structures may not be accurate or consistent in a hot-dump. The hot-dump is the only memory dump during which traffic continues to flow. Only one hot-dump of the core memory can take place at a time on an MPSM card.

Enter the **core hot-dump** command as follows to initiate a hot-dump of the core:

```
M8850_SF.1.28.MPSM8T1.CES.a > core hot-dump <filename.zip>
```

Replace the <*filename.zip*> parameter with a user specified filename with the *.zip* file extension. Specify a filename not already in use with each hot-dump performed, otherwise the **core hot-dump** command will fail.

Note When specifying the filename for a hot-dump of the core, do not use the same filename format as used by cold-dump files. This could cause the hot-dump file to be overwritten by a subsequent cold-dump of the core.

In the following example, a hot-dump of the core has been initiated and saved to a user specified file with the name of *dump28.zip*:

```
M8850_SF.1.28.MPSM8T1.CES.a > core hot-dump dump28.zip
Do you want to proceed (Yes/No)? y

Creating dump28.zip
...........................................................................................
..............
Creating WINPATHZIP
........................
Done.

M8850_SF.1.28.MPSM8T1.CES.a >
```

Note A hot-dump and cold-dump of the core memory on the MPSM card may be aborted by using the PXM **core abort-dump** <*slot*> command.

Managing Line Conditioning

The following topics describe line conditioning:

- Overview of Line Conditioning
- Line Conditioning Feature Limitations
- Configuring Line Conditioning on CESM and MPSM Cards

Overview of Line Conditioning

Line conditioning is supported on connections configured on structured Circuit Emulation ports. This is helpful in applications where T1 to E1 conversion is required.

Line conditioning is the ability to pass a local CESM or MPSM line alarm across the ATM core network to the remote end, causing the remote CESM or MPSM line to go into alarm. Prior to having this feature, when a local T1 line went into alarm, the far end E1 line stayed up. The local line failure at one end of the T1 or E1 line was not propagated to the far end. (T1 to T1 and E1 to E1 connections do not have this problem because they are end-to-end bit transparent paths, and thus pass line side AIS signals transparently from end-to-end without problems.)

When line conditioning is enabled on a channel in a T1 to E1 configuration, the following events occur during a line fault on either side of the connection:

- The local CESM or MPSM line enters the alarm state as a result of a line fault.
- The local CESM or MPSM generates channel AIS signals towards the remote CESM or MPSM card.
- The alarm task on the remote CESM or MPSM card monitors channel alarm events and if incoming channel AIS signals are detected, it starts generating an unframed all ones AIS signal on the line associated with the channel in alarm, thus putting the remote line in alarm.
- The above steps occur in the T1 to E1 and E1 to T1 directions independently.

When line conditioning is disabled on a channel, unframed AIS signals are not sent on the line associated with the channel when the channel receives AIS signals from the remote end indicating a remote line failure. Unframed AIS signal generation on a line also ceases if the channel stops receiving AIS signals.

Line conditioning is supported on the MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, and CESM-8E1 cards.

Table 5-27 shows the CLI commands used to configure and manage line conditioning. For more information on the use of these commands, see Chapter 6, "FRSM and MPSM Command Reference."

Table 5-27 Line Conditioning Commands

Command	Purpose
dspchan	Enter this command to display if line conditioning is enabled or disabled for a specific channel. The line conditioning state is displayed at the *ChanLineConditionState* parameter.
dspcon	Enter this command to display if line conditioning is enabled or disabled for a specific connection. The line conditioning state is displayed at the *ChanLineConditionState* parameter.
xcnfchan	Enter this command to enable or disable line conditioning through use of the -*linecond* option.
xcnfcon	Enter this command to enable or disable line conditioning through use of the -*linecond* option.
xdspchan	Enter this command to display if line conditioning is enabled or disabled for a specific channel. The line conditioning state is displayed at the *ChanLineConditionState* parameter.

Line Conditioning Feature Limitations

The following limitations are present with the line conditioning feature:

- Line conditioning is not configurable from CWM and must be done using CLI commands.
- The channel parameter is not available in the configuration upload file.
- Normally, whenever any line alarm is received on a line, including RAI, the port and channels provisioned on that line go into major alarm, and all channels on that line send OAM AIS cells towards the network. When an AIS signal is generated on a line towards the CPE, the CPE will in turn send a RAI alarm back towards the service module. When the line conditioning feature is enabled, AIS OAM will not be sent towards the network if the RAI received from the CPE is a result of the AIS sent to the CPE as a result of this feature. Since we already know the channel is alarm at both ends, sending OAM AIS is not necessary and will avoid channel alarm loops where the channel remains in alarm after removing the failure condition.
- In a configuration where the two ends of a channel have line conditioning enabled and the two ends of the lines have physical loopbacks in place, when one of the physical loopbacks is removed and replaced, the two ends of the lines and the channel will be stuck in alarm. To remove the alarms, add a soft loopback (**addlnloop**) to one line or disable line conditioning on one end of the channel.
- In a configuration where the two ends of a channel have line conditioning enabled and the two ends of the lines are connected to the CPE, when the CPE keeps having an alarm condition and recovers from the alarm condition, this situation may cause the lines to be stuck in alarm, although there is a very low probability this will occur. To remove the alarms, add a soft loopback (**addlnloop**) to one line or disable line conditioning on one end of the channel.

Configuring Line Conditioning on CESM and MPSM Cards

To provision a structured T1 to E1 connection and enable line conditioning on this connection, perform the following steps:

Step 1 Establish a configuration session using a user name with GROUP1 privileges or higher.

Step 2 Enter the **addln** command to bring up the physical lines on the T1 and E1 ends of the configuration.

The following example shows bringing up the line on the T1 side of the configuration:

```
PXM1E_SJ.1.4.CESM.a > addln 4

PXM1E_SJ.1.4.CESM.a > dsplns

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  4.1   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  4.2   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  4.3   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  4.4   RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  4.5   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  4.6   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  4.7   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  4.8   RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim

  LineNumOfValidEntries:8

PXM1E_SJ.1.4.CESM.a >
```

The following example shows bringing up the line on the E1 side of the configuration:

```
M8850_SF.1.30.CESM.a > addln 4

M8850_SF.1.30.CESM.a > dsplns

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  30.1  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim
  30.2  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim
  30.3  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim
  30.4  RJ-48 dsx1E1MF        Ena/dsx1HDB3 G.703 120 ohm LocalTim  No    No
  30.5  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim
  30.6  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim
  30.7  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim
  30.8  RJ-48 dsx1E1MF        Dis/dsx1HDB3 G.703 120 ohm LocalTim

  LineNumOfValidEntries:8

M8850_SF.1.30.CESM.a >
```

For more information on bringing up lines, see “Bringing Up Lines” in Chapter 2, “Preparing CESM and MPSM Lines and Ports for Communications”.

Step 3 Enter the **cnfln** command to modify any line parameters on the T1 and E1 ends of the configuration.

In the following example, the line transmit clock source on the T1 side has been changed to loop timing:

```
PXM1E_SJ.1.4.CESM.a > cnfln 4 2 10 1

PXM1E_SJ.1.4.CESM.a > dspln 4

  LineNum:                  4
  LineConnectorType:        RJ-48
  LineEnable:               Modify
  LineType:                 dsx1ESF
  LineCoding:               dsx1B8ZS
  LineLength:               0-131 ft
  LineXmtClockSource:       LoopTiming
  LineLoopbackCommand:      NoLoop
  LineSendCode:             NoCode
  LineUsedTimeslotsBitMap:  0x0
  LineLoopbackCodeDetection:codeDetectDisabled

  LineNumOfValidEntries:8

PXM1E_SJ.1.4.CESM.a >
```

In the following example, the line transmit clock source on the E1 side has been changed to loop timing:

```
M8850_SF.1.30.CESM.a > cnfln 4 3 9 1 CAS

M8850_SF.1.30.CESM.a > dspln 4

  LineNum:                  4
  LineConnectorType:        RJ-48
  LineEnable:               Modify
  LineType:                 dsx1E1MF
  LineCoding:               dsx1HDB3
  LineLength:               G.703 120 ohm
  LineXmtClockSource:       LoopTiming
  LineLoopbackCommand:      NoLoop
  LineSendCode:             NoCode
  LineUsedTimeslotsBitMap:  0x0
```

```
  LineLoopbackCodeDetection:codeDetectDisabled

  LineNumOfValidEntries:8

M8850_SF.1.30.CESM.a >
```

The examples above show the T1 and E1 sides configured to loop timing. In this clocking configuration, unless the CPE equipment attached to both the T1 and E1 side is traceable back to the same clock source, bit errors are likely to occur. If the CPE equipment attached to both the T1 and E1 side is not traceable back to the same clock source, then an alternative solution is to configure both lines on the T1 and E1 side to use local timing, with one MGX switch clocked to the other MGX switch.

Note Each individual network will have unique clocking architecture requirements and therefore the examples above are not intended to be the only solution for a T1 to E1 clocking solution in a network. These examples serve only as a reminder that it is important to develop a robust clocking plan for a network using CESM and MPSM cards, otherwise dribbling bit errors, frame slips, and other timing issues may be encountered in the network.

For more information on configuring lines, see "Configuring Lines" in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications".

Step 4 Enter the **addport** command to add structured ports on the T1 and E1 ends of the configuration.

The following example adds a structured port on the T1 side of the configuration:

```
PXM1E_SJ.1.4.CESM.a > addport 4 4 1 24 1

PXM1E_SJ.1.4.CESM.a > dspport 4

  SlotNum:                     4
  PortLineNum:                 4
  PortNum:                     4
  PortRowStatus:               Add
  PortNumOfSlots:              24
  PortDs0ConfigBitMap(1stDS0): 0xffffff(1)
  PortSpeed:                   1536kbps
  PortType:                    structured
  PortState:                   Active


PXM1E_SJ.1.4.CESM.a >
```

The following example adds a structured port on the E1 side of the configuration:

```
M8850_SF.1.30.CESM.a > addport 4 4 2 24 1

M8850_SF.1.30.CESM.a > dspport 4

  SlotNum:                     30
  PortLineNum:                 4
  PortNum:                     4
  PortRowStatus:               Add
  PortNumOfSlots:              24
  PortDs0ConfigBitMap(1stDS0): 0x3fefffe(2)
  PortSpeed:                   1536kbps
  PortType:                    structured
  PortState:                   Active


M8850_SF.1.30.CESM.a >
```

For more information on adding ports, see "Adding Circuit Emulation Ports" in Chapter 2, "Preparing CESM and MPSM Lines and Ports for Communications".

Step 5 Enter the **addcon** command to add a connection between the T1 and E1 sides of the configuration.

In this step we are using the example of adding an SPVC between the T1 and E1 ports.

The following example adds the slave side of an SPVC to the E1 side of the configuration:

```
M8850_SF.1.30.CESM.a > addcon 4

Local Connection ID is :47009181000000000164444b6100000107f30400.30.38

M8850_SF.1.30.CESM.a >
```

The following example add the master side of an SPVC to the T1 side of the configuration:

```
PXM1E_SJ.1.4.CESM.a > addcon 4 -master 1 -rmc
47009181000000000164444b6100000107f30400.30.38

PXM1E_SJ.1.4.CESM.a >
```

After adding the master side of the SPVC, enter the **dspcons** command to verify that the SPVC has been added successfully and is not in alarm:

```
PXM1E_SJ.1.4.CESM.a >dspcons

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0038 004.04.038   stru M   Synch 4096   01000 00384 02500 Up    OK

  Number of channels:   4

  ChanNumNextAvailable: 39

PXM1E_SJ.1.4.CESM.a >
```

Using the **tstcon** command from both sides of the connection also verifies the successful addition of the SPVC connection.

For more information on adding SPVC connections, see "Configuring SPVCs on CESM and MPSM Cards" in Chapter 3, "Provisioning SPVCs (PXM1E/PXM45) on CESM and MPSM Cards".

Note Line conditioning is also supported on PVCs. For information on adding PVC connections, see "Configuring PVCs on CESM and MPSM Cards" in Chapter 4, "Provisioning PVCs (PXM1) on CESM and MPSM Cards".

Step 6 Enter the **xcnfchan** or **xcnfcon** command to enable line conditioning on the connection added between the T1 and E1 sides of the configuration.

Line conditioning must be enabled on both sides of the connection to fully condition the connection provisioned on the structured T1 and E1 ports.

The following example enables line conditioning on the T1 side using the **xcnfchan** command:

```
PXM1E_SJ.1.4.CESM.a > xcnfchan -chn 38 -en 3 -linecond 1

PXM1E_SJ.1.4.CESM.a >
```

The following example enables line conditioning on the E1 side using the **xcnfcon** command:

```
M8850_SF.1.30.CESM.a > xcnfcon -chn 38 -en 3 -linecond 1

M8850_SF.1.30.CESM.a >
```

For more information on using the **xcnfchan** and **xcnfcon** commands, see Chapter 6, "CESM and MPSM Command Reference".

Step 7 Enter the **dspchan**, **dspcon**, or **xdspchan** command to verify that line conditioning has been enabled on a connection.

The following example displays line conditioning enabled on the T1 side of the connection. The line conditioning state is displayed at the *ChanLineConditionState* parameter:

```
PXM1E_SJ.1.4.CESM.a > dspchan 38

  -------------------------------------------
  ChanNum:  38          RowStatus:Mod
  AdmnState:Up          ChanState:Ok
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO         NO         NO         NO
  -------------------------------------------

  ChanNum:                  38
  ChanRowStatus:            Mod
  ConnAdminStatus:          Up
  ChanLineNum:              4
  ChanMapVpi:               4
  ChanMapVci:               38
  ChanCBRService:           struct
  ChanClockMode:            Synchronous
  ChanCAS:                  Basic
  ChanPartialFill:          47
  ChanMaxBufSize:           384 bytes
  ChanCDVT:                 1000 micro seconds
  C L I P:                  2500 milliseconds
  ChanLocalRemoteLpbkState:Disabled
  ChanTestType:             TestOff
  ChanTestState:            Passed
  ChanRTDresult:            2 ms
  ChanPortNum                4
  ChanConnType               SPVC
  ISDetType                  DetectionDisabled
  CondData                   255
  CondSignalling             15
  ExtISTrig                  DisableIdleSupression
  ISIntgnPeriod              3 seconds
  ISSignallingCode           0
  OnHookCode                 1
  ChanLocalVpi:             4
  ChanLocalVci:             38
  ChanLocalNSAP:            47009181000000001a53337700000107230400
  ChanRemoteVpi:            30
  ChanRemoteVci:            38
  ChanRemoteNSAP:           4700918100000000164444b6100000107f30400
  ChanMastership:           Master
  ChanVpcFlag:              Vcc
  ChanConnServiceType:      CBR1
  ChanRoutingPriority:      8
  ChanPreferredRouteId:     0
  ChanDirectedRoute:        No
```

```
  ChanMaxCost:              2147483647
  ChanRestrictTrunkType:    No Restriction
  ChanConnPCR:              4096
  ChanConnMCR:              4096
  ChanConnPercentUtil:      100
  Channel Reroute:          False
  ChanLineConditionState:   Enabled

  ChanNumNextAvailable: 39

PXM1E_SJ.1.4.CESM.a >
```

For more information on using the **dspchan**, **dspcon, and xdspchan** commands, see Chapter 6, "CESM and MPSM Command Reference".

CHAPTER 6

CESM and MPSM Command Reference

The preferred tool to configure, monitor, and control a Cisco MGX switch is the Cisco WAN Manager (CWM) application. The command-line interface (CLI) also provides access to the Cisco MGX switches and is highly applicable during initial installation, troubleshooting, and any situation in which low-level control is useful.

This chapter documents the CLI commands that are supported on the Circuit Emulation Service Module (CESM) and the Multi Protocol Service Module (MPSM) cards that are supported by the PXM1, PXM1E, and the PXM45 processor cards in Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 (PXM1), Cisco MGX 8850 (PXM1E/PXM45), and Cisco MGX 8830 switches.

Note In this documentation release not all of the Circuit Emulation service module commands supported on Cisco MGX PXM1-based systems have been documented. Only those PXM1 commands supported on the MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, and CESM-8E1 service modules have been documented and verified. For PXM1 documentation of the CLI commands supported on the CESM-T3E3 service module, refer to the *Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3*, the *Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3*, and the *Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3*.

Note For information on which PXM processor cards support each type of service module, see Table 1-2 in Chapter 1, “Introduction.”

The commands in the tables that follow (Table 6-1 to Table 6-6) are divided by major functional group. Each table shows the complete name of the command and the cards for which the command is valid. These tables do not make a distinction between which PXM processor card supports a particular command.

For information on which of the PXM processor cards a command is supported on, consult the individual pages describing each command. On the individual pages describing each command the following conventions are used in describing which PXM processor card a command is supported on:

- If no distinction is called out between the different PXM processor cards a command may be supported on, then the command is supported on all three of the current PXM processor cards (PXM1, PXM1E, and PXM45).
- If a command is valid only on an individual PXM processor card, then this distinction will be called out and identified.

Examples of usage for the more common commands appear in the configuration chapters of this manual.

The privilege levels of the CESM and MPSM commands can be found on the individual pages describing each command, or they can be found at the CLI by using the **help** or the **?** command. Only those commands available at the user's login privilege level and below will be seen on the CLI and available for use by the user.

For information about navigating the command-line interface, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Tip If you are viewing this material in a book- or chapter-length PDF file, you can click on any command in the following tables to link to the description for that command. You can also click on commands listed in the "Related Commands" sections to link to command descriptions.

Table 6-1 CESM and MPSM Session Management Commands

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
?	X	X	X
clear	X	X	X
clrscrn	X	X	X
cls	X	X	X
Help	X	X	X
myid	X	X	X
setcmdc	X		
setpagemode	X	X	X

Table 6-2 CESM and MPSM Card Management Commands

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
chkflash	X	X	X
clrcderrs	X	X	X
clrdiagresults	X		
clrmsgcnt	X	X	X
clrslftst		X	X
clrtaskinfo	X	X	X
cnfcdparms	X	X	X
cnfdiagtest	X		
cnfprfparam	X		
cnfslftst		X	X
core	X		
dspcd	X	X	X
dspcderrs	X	X	X

Table 6-2 CESM and MPSM Card Management Commands (continued)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
dspcdparms	X	X	X
dspdiagresults	X		
dspdiagtests	X		
dspfeature	X	X	X
dspliccd	X		
dspmsgcnt	X	X	X
dspprfhist	X		
dspslftst		X	X
dspslftsttbl		X	X
dspstatparms	X	X	X
dsptaskinfo	X	X	X
dsptotals	X	X	X
i	X	X	X
memShow	X	X	X
movelic	X		
pausediag	X		
resumediag	X		
rundiagtest	X		
runslftstno		X	X
version	X	X	X

Table 6-3 CESM and MPSM Line Management Commands

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
addln	X	X	X
addlnloop	X	X	X
clralm	X	X	X
clralmcnt	X	X	X
clralmcnts	X	X	X
clralms	X	X	X
clrbertstats	X		
clrds1stats	X	X	X
cnfbert	X		
cnfln	X	X	X
cnflnloop	X		

Table 6-3 CESM and MPSM Line Management Commands (continued)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
delbert	X		
delln	X	X	X
dellnloop	X	X	X
dspalm	X	X	X
dspalmcnf	X	X	X
dspalmcnt	X	X	X
dspalms	X	X	X
dspbert	X		
dspbertstats	X		
dspds1stats	X	X	X
dspln	X	X	X
dsplns	X	X	X
dsptotals	X	X	X
insbiterror	X		
startbert	X		
stopbert	X		
xcnfalm	X	X	X
xcnfalmcnt	X	X	X
xcnfln	X	X	X
xdspln	X	X	X
xdsplns	X	X	X

Table 6-4 CESM and MPSM Port Management Commands

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
addport	X	X	X
clrbertstats	X		
cnfbert	X		
delbert	X		
delport	X	X	X
delports	X	X	X
dspbert	X		
dspbertstats	X		
dspport	X	X	X
dspports	X	X	X

Table 6-4 CESM and MPSM Port Management Commands (continued)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
dsptotals	X	X	X
insbiterror	X		
startbert	X		
stopbert	X		
xcnfport	X	X	X
xdspport	X	X	X
xdspports	X	X	X

Table 6-5 CESM and MPSM Resource Partition Management Commands

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
addcdrscprtn	X	X	X
addrscprtn	X	X	X
cnfcdprtntype	X	X	X
cnfcdrscprtn	X	X	X
cnfportrscprtn	X	X	X
cnfrscprtn	X	X	X
delcdrscprtn	X	X	X
delrscprtn	X	X	X
dspcdprtntype	X	X	X
dspcdrscprtn	X	X	X
dspportrscprtn	X	X	X
dsprscprtn	X	X	X
xcnfcdprtntype	X	X	X
xcnfcdrscprtn	X	X	X
xcnfrscprtn	X	X	X

Table 6-6 CESM and MPSM Connection Management Commands

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
addchan	X	X	X
addchanloop	X		
addcon	X	X	X
addconCDVT	X	X	X
addspvc	X	X	X

Table 6-6 CESM and MPSM Connection Management Commands (continued)

Command	MPSM-8T1-CES MPSM-8E1-CES	CESM-8T1/B CESM-8T1	CESM-8E1
clrchancnt	X	X	X
clrchancnts	X	X	X
clrsarcnt	X	X	X
clrsarcnts	X	X	X
cnfchan		X	X
cnfcon	X	X	X
cnfswparms	X	X	X
delchan	X	X	X
delchanloop	X		
delchans	X	X	X
delcon	X	X	X
dncon	X	X	X
dspchan	X	X	X
dspchancnt	X	X	X
dspchans	X	X	X
dspcon	X	X	X
dspcons	X	X	X
dsplcn	X	X	X
dspsarcnt	X	X	X
dspsarcnts	X	X	X
dsptotals	X	X	X
rrtcon	X	X	X
tstchan	X	X	X
tstcon	X	X	X
tstdelay	X	X	X
upcon	X	X	X
xclrchancnt	X	X	X
xcnfchan	X	X	X
xcnfcon	X	X	X
xdspchan	X	X	X
xdspchancnt	X	X	X
xdspchans	X	X	X

?

Help—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **?** command to display a list of the commands supported on the CESM and MPSM card.

Syntax

?

Syntax Description

None

Related Commands

Help

Attributes

Log: No	State: Any	Privilege: Any User

Example

Command list for the current card.

```
PXM1E_SJ.1.20.CESM.a > ?

Command              Logging  State   Priority
-------------------- -------  ------  ------------------------
?                    No       Any     Any User
Help                 No       Any     Any User
addcon               Yes      Active  Group 2
addconCDVT           Yes      Active  Group 2
addln                Yes      Active  Group 1
addlnloop            Yes      Active  Service Group (-1)
addport              Yes      Active  Group 1
addrscprtn           No       Any     Strata Group (-2)
addspvc              Yes      Active  Group 2
chkflash             No       Any     Strata Group (-2)
clear                No       Any     Any User
clralm               No       Any     Group 5
clralmcnt            No       Any     Group 5
clralmcnts           No       Any     Group 5
clralms              No       Any     Group 5
clrcderrs            No       Any     Super Group (0)
clrchancnt           No       Any     Group 5
clrchancnts          No       Any     Group 3
clrds1stats          No       Any     Group 5
clrmsgcnt            No       Any     Group 5

Type <CR> to continue, Q<CR> to stop:
```

addcdrscprtn

Add Card Resource Partition (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addcdrscprtn** command to add a card-level resource partition to the current CESM or MPSM card.

Syntax

addcdrscprtn <*controller*> <*numOfLcnAvail*>

Syntax Description

controller	Controller type for the resource partition. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
numOfLcnAvail	Number of LCNs (connections) available for the resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

Related Commands

cnfcdrscprtn, delcdrscprtn, dspcdrscprtn, xcnfcdrscprtn

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example

Add to the current MPSM card a resource partition that uses a TAG (MPLS) controller with 100 LCNs (connections) available.

```
M8250_SJ.1.22.MPSM8T1.CES.a > addcdrscprtn 3 100

M8250_SJ.1.22.MPSM8T1.CES.a >
```

addchan

Add Channel (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addchan** command to add a Permanent Virtual Connection (PVC) to a port on the current CESM or MPSM card.

Note This command is not supported in Cisco MGX Release 1.3.

Syntax

addchan <*chan_num*> <*port_num*> <*sig_type*> <*partial_fill*> <*cond_data*> <*cond_signalling*>

[<*mastership*>] [<*locnsap*>] [<*rmtvpi*>] [<*rmtvci*>] [<*rmtnsap*>]

Syntax Description

chan	Enter the channel number of the connection you want to add. The **dspchans** command reports shows the channel number for each configured connection. On the PXM1 platform, the channel number is found in the *ChNum* column. • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279
port_num	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
sig_type	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • Conditioned E1 CAS = 6 • 1x64 Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.

partial_fill	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47. • Structured E1 range = 20 to 47. • Unstructured T1/E1 range = 33 to 47. **Note** For structured connections other than Basic and 1x64 Basic without AAL1 Pointer, the partial fill value should be greater than the number of DS0s assigned to port + 1.
cond_data	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255
cond_signalling	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.
mastership	Mastership role of connection. Select from the following options: • 1 = Master • 2 = Slave (default) • 3 = Unknown (MPSM-8T1/E1-CES on PXM1 only)
locnsap	Local NSAP address. The local NSAP is a 20 byte hex number.
rmtvpi	Remote virtual path identifier (VPI). • MPSM-8T1-CES, MPSM-8E1-CES range: 1-4095 • CESM-8T1/B, CESM-8T1, CESM-8E1 range: 1–65535
rmtvci	Remote virtual channel identifier (VCI) value. Range is 1–65535
rmtnsap	Remote NSAP address. The local NSAP is a 20 byte hex number.

Related Commands

addcon, addconCDVT, cnfchan, delchan, **dspchan**, **dspchans, xcnfchan**

Attributes

Log: Yes	State: Active	Privilege: Group 1

addchanloop

Add a Channel Loopback—MPSM-8T1-CES, MPSM-8E1-CES

Use the **addchanloop** command to configure a channel loopback to the current MPSM card. This command causes the channel to loop at the segmentation and reassembly (SAR) stage. For additional information on loopbacks that the MPSM card supports, see Chapter 5, “Managing CESM and MPSM Cards.”

Tip To view the loopback status of a connection, use the **dspcon** command and look for the line labeled *ChanLocalRemoteLpbkState.*

Syntax

addchanloop <*chan number*>

Syntax Description

chan number	Enter the channel number as it appears in the output of the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

delchanloop, dspchans, dspcons, tstchan, tstcon, **tstdelay, xcnfchan, xcnfcon**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Add a channel loopback to channel number 35 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > addchanloop 35

M8850_SF.1.28.MPSM8T1.CES.a >
```

addcon

Add Connection—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addcon** command to configure a Soft Permanent Virtual Circuit (SPVC) or a Permanent Virtual Circuit (PVC) on a port on the current CESM or MPSM card. SPVCs are supported on the PXM1E/PXM45 platform, and PVCs are supported on the PXM1 platform.

When you add a connection, the software checks the configuration at the remote end to be sure the remote connection configuration is compatible. If the local and remote configuration parameters are not compatible, the connection is not added.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1E, PXM45

addcon <*port_num*> [-master <*MasterShip*>] [-rmc <*RemoteConnId*>] [-pf <*PartialFill*>]

[-condat <*ConditionalData*>] [-condsig <*ConditionalSigCode*>] [-cdv <*CDVT*>]

[-cas <*SignallingType*>] [-clip <*CellLossIntegPeriod*>] [-maxbuf <*MaximumBufferSize*>]

[-clkmode <*ClockMode*>] [-contp <*ControllerType*>] [-rtngprio <*RoutingPriority*>]

[-prefrte <*PreferredRouteID*>] [-directrte <*DirectedRoute*>] [-maxcost <*MaxCost*>]

[-type <*RestrictedType*>] [-cos <*connServiceType*>]

Note

- If the **addcon** command fails on the PXM1E or PXM45 platform and displays the "Failed to update disk" message, it could be that the PNNI controller has not been added on the PXM1E or PXM45 card. For information on adding the PNNI controller, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*.
- If the **addcon** command fails on the PXM1E or PXM45 platform and displays the "InvalidTrafficParm: check conformance or local/remote param mismatch" message, it could be that the local connection parameters on the slave/master endpoint do not match the remote connection parameters on the master/slave endpoint. To successfully add a connection both the local and remote connection parameters must match.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1

addcon <*port_num*> <*sig_type*> <*partial_fill*> <*cond_data*> <*cond_signalling*>

[<*controller_type*> [<*mastership*> [<*remoteConnID*>]]]

Syntax Description

port_num	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
-master, *mastership*	Mastership role of connection. Select from the following options: • 1 = Master • 2 = Slave (default) • 3 = Unknown (MPSM-8T1/E1-CES on PXM1 only)
-rmc, *remoteConnID*	Remote connection ID. This option is used when defining the master end of a connection. After issuing the **addcon** command to create the slave side of a double-ended connection, use the generated slave connection ID with this option. • On PXM1E, PXM45 platforms the format is: – *RemoteNsapAddress.VPI.VCI*. • On PXM1 platforms the format can be one of the following: – *NodeName.SlotNo.PortNo.0.0* for CES end point – *NodeName.SlotNo.PortNo.VPI.VCI* for ATM end point (Use a value of 0 when *SlotNo* = PXM) **Tip** You can view the address components for a slave or master connection using the **dspcon** or **dspchan** command.
-pf, *partial_fill*	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47. • Structured E1 range = 20 to 47. • Unstructured T1/E1 range = 33 to 47. **Note** For structured connections other than Basic and 1x64 Basic without AAL1 Pointer, the partial fill value should be greater than the number of DS0s assigned to port + 1.
-condat, *cond_data*	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255

-condsig, *cond_signalling*	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.
-cdv	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
-cas, *sig_type*	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • CCS = 5 (PXM1E, PXM45 only) • Conditioned E1 CAS = 6 • 1x64 Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.
-clip	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.
-maxbuf	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The size can be automatically computed, or you can enter a specific size in bytes. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)**N* or (CDVT + frames in 2 cells) * *N*} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384**N* • E1 SDT maximum value = 417**N* *N* = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)

-clkmode	Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3
-contp, *controller_type*	The Virtual Switch Interface (VSI) controller type that manages the connection. • On PXM1E, PXM45 platforms: – 1 = PAR – 2 = PNNI (default) – 3 = MPLS • On PXM1 platforms: – 1 = PAR (PVC) (Default) – 2 = PNNI (SPVC)
-rtngprio	Routing priority for this connection. This parameter defines the rerouting derouting priority of the connection. Range is 1 to 15. Default setting is 8.
-prefrte	Preferred Route ID for this connection. The preferred route feature is applicable only to the master end of an SPVC. This option assigns a unique identifier for the preferred route to which this connection is associated. When the route ID is set to 0, the connection is not associated with any preferred routes. Range is 0 to 65,535. Default is 0.
-directrte	Directed Route option. When this option is yes, the associated preferred route is the only permissible route for the connection to take. Should the directed preferred route be unavailable, the connection is failed. When the option is no, the connection is allowed to try another alternate route should the preferred route be unavailable. • 1 = Yes • 2 = No (default)
-maxcost	Maximum end-to-end cost for the connection. The VSI controller uses the maximum cost to determine which network routes are available to the connection. The maximum cost is the calculated sum of the administrative weights (AWs) in both directions on every hop in a selected route. Range is 1 to 2,147,483,647. Default setting is 2147483647.
-type	Trunk restriction option. • 1 = Enable connection routing without trunk restrictions (Default) • 2 = Restrict the connection routing to terrestrial trunks • 3 = Restrict the connection routing to satellite trunks
-cos	Connection service type. • 21 = CBR1 • 31 = CBR2 (Used only for signalling with UNI 3.1 devices) • 32 = CBR3 (Used only for signalling with UNI 3.1 devices)

Related Commands

addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon**, **dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, tstdelay, upcon, dspports, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example: PXM1E, PXM45

Add a connection to port 1 using the default parameters.

```
PXM1E_SJ.1.4.CESM.a > addcon 1

Local Connection ID is : 47009181000000000001a533377000001072301OO.4.35

PXM1E_SJ.1.4.CESM.a >
```

Example: PXM1

Add a slave connection to port 1 on the current MPSM-8T1-CES card using Basic signalling, fully filled ATM cells, a conditional data value of 255 for SDT, and a conditional signalling value of 15.

```
M8250_SJ.1.22.MPSM8T1.CES.a > addcon 1 1 0 255 15

Local Connection Id is : M8250_SJ.22.1.0.0

M8250_SJ.1.22.MPSM8T1.CES.a >
```

addconCDVT

Add Connection with Cell Delay Variation Tolerance—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addconCDVT** command to configure a Soft Permanent Virtual Circuit (SPVC) or a Permanent Virtual Circuit (PVC) on a port on the current CESM or MPSM card. SPVCs are supported on the PXM1E/PXM45 platform, and PVCs are supported on the PXM1 platform.

Syntax

addconCDVT <*port_num*> <*sig_type*> <*partial_fill*> <*cond_data*> <*cond_signalling*> <*CDVT*>

[<*controller_type*> [<*mastership*> [<*RemoteEndConID*>]]]

Note

- If the **addconCDVT** command fails on the PXM1E or PXM45 platform and displays the "Failed to update disk" message, it could be that the PNNI controller has not been added on the PXM1E or PXM45 card. For information on adding the PNNI controller, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5.*
- If the **addconCDVT** command fails on the PXM1E or PXM45 platform and displays the "InvalidTrafficParm: check conformance or local/remote param mismatch" message, it could be that the local connection parameters on the slave/master endpoint do not match the remote connection parameters on the master/slave endpoint. To successfully add a connection both the local and remote connection parameters must match.

Syntax Description

port_num	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

sig_type	Channel associated signalling (CAS) value. • 1 = basic • 2 = E1 CAS • 3 = DS1 superframe CAS • 4 = DS1 extended superframe CAS • 6 = Conditioned E1 CAS • 7 = 1x64 Basic without AAL1 pointer • 8 = DS1 SF CAS MF (available with multiframe option enabled) (Supported only on CESM-8T1/B) • 9 = DS1 ESF CAS MF (available with multiframe option enabled) (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF SF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.
partial_fill	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47. • Structured E1 range = 20 to 47. • Unstructured T1/E1 range = 33 to 47. **Note** For structured connections other than Basic and 1x64 Basic without AAL1 Pointer, the partial fill value should be greater than the number of DS0s assigned to port + 1.
cond_data	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0–255
cond_signalling	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.

CDVT	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
controller_type	The Virtual Switch Interface (VSI) controller type that manages the connection. Select one of the following: • On PXM1E, PXM45 platforms: – 1 = PAR (PVC) – 2 = PNNI (SPVC) (Default) • On PXM1 platforms: – 1 = PAR (PVC) (Default) – 2 = PNNI (SPVC)
mastership	Mastership role of connection. Select from the following options: • 1 = Master • 2 = Slave (default) • 3 = Unknown (MPSM-8T1/E1-CES only)
RemoteEndConID	Remote connection ID. This option is used when defining the master end of a connection. Enter the slave connection ID as it appears after the **addconCDVT** command is issued. • On PXM1E, PXM45 platforms the format is: – *RemoteNsapAddress.VPI.VCI*. • On PXM1 platforms the format can be one of the following: – *NodeName.SlotNo.PortNo.0.0* for CES end point – *NodeName.SlotNo.PortNo.VPI.VCI* for ATM end point (Use a value of 0 when *SlotNo* = PXM) **Tip** You can view the address components for a slave or master connection using the **dspcon** or **dspchan** command.

Related Commands

addcon, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon**, **dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, tstdelay, upcon, dspports, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example: PXM1E, PXM45

The following example creates the slave end of a connection.

```
PXM1E_SJ.1.4.CESM.a > addconCDVT 4 1 0 255 8 12000

Local Connection ID is : 47009181000000000001a5333770000107230400.4.38


PXM1E_SJ.1.4.CESM.a >
```

Example: PXM1

The following example creates the slave end of a connection on the current MPSM-8T1-CES card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > addconCDVT 1 1 0 255 15 2000

Local Connection Id is : M8250_SJ.22.1.0.0

M8250_SJ.1.22.MPSM8T1.CES.a >
```

addln

Add Line—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addln** command to activate a line on a CESM or MPSM card.

Syntax

addln <*line_num*>

Syntax Description

line_num	Enter the line number you want to activate. For a list of the lines available on the current card, enter the **dsplns** command.

Related Commands

cnfln, delln, **dspln, dsplns, xcnfln, xdspln, xdsplns**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Bring up line 8 on a CESM-8T1/B card.

```
PXM1E_SJ.1.20.CESM.a > addln 8

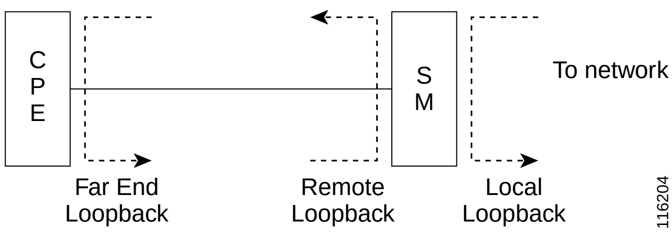
PXM1E_SJ.1.20.CESM.a >
```

addlnloop

Add Line Loop—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addlnloop** command to loop the transmit and receive paths on a line for testing. The type of loopback created is a local line loopback. As shown in Figure 6-1, when a line is in local loopback the CESM or MPSM receives data from the network and loops it back to the network. For additional information on loopbacks supported by the CESM or MPSM card, see Chapter 5, "Managing CESM and MPSM Cards."

Figure 6-1 Local Loopback on the CESM and MPSM



Syntax

addlnloop <*line_num*>

Syntax Description

line_num	Use the **dsplns** command to display the available lines.

Related Commands

cnflnloop, dellnloop, dspln, dsplns, xcnfln, xdspln, xdsplns

Tip Use the **dspln** command to display the loopback status of a line.

Attributes

Log: Yes	State: Active	Privilege: Service Group

Example

Place line 1 on the current MPSM card in local loopback mode.

```
M8850_SF.1.28.MPSM8T1.CES.a > addlnloop 1

M8850_SF.1.28.MPSM8T1.CES.a >
```

addport

Add Port—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **addport** command to add a circuit emulation port to a line.

Syntax

addport <*port_num*> <*line_num*> <*begin_slot*> <*num_slot*> <*port_type*>

Syntax Description

port_num	Port number for the Circuit Emulation service. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
line_num	Line number to which the port definition applies. To display the lines that have been added, enter the **dsplns** command. You cannot add a port to a line unless the Status/Coding column shows that the line is enabled (Ena).
begin_slot	This parameter selects the starting time slot for port communications over the T1 or E1 frame. Valid slot numbers are: • Structured and Unstructured CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–24 • Structured CESM-8E1, MPSM-8E1-CES range: 2–16, 18-32 (CAS line signalling—**cnfln** command. Slot 1 is reserved for framing and slot 17 is reserved for signalling) • Structured CESM-8E1, MPSM-8E1-CES range: 2–32 (CCS line signalling—**cnfln** command. Slot 1 is reserved for framing) • Unstructured CESM-8E1, MPSM-8E1-CES range: 1–32 (Clear E1 [no signalling]—**cnfln** command) **Note** When using an unstructured port with T1 or E1 lines, the time slot range is ignored and all channels are assigned to the port. Once an unstructured port is added to a line, you cannot assign additional ports to that line.

num_slot	This parameter determines the number of consecutive time slots for this port within the T1 or E1 frame. Valid slot numbers are: • Structured and Unstructured CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–24 • Structured CESM-8E1, MPSM-8E1-CES range: 1–30 (CAS signalling—**cnfln** command) • Structured CESM-8E1, MPSM-8E1-CES range: 1–31 (CCS signalling—**cnfln** command) • Unstructured CESM-8E1, MPSM-8E1-CES range: 1–32 (Clear E1 [no signalling]—**cnfln** command) **Note** When using an unstructured port with T1 or E1 lines, the time slot range is ignored and all channels are assigned to the port. Once an unstructured port is added to a line, you cannot assign additional ports to that line.
port_type	Circuit emulation port type: • Structured = 1 • Unstructured = 2 • FramingOnVcDisconnect = 3 (E1 line signalling must be set to Clear E1 (no signalling) —**cnfln** command) **Note** FramingOnVcDisconnect prevents a remote-end CPE from going to loss of frame (LOF) by placing the line in remote loopback when a connection deletion or failure has occurred in the ATM network. When using a FramingOnVcDisconnect port type with T1 or E1 lines, the time slot range is ignored and all channels are assigned to the port.

Related Commands

delport, delports, dsplns, **dspport**, **dspports**, **xdspport, xdspports**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

The following **addport** command example creates an unstructured port, where all time slots are used by the port (the port range must be entered, but it is ignored).

```
PXM1E_SJ.1.3.CESM.a > addport 3 3 1 1 2
```

The next **addport** command example assigns half of the available T1 time slots on line 4 to port 4.

```
PXM1E_SJ.1.4.CESM.a > addport 4 4 1 12 1
```

addrscprtn

Add Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addrscprtn** command to add a port-level resource partition to a specific port.

Syntax: PXM1E, PXM45

addrscprtn <*port_num*> <*cntrlr_type*> <*cntrlr_id*>

Syntax: PXM1

addrscprtn <*port_num*> <*cntrl*> <*pct_bw_ingr*> <*pct_bw_egr*> <*low_lcn*> <*high_lcn*> <*numOfLcnAvail*>

Syntax Description

port_num	Port number associated with the port-level resource partition to be added. You must add a port to a line before you can define a partition for a port. Use the **dspports** command to view the available ports. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
cntrlr_type, *cntrl*	Controller for this resource partition. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
cntrlr_id	Enter a number that will be associated with the controller used by this resource partition. Range is 1 to 255.
pct_bw_ingr	Ingress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for ingress communications. Range is 0 to 100 percent.
pct_bw_egr	Egress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for egress communications. Range is 0 to 100 percent.
low_lcn	Low LCN number available in this port resource partition. Range is 1 to 1000.
high_lcn	High LCN number available in this port resource partition. Range is 1 to 1000.
numOfLcnAvail	Maximum LCNs (connections) available in this port resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES: 1–192 • CESM-8E1, MPSM-8E1-CES: 1–248

Related Commands

cnfportrscprtn, cnfrscprtn, delrscprtn, dspports, **dspportrscprtn**, **dsprscprtn, xcnfrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

Add a PNNI port-level resource partition to port 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > addrscprtn 1 2 2

M8850_SF.1.28.MPSM8T1.CES.a >
```

addspvc

Add SPVC (PXM1E/PXM45 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **addspvc** command to configure one end of an SPVC connection on a port on the current CESM or MPSM card.

Cisco MGX Release 5 supports double-ended and single-ended provisioning. Double-ended provisioning requires that you configure the slave end of the SPVC first, and then configure the master end of the SPVC. You can configure both the slave and the master endpoints for double-ended provisioned connections using the **addspvc** command.

Single-ended provisioning allows you to configure only the master end of the connection. The master end automatically configures the slave end. Cisco MGX Release 5 supports single ended provisioning where the master end point is defined on another device and the CESM or MPSM card hosts the slave connection. Cisco MGX Release 5 does not support single-ended provisioning with a master on the local CESM or MPSM card.

When you add a connection, the software checks the configuration at the remote end to be sure the remote connection configuration is compatible. If the local and remote configuration parameters are not compatible, the connection is not added.

Syntax

addspvc <*port_number*> [-master <*MasterShip*>] [-rmc <*RemoteConnId*>] [-pf <*PartialFill*>]

[-condat <*ConditionalData*>] [-condsig <*ConditionalSigCode*>] [-cdv <*CDVT*>]

[-cas <*SignallingType*>] [-clip <*CellLossIntegPeriod*>] [-maxbuf <*MaximumBufferSize*>]

[-clkmode <*ClockMode*>] [-contp <*ControllerType*>] [-rtngprio <*RoutingPriority*>]

[-prefrte <*PreferredRouteID*>] [-directrte <*DirectedRoute*>] [-maxcost <*MaxCost*>]

[-type <*restrictedType*>] [-cos <*connServiceType*>]

Note

- If the **addspvc** command fails on the PXM1E/PXM45 platform and displays the "Failed to update disk" message, it could be that the PNNI controller has not been added on the PXM1E or PXM45 card. For information on adding the PNNI controller, refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5.*
- If the **addspvc** command fails on the PXM1E or PXM45 platform and displays the "InvalidTrafficParm: check conformance or local/remote param mismatch" message, it could be that the local connection parameters on the slave/master endpoint do not match the remote connection parameters on the master/slave endpoint. To successfully add a connection both the local and remote connection parameters must match.

Syntax Description

port_number	Enter the port number to which you will add the connection. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
-master	Mastership role of connection. Select from the following options: • 1 = master • 2 = slave (default)
-rmc	Remote connection ID. This option is used when defining the master end of a connection. After issuing the **addspvc** command to create the slave side of a double-ended SPVC connection, enter the generated slave connection ID with this option. The format is: *RemoteNsapAddress.VPI.VCI*. **Tip** You can view the address components for a slave or master connection using the **dspcon** or **dspchan** command.
-pf	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47. • Structured E1 range = 20 to 47. • Unstructured T1/E1 range = 33 to 47. **Note** For structured lines, the partial fill value should be greater than the number of DS0s assigned to port.
-condat	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255
-condsig	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.

-cdv	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
-cas	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • CCS = 5 • Conditioned E1 CAS = 6 • Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.
-clip	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.
-maxbuf	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The size can be automatically computed, or you can enter a specific size in bytes. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)**N* or (CDVT + frames in 2 cells) * *N*} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384**N* • E1 SDT maximum value = 417**N* *N* = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)
-clkmode	Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3

-contp	The Virtual Switch Interface (VSI) controller type that manages the connection. Select one of the following: • 1 = PAR • 2 = PNNI (default) • 3 = MPLS
-rtngprio	Routing priority for this connection. This parameter defines the rerouting derouting priority of the connection. Range is 1 to 15. Default setting is 8.
-prefrte	Preferred Route ID for this connection. The preferred route feature is applicable only to the master end of an SPVC. This option assigns a unique identifier for the preferred route to which this connection is associated. When the route ID is set to 0, the connection is not associated with any preferred routes. Range is 0 to 65,535. Default is 0.
-directrte	Directed Route option. When this option is yes, the associated preferred route is the only permissible route for the connection to take. Should the directed preferred route be unavailable, the connection is failed. When the option is no, the connection is allowed to try another alternate route should the preferred route be unavailable. • 1 = Yes • 2 = No (default)
-maxcost	Maximum end-to-end cost for the connection. The VSI controller uses the maximum cost to determine which network routes are available to the connection. The maximum cost is the calculated sum of the administrative weights (AWs) in both directions on every hop in a selected route. Range is 1 to 2,147,483,647. Default setting is 2147483647.
-type	Trunk restriction option. • 1 = Enable connection routing without trunk restrictions (Default) • 2 = Restrict the connection routing to terrestrial trunks • 3 = Restrict the connection routing to satellite trunks
-cos	Connection service type. • 21 = CBR1 • 31 = CBR2 (Used only for signalling with UNI 3.1 devices) • 32 = CBR3 (Used only for signalling with UNI 3.1 devices)

Related Commands

addcon, addconCDVT, cnfchan, cnfcon, delchan, delchans, delcon, **dncon**, **dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, tstdelay, upcon, dspports, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Add an SPVC connection to port 3 using the default parameters.

```
PXM1E_SJ.1.4.CESM.a > addspvc 3

Local Connection ID is : 47009181000000000001a53337700000107230300.4.37


PXM1E_SJ.1.4.CESM.a >
```

chkflash

Check Flash—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **chkflash** command to check the status of the boot software file stored on the flash memory of the current CESM or MPSM card.

Syntax

chkflash

Syntax Description

None

Related Commands

dspcd, **version**

Attributes

Log: No	State: Any	Privilege: Cisco Group

Example

Check the status of the boot software file stored on the flash memory of the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > chkflash
Program length = 264592
Calculated checksum = a9f614f6 stored checksum = a9f614f6
Flash checksum passed

PXM1E_SJ.1.20.CESM.a >
```

Check the status of the boot software file stored on the flash memory of the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > chkflash

[chkflashfn]: Program length = 1477096
Calculated checksum = 0x5a73afb6 stored checksum = 0x5a73afb6

Flash checksum passed

M8850_SF.1.28.MPSM8T1.CES.a >
```

clear

Clear Screen—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clear** command to clear any previous commands from the session screen or window.

Tip To activate this command, change cards to the active PXM1, PXM1E, or PXM45 and use the **smclrscrn** <enable|disable> command. The CESM and MPSM **clrscrn** command does not have this requirement and is the recommended command to use.

Syntax

clear

Syntax Description

None

Related Commands

clrscrn, cls

Attributes

Log: No	State: Any	Privilege: Any User

Example

After you enter the **clear** command, the only text that appears on the screen is the CLI prompt.

```
PXM1E_SJE.1.20.CESM.a >
```

clralm

Clear Alarm—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clralm** command to clear any active alarms on a specific line of the current CESM or MPSM card. The alarms will not clear if the cause for the alarm is still present. Use the **dspalm** and **dspalms** commands to identify any active alarms.

Syntax

clralm -ds1 <*LineNum*>

Syntax Description

LineNum	Line number for the line you want to clear the active alarm. Use **dsplns** to view the available lines.

Related Commands

clralmcnt, clralmcnts, clralms, dspalm, dspalmcnf, dspalmcnt, dspalms, dsplns, xcnfalm

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the active alarms for line 2 on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > clralm -ds1 2

PXM1E_SJ.1.20.CESM.a >
```

clralmcnt

Clear Alarm Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clralmcnt** command to clear the alarm counters for a specific line on the current CESM or MPSM card.

Syntax

clralmcnt -ds1 <*LineNum*>

Syntax Description

LineNum	Line number for the line you want to clear the alarm counters. Use **dsplns** to view the available lines.

Related Commands

clralm, clralmcnts, clralms, dspalm, dspalmcnf, dspalmcnt, dspalms, dsplns, xcnfalm

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the alarm counters for line 2 on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > clralmcnt -ds1 2

PXM1E_SJ.1.20.CESM.a >
```

clralmcnts

Clear Alarm Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clralmcnts** command to clear the alarm counters for all lines on the current CESM or MPSM card.

Syntax

clralmcnts

Syntax Description

None

Related Commands

clralm, clralmcnt, clralms, dspalm, dspalmcnf, dspalmcnt, dspalms, dsplns, xcnfalm

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the alarm counters for all lines on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > clralmcnts

PXM1E_SJ.1.20.CESM.a >
```

clralms

Clear Alarms—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clralms** command to clear active alarms on all lines of the current CESM or MPSM card. The alarms will not clear if the alarm cause is still present.

Syntax

clralms

Syntax Description

None

Related Commands

clralm, clralmcnt, clralmcnts, dspalm, dspalmcnf, dspalmcnt, dspalms, dsplns, xcnfalm

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the active alarms for all lines on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > clralms

PXM1E_SJ.1.20.CESM.a >
```

clrbertstats

Clear Bit Error Rate Testing Statistics—MPSM-8T1-CES, MPSM-8E1-CES

Use the **clrbertstats** command to clear all statistics that have accumulated during Bit Error Rate Testing on the current card. This command can be used to reset the statistics counters while Bit Error Rate Testing is running or it can be used to reset statistics counters after Bit Error Rate Testing has been stopped.

Syntax

clrbertstats <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number on which to clear Bit Error Rate Testing statistics using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

cnfbert, delbert, dspbert, dspbertstats, insbiterror, startbert, stopbert

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Clear the BERT statistics on the MPSM-8T1-CES card in slot 6 and then verify that the statistics have been cleared.

```
M8250_SJ.1.6.MPSM8T1.CES.a > clrbertstats 1.0

M8250_SJ.1.6.MPSM8T1.CES.a >

M8250_SJ.1.6.MPSM8T1.CES.a > dspbertstats 1.0

 Interface Number          : 1.0
 Rx Bit Count              : 0
 Rx Bit Error Count        : 0
 Sync Loss Transition      : 0
 Pattern Loss Count (secs) : 0


M8250_SJ.1.6.MPSM8T1.CES.a >
```

clrcderrs

Clear Hardware/Reset Errors in BRAM—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrcderrs** command to clear all card-related errors on a CESM or MPSM card. No response messages appear on screen.

Syntax

clrcderrs

Syntax Description

None

Related Commands

dspcderrs

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Super Group

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Super Group

Example

Clear all card-related errors on the CESM in slot 20.

```
PXM1E_SJ.1.20.CESM.a > clrcderrs

PXM1E_SJ.1.20.CESM.a >
```

clrchancnt

Clear Channel Statistics Count—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrchancnt** command to clear the statistics counters for a connection.

Syntax

clrchancnt <*chan_num*>

Syntax Description

chan_num	Specify the channel for the connection where statistics are to be cleared. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

clrchancnts, dspchancnt, dspchans, **dspcons, xclrchancnt, xdspchancnt**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the statistics for channel 35.

```
PXM1E_SJ.1.20.CESM.a > clrchancnt 35

PXM1E_SJ.1.20.CESM.a >
```

clrchancnts

Clear Channel Statistics Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrchancnts** command to clear the statistics counters for all connections on the current CESM or MPSM card.

Syntax

clrchancnts

Syntax Description

None

Related Commands

clrchancnt, dspchancnt, dspchans, **dspcons, xclrchancnt, xdspchancnt**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the statistics for all channels on the CESM card in slot 20.

```
PXM1E_SJ.1.20.CESM.a > clrchancnts

PXM1E_SJ.1.20.CESM.a >
```

clrdiagresults

Clear Diagnostics Results—MPSM-8T1-CES, MPSM-8E1-CES

Use the **clrdiagresults** command to clear the results of all the configured online diagnostic tests.

Syntax

clrdiagresults

Syntax Description

None

Related Commands

clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: Yes	State: Any	Privilege: Group 1

Example

Clear all the diagnostic tests results on the MPSM-8T1-CES card in slot 6. To confirm that the results have been cleared, use the **dspdiagresults** command.

```
M8250_SJ.1.6.MPSM8T1.CES.a > clrdiagresults

M8250_SJ.1.6.MPSM8T1.CES.a > dspdiagresults

Online Diagnostic tests RUNNING.

ID Name                           Enable    Attempts   FailCnt   Result
-- ------------------------------ -------   --------   -------   -------
1  Boot Checksum                  Yes           0         0       N/A
2  Front card NVRAM Checksum      Yes           0         0       N/A
3  CPU Performance Monitor        Yes           0         0       N/A
4  NP Performance Monitor         Yes           0         0       N/A
5  SLFP Access                    Yes           0         0       N/A
6  MPCTL Access                   Yes           0         0       N/A
7  FRAMER Access                  Yes           0         0       N/A
8  LDRAM Memory Availability      Yes           0         0       N/A
9  Host Memory Availability       Yes           0         0       N/A
10 Packet Memory Availability     Yes           0         0       N/A
11 Internal Memory Availability   Yes           0         0       N/A
12 Parameter Memory Availability  Yes           0         0       N/A
13 Host Memory Access             Yes           0         0       N/A
14 Packet Memory Access           Yes           0         0       N/A
15 Parameter Memory Access        Yes           0         0       N/A
16 MPCTL Error Monitor            Yes           0         0       N/A
```

```
17 NP Error Monitor              Yes          0         0       N/A
18 NP Health Check               Yes          0         0       N/A
19 MPCTL Loopback                Yes          0         0       N/A
20 PXM Data Path Loopback Test   Yes          0         0       N/A
21 NP TDM Loopback Test          No           0         0       N/A
22 SLFP TDM Loopback Test        No           0         0       N/A
23 Framer Loopback Test          No           0         0       N/A

M8250_SJ.1.6.MPSM8T1.CES.a >
```

clrds1stats

Clear DS1 Statistics Count—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrds1stats** command to clear the statistics counters for a specific DS1 line on the current CESM or MPSM card.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES

clrds1stats -ds1 <*line_num*>

Syntax: CESM-8T1/B, CESM-8T1, CESM-8E1

clrds1stats <*line_num*>

Syntax Description

line_num	Line number for the line for which you want to clear statistics. Use the **dsplns** command to view the available lines.

Related Commands

dspds1stats, dsplns

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the DS1 statistics for line 8 on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > clrds1stats 8

PXM1E_SJ.1.20.CESM.a >
```

Clear the DS1 statistics for line 1 on the current MPSM card

```
M8850_SF.1.28.MPSM8T1.CES.a > clrds1stats -ds1 1

M8850_SF.1.28.MPSM8T1.CES.a >
```

clrmsgcnt

Clear Message Count—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrmsgcnt** command to clear the message counters for the current CESM or MPSM card.

Syntax

clrmsgcnt

Syntax Description

None

Related Commands

dspmsgcnt

Attributes

Log: No	State: Any	Privilege: Group 1

Example

Clear the message counters for the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > clrmsgcnt

PXM1E_SJ.1.20.CESM.a >
```

clrsarcnt

Clear SAR Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **clrsarcnt** command to clear the segmentation and reassembly (SAR) counters for a particular channel.

Syntax

clrsarcnt -chn <*ChanNum*>

Syntax Description

ChanNum	Enter the channel number of the connection for which you want to clear the SAR counters. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

clrsarcnts, dspcons, dspsarcnt, **dspsarcnts**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the SAR counters for the connection using channel 35.

```
PXM1E_SJ.1.4.CESM.a > clrsarcnt -chn 35

PXM1E_SJ.1.4.CESM.a >
```

clrsarcnts

Clear SAR Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **clrsarcnts** command to clear the segmentation and reassembly (SAR) counters for all the channels or connections on the current CESM or MPSM card.

Syntax

clrsarcnts

Syntax Description

None

Related Commands

clrsarcnt, **dspsarcnt**, **dspsarcnts**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear all SAR counters on the current CESM card.

```
PXM1E_SJ.1.3.CESM.a > clrsarcnts

PXM1E_SJ.1.3.CESM.a >
```

clrscrn

Clear Screen—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrscrn** command to clear any previous commands from the session screen or window.

Syntax

clrscrn

Syntax Description

None

Related Commands

clear, cls

Attributes

Log: No	State: Any	Privilege: Any User

Example

After you enter the **clrscrn** command, the only text that appears on the screen is the CLI prompt.

```
PXM1E_SJ.1.20.CESM.a >
```

clrslftst

Clear Self-Test—CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrslftst** command to clear the pass and fail columns in the self test table, which you can view with the **dspslftsttbl** command.

> **Note** This command is not supported on the MPSM-8T1-CES or MPSM-8E1-CES cards. For self tests on the MPSM card use the MPSM's Online Diagnostics functionality. For more information about MPSM Online Diagnostics see Chapter 5, "Managing CESM and MPSM Cards."

Syntax

clrslftst

Syntax Description

None

Related Commands

clrdiagresults, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: No	State: Any State	Privilege: Any User

Example

Clear the self test table for the current card.

```
PXM1E_SJ.1.20.CESM.a > clrslftst

PXM1E_SJ.1.20.CESM.a >
```

clrtaskinfo

Clear Task Information—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **clrtaskinfo** command to clear the task information counters that can be displayed with the **dsptaskinfo** command.

Syntax

clrtaskinfo

Syntax Description

None

Related Commands

dsptaskinfo

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Service Group

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Service Group

Example

Clear the task information counters.

```
PXM1E_SJ.1.20.CESM.a > clrtaskinfo

PXM1E_SJ.1.20.CESM.a >
```

cls

Clear Screen—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **cls** command to clear any previous commands from the session screen or window.

Tip To activate this command, change cards to the active PXM1, PXM1E, or PXM45 and use the **smclrscrn** <enable|disable> command. The CESM and MPSM **clrscrn** command does not have this requirement and is the recommended command to use.

Syntax

cls

Syntax Description

None

Related Commands

clear, clrscrn

Attributes

Log: No	State: Any	Privilege: Any User

Example

After you enter the **cls** command, the only text that appears on the screen is the CLI prompt.

```
PXM1E_SJ.1.20.CESM.a >
```

cnfbert

Configure Bit Error Rate Testing—MPSM-8T1-CES, MPSM-8E1-CES

Use the **cnfbert** command to configure BERT on a line or port.

Syntax

cnfbert <*ifNumber*> [-tp <*TestPattern*>] [-lpbk <*loopback*>] [-eir <*errorInsertRate*>]

Syntax Description

ifNumber	Specify the interface number to be configured using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0. When you enter the **cnfbert** command with only the interface number specified with no other options selected, the Bit Error Rate Test is configured using the defaults: test pattern 25, no loopback, and no error insertion rate.
-tp	Test pattern. Default test pattern is 25. • 1 = All Zeros • 2 = All Ones • 3 = Alternate One and Zero • 4 = Double Alternate Ones and Zeroes • 5 = 1 in 4 • 6 = 1 in 8 • 7 = 1 in 16 • 8 = 3 in 24 • 9 = Inband Loop Back Activate • 10 = Inband Loop Back Deactivate • 11 = Three Bit (2^3-1) • 12 = Four Bit (2^4-1) • 13 = Five Bit (2^5-1) • 14 = Six Bit (2^6-1) • 15 = Seven Bit (2^7-1) • 16 = Seven Bit (2^7-1) Fractional T1 Loop Up • 17 = Seven Bit (2^7-1) Fractional T1 Loop Down • 18 = Nine Bit (2^9-1) • 19 = Ten Bit (2^10-1) • 20 = Eleven Bit (2^11-1) • 21 = Fifteen Bit (2^15-1) • 22 = Seventeen Bit (2^17-1) • 23 = Eighteen Bit (2^18-1) • 24 = Twenty Bit (2^20-1) (Not supported in Cisco MGX Releases 5 and 1.3) • 25 = Twenty Bit (2^20-1) QRSS • 26 = TwentyOne Bit (2^21-1) • 27 = TwentyTwo Bit (2^22-1) • 28 = TwentyThree Bit (2^23-1) • 29 = TwentyFive Bit (2^25-1) • 30 = TwentyEight Bit (2^28-1) • 31 = TwentyNine Bit (2^29-1) • 32 = ThirtyOne Bit (2^31-1)

-lpbk	Loopback Code. • Line Inband = 12 • No Loopback = 15 (Default)
-eir	Error Insertion Rate. • 1 = No Error (Default) • 2 = 1 in 10 • 3 = 1 in 100 • 4 = 1 in 1,000 • 5 = 1 in 10,000 • 6 = 1 in 100,000 • 7 = 1 in 1,000,000 • 8 = 1 in 10,000,000

Related Commands

clrbertstats, delbert, dspbert, dspbertstats, insbiterror, startbert, stopbert

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Configure BERT on line 1 of the MPSM-8T1-CES in slot 28. Set the parameters to test pattern 15, inband line loopback, and an error insertion rate of 1 in 10,000.

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfbert -if 1.0 -tp 15 -lpbk 12 -eir 5

        Use startbert to start BERT
        Use delbert followed by cnfbert to re-configure BERT parameters

M8850_SF.1.28.MPSM8T1.CES.a >
```

cnfcdparms

Configure Card Parameters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **cnfcdparms** command to enable or disable parameters on the current card. In Cisco MGX Releases 5 and 1.3, there is only one parameter available to configure with this command.

When there is a channel configuration change two configuration change traps are sent. Use the **cnfcdparms** command to enable or disable the sending of the older configuration trap change on the current card.

Syntax

cnfcdparms

Syntax Description

Note You do not need to enter values with the **cnfcdparms** command. However, after you enter the **cnfcdparms** command, the display asks you to enter an *option number* (the only valid *option number* is 1). After the you enter the option number, the display asks you to enter a *value for option 1*. The possible values are described below.

option number	Enter the option number of the parameter to configure: • 1 = Send Old Configuration Change Trap
value for option 1	Select the value for option 1: • On MPSM-8T1-CES, MPSM-8E1-CES: – Y = Yes (Enable) – N = No (Disable) • On CESM-8T1/B, CESM-8T1, CESM-8E1: – 1 = Enable – 2 = Disable

Related Commands

dspcdparms

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Active	Privilege: Group 1

Example: MPSM-8T1-CES, MPSM-8E1-CES

On the current MPSM-8T1-CES card disable the sending of old configuration change traps, and then display the results using the **dspcdparms** command.

```
M8250_SJ.1.6.MPSM8T1.CES.a > cnfcdparms
CARD CONFIGURATION OPTIONS
Opt#  Value       Type           Description
----  -----       ----           -----------
1     Yes         Boolean        Send Old Config Change Trap

Enter option Number (1-1): 1

Enter value for option 1 (Y/N): N

M8250_SJ.1.6.MPSM8T1.CES.a > dspcdparms
CARD CONFIGURATION OPTIONS
Opt#  Value       Type           Description
----  -----       ----           -----------
1     No          Boolean        Send Old Config Change Trap
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Enable on the current CESM card the sending of old configuration change traps.

```
PXM1E_SJ.1.4.CESM.a > cnfcdparms

CARD CONFIGURATION OPTIONS
OPT#  VALUE     TYPE    DESCRIPTION
----  -----     ----    -----------
1     Disable   Boolean Sending generalConfigChangeTrap for Channel

Enter option Number(1-1):1

CARD CONFIGURATION OPTIONS
OPT#  VALUE     TYPE    DESCRIPTION
----  -----     ----    -----------
1     Disable   Boolean Sending generalConfigChangeTrap for Channel

Enable/Disable Sending generalConfigChangeTrap for Channel.
 If the value set to:
   1: Sending generalConfigChangeTrap for Channel will be Enabled
   0: Sending generalConfigChangeTrap for Channel will be Disabled

Enter value for option 1:1

CARD CONFIGURATION OPTIONS
OPT#  VALUE     TYPE    DESCRIPTION
----  -----     ----    -----------
1     Enable    Boolean Sending generalConfigChangeTrap for Channel

PXM1E_SJ.1.4.CESM.a >
```

cnfcdprtntype

Configure Card Partition Type (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **cnfcdprtntype** command to configure the LCN partition type that serves as the basis for sharing Global Logical Connection Number (GLCN) resources on a service module.

Note Although in the CLI, the **cnfcdprtntype** command is not supported on the MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, or CESM-8E1 cards in Cisco MGX Release 1.3 (PXM1 platforms).

Syntax

cnfcdprtntype <*partitionType*>

Syntax Description

partitionType	LCN partition type. • 1 = No Partition. All controllers compete for LCN resources available on the service module. • 2 = Controller Based. All controllers reserve a fixed number of LCN resources. Port LCN resources are not reserved. • 3 = Port Controller Based. All controllers reserve LCN resources for each port.

Related Commands

dspcdprtntype, xcnfcdprtntype

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example:

Configure the LCN partition type to be controller based on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfcdprtntype 2

  Error occurred during the SNMP SET operation !!
  Probable Reason : "Cannot modify this object. It is a read only object"
  SNMP Error Code : 17
```

```
Set failed due to illegal parameter(s)

Syntax : cnfcdprtntype “partitionType”
        partition type -- 1:no partition, 2: controller based,
                         3: port controller based

M8250_SJ.1.22.MPSM8T1.CES.a >
```

cnfcdrscprtn

Configure Card Resource Partition (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **cnfcdrscprtn** command to modify the card-level resources (LCNs) allocated to resource partitions configured on the current CESM or MPSM card.

Syntax

cnfcdrscprtn *<#PARcon>* *<#PNNIcon>* *<#TAGcon>*

Syntax Description

#PARcon	Maximum number of connections (LCNs) available to the PAR controller. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
#PNNIcon	Maximum number of connections (LCNs) available to the PNNI controller. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
#TAGcon	Maximum number of connections (LCNs) available to the TAG (MPLS) controller. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

Related Commands

addcdrscprtn, **delcdrscprtn**, **dspcdrscprtn, xcnfcdrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example

On the current MPSM card, modify the card-level resource partitioning to give 100 connections to the PAR controller, 50 connections to the PNNI controller, and 42 connections to the TAG (MPLS) controller.

```
M8250_SJ.1.22.MPSM8T1.CES.a > cnfcdrscprtn 100 50 42
```

```
M8250_SJ.1.22.MPSM8T1.CES.a >
```

cnfchan

Configure Channel—CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **cnfchan** command to modify connection configuration parameters.

Syntax

cnfchan *<chan_num> <CDVT> <CLIP> <bufsize> <clockmode> <IdleSuppEnable>*

<ForceIdleSuppression>

Syntax Description

chan_num	Enter the channel number for the connection you want to modify. The **dspchans** command reports shows the channel number for each connection. On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column. On the PXM1 platform, the channel number is found in the *ChNum* column. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279
CDVT	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
CLIP	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.
bufsize	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The size can be automatically computed, or you can enter a specific size in bytes. The minimum value depends on the CDVT configured. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)**N* or (CDVT + frames in 2 cells) * *N*} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384**N* • E1 SDT maximum value = 417**N* • *N* = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)

clockmode	Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3
IdleSuppEnable	This parameter is a flag to control the idle code (ABCD signalling bits) suppression feature on a connection. If you enable this feature, idle suppression logic is activated so that suppression begins when valid idle ABCD bits are detected. This feature is valid only for single DS0 connections. Enter a **1** to disable idle suppression or a **2** to enable this feature.
ForceSuppression	This parameter is a flag to control the external idle suppression trigger. With this feature enabled, the logic forcefully suppresses cells on a single DS0 connection. Enter a **1** to disable forced suppression or a **2** to enable this feature.

Related Commands

addcon, addconCDVT, addspvc, cnfcon, delchan, delchans, **delcon, dncon, dspchan, dspchans**, **dspcon**, **dspcons, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Reduce the CDVT value for the connection labeled channel 35 to 500 microseconds.

```
PXM1E_SJ.1.4.CESM.a > cnfchan 35 500 2500 384 1 1 1

PXM1E_SJ.1.4.CESM.a >
```

cnfcon

Configure Connection—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **cnfcon** command to modify connection configuration parameters.

Syntax

cnfcon *<port_num> <CDVT> <CLIP> <bufsize> <clockmode> <IdleSuppEnable>* *<ForceIdleSuppression>*

Syntax Description

port_num	Enter the port number for the port that hosts the connection you want to modify. The **dspcons** and **dspchans** command output shows the port number for each connection. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248 **Tip** On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** and **dspchans** commands.
CDVT	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
CLIP	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.
bufsize	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The size can be automatically computed, or you can enter a specific size in bytes. The minimum value depends on the CDVT configured. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)**N* or (CDVT + frames in 2 cells) * *N*} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384**N* • E1 SDT maximum value = 417**N* • *N* = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)

clockmode	CBR Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3
IdleSuppEnable	This parameter is a flag to control the idle code (ABCD signalling bits) suppression feature on a connection. If you enable this feature, idle suppression logic is activated so that suppression begins when valid idle ABCD bits are detected. This feature is valid only for single DS0 connections. Enter a **1** to disable idle suppression or a **2** to enable idle suppression.
ForceSuppression	This parameter is a flag to control the external idle suppression trigger. With this feature enabled, the logic forcefully suppresses cells on a single DS0 connection. Enter a **1** to disable forced suppression or a **2** to enable this feature.

Related Commands

addcon, **addconCDVT, addspvc, cnfchan, delchan, delchans, delcon**, **dncon, dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Reduce the CDVT value for the connection on port 1 to 500 microseconds.

```
PXM1E_SJ.1.4.CESM.a > cnfcon 1 500 2500 384 1 1 1

PXM1E_SJ.1.4.CESM.a >
```

cnfdiagtest

Configure Diagnostic Test—MPSM-8T1-CES, MPSM-8E1-CES

Enter the **cnfdiagtest** command to modify the parameters of a single diagnostic test that is a member of the online diagnostics test suite. This command may also be used to modify all online diagnostic tests at the same time.

Syntax

cnfdiagtest <*TestId*> [<*enable|disable*>] [-role <*role*>] [-startTOD <*time*>] [-period <*period*>]

[-iterns <*iterns*>] [-param1 <*param*>] [-param2 <*param*>]

Syntax Description

TestId	Test ID number of the diagnostic test to be modified in the range 1 to 23, or enter *all* to specify all tests. Enter the **dspdiagtests** command to view the diagnostic tests available and the associated test ID numbers. **Note** Only the *enable|disable* and -role option may be used with the *all* command option. All other command options are for use with individual diagnostic tests.
enable|disable	Enables or disables the diagnostic test on the current card.
-role	State of the card on which the specified diagnostic test is performed: • Active state = 1 **Note** In Cisco MGX Releases 5 and 1.3, diagnostic tests are supported only on Active cards.
-startTOD	Scheduled start time of the diagnostic test using a 24 hour format (HH:MM). Enter *Now* to execute the test immediately.
-period	Time between successive iterations of the diagnostic test in minutes.
-iterns	Number of times the diagnostic test should be repeated. When the value is specified as -1, the test will continuously execute.
-param1	Parameter 1 for test. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.
-param2	Parameter 2 for test. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.

Related Commands

clrdiagresults, clrslftst, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: Yes State: Active Privilege: Service Group

Example

On the MPSM-8T1-CES card in slot 6, modify diagnostic test number 9 to enabled in the active state, to start now, to wait one minute between successive tests, and run only twice.

```
M8250_SJ.1.6.MPSM8T1.CES.a > cnfdiagtest 9 enable -role 1 -startTOD now -period 1 -iterns
2

M8250_SJ.1.6.MPSM8T1.CES.a >
```

cnfln

Configure Line—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the optional **cnfln** command to configure line characteristics after the line becomes active (see **addln**).

Syntax: CESM-8T1/B, CESM-8T1, CESM-8E1

cnfln <*line_num*> <*line_code*> <*line_len*> <*clk_src*> [*E1-signalling*]

Syntax: MPSM-8T1-CES, MPSM-8E1-CES

cnfln <*line_num*> <*line_code*> <*line_len*> <*clk_src*> [*E1-signalling*|*T1-Linetype*]

Syntax Description

line_num	Enter the number of the line you want to configure. Use the **dsplns** command to display the available lines.
line_code	Select the line coding: • B8ZS (T1) = 2 • HDB3 (E1) = 3 • AMI (T1/E1) = 4
line_len	Enter the length of the line: • T1 range: – 0 to 131 feet = 10 – 131 to 262 feet = 11 – 262 to 393 feet = 12 – 393 to 524 feet = 13 – 524 to 655 feet = 14 – >655 feet = 15 • E1 (with SMB line module) = 8 • E1 (with RJ48 line module) = 9

clk_src	DSX1 clock source. • 1 = loop clock • 2 = local clock
E1-signalling *T1-Linetype*	This option selects E1 signalling methods or T1 line types. Enter the keyword for the signalling or line type combination listed below. E1 Signalling Methods: • CAS, no CRC = CAS • CAS with CRC = CAS_CRC • CCS, no CRC = CCS • CCS, with CRC = CCS_CRC • Clear E1 = CLEAR **Note** To support unstructured E1 communications (**addport** command), you must set the E1 signalling to CLEAR. T1 Line Types: • Dsx1ESF = ESF • Dsx1D4 (SF) = D4

Related Commands

addln, **addlnloop**, **delln**, **dellnloop**, **dspln**, **desplns, xcnfln, xdspln, xdsplns**

Attributes

Log: Yes State: Active Privilege: Group 1

Example

Configure the E1 line 3 on the current CESM card to use HDB3 line coding, a line length of E1 with RJ48 line module, a local clock source, and clear E1 signalling.

```
PXM1E_SJ.1.3.CESM.a > cnfln 3 3 9 2 CLEAR

PXM1E_SJ.1.3.CESM.a >
```

Configure the T1 line 1 on the current MPSM card to use B8ZS line coding, a line length of 100 ft., a local clock source, and a Superframe (D4) line type.

```
M8250_SJ.1.6.MPSM8T1.CES.a > cnfln 1 2 10 2 D4

M8250_SJ.1.6.MPSM8T1.CES.a >
```

cnflnloop

Configure Line Loopback Code Detection—MPSM-8T1-CES, MPSM-8E1-CES

Use the **cnflnloop** command to enable or disable loopback code detection on a specified line. Enabling loopback code detection allows a line to detect inband loopback activate and deactivate codes.

Upon detecting a loopback activate code, the line goes into remote loopback. Upon receiving a loopback deactivate code, the line comes out of remote loopback. The loopback deactivate code is honored only if the line was put into remote loopback by a loopback activate code. If loopback code detection is disabled while the line is in a remote loopback mode that was initiated by a loopback activate code, the line will fall out of remote loopback.

The types of equipment that can generate loopback activate codes include the SRM, BERT enabled routers, and DSU/CSU test equipment.

For additional information on loopbacks supported by the CESM and MPSM card, see Chapter 5, "Managing CESM and MPSM Cards."

Tip Use the **dspln** command to display the configuration for loopback detection.

Syntax

cnflnloop <*line_num*> <*lpbkCodeDetection*>

Syntax Description

line_num	Line number for which you want to configure loopback code detection. Use the **dsplns** command to view the available lines.
lpbkCodeDetection	Loopback code detection parameter. • Disable code detection = 1 • Enable code detection = 2

Related Commands

addlnloop, **dellnloop**, **dspln**, **dsplns, xcnfln**

Attributes

Log: Yes	State: Active	Privilege: Service Group

Example

Enable loopback code detection for line 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > cnflnloop 1 2

M8850_SF.1.28.MPSM8T1.CES.a >
```

cnfportrscprtn

Configure Port Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B (PXM1 only), CESM-8T1 (PXM1 only), CESM-8E1 (PXM1 only)

Use the **cnfportrscprtn** command to modify a port-level resource partition on the current CESM or MPSM card

Syntax

cnfportrscprtn <*port_num*> <*controller-name*>

Syntax Description

port_num	Enter the port number of the resource partition. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
controller-name	Resource partition controller name. • On PXM1E, PXM45 platforms: – 1 = PAR (PVC) – 2 = PNNI (SPVC) – 3 = TAG (MPLS) • On PXM1 platforms: – PAR – PNNI – TAG

Related Commands

cnfrscprtn, dspportrscprtn. dsprscprtn

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Modify the PNNI resource partition on port 1 of the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfportrscprtn 1 2

M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: PXM1

Modify the PAR resource partition on port 1 of the current CESM card.

```
M8250_SJ.1.21.CESM.a > cnfportrscprtn 1 PAR

M8250_SJ.1.21.CESM.a >
```

cnfprfparam

Configure Performance Parameters—MPSM-8T1-CES, MPSM-8E1-CES

Use the **cnfprfparam** command to change the **dspprfhist** command's sampling interval (bucket interval) of processor usage on the current MPSM card.

Syntax

cnfprfparam <*Bucket interval*>

Syntax Description

Bucket interval	Sampling interval of processor usage on the MPSM card. Range is 1-600 seconds. Default setting is 20 seconds.

Related Commands

dspprfhist

Attributes

Log: Yes	State: Any	Privilege: Group 1

Example

Change the sampling interval of the **dspprfhist** command to 40 seconds.

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfprfparam 40
The bucket interval will be effective from the next bucket collection.

M8850_SF.1.28.MPSM8T1.CES.a >
```

cnfrscprtn

Configure Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B (PXM1 only), CESM-8T1 (PXM1 only), CESM-8E1 (PXM1 only)

Use the **cnfrscprtn** command to modify the configuration of a port-level resource partition.

Syntax:

cnfrscprtn <*port_num*> <*cntrlr*> <*pct_bw_ingr*> <*pct_bw_egr*> <*low_lcn*> <*high_lcn*> <*numOfLcnAvail*>

Syntax Description

port_num	Port number associated with the resource partition to be modified. You must add a port to a line before you can modify the resource partition on a port. Use the **dspports** command to view the available ports.
cntrlr	Controller for this partition: • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
pct_bw_ingr	Ingress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for ingress communications. Range is 0 to 100 percent.
pct_bw_egr	Egress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for egress communications. Range is 0 to 100 percent.
low_lcn	Low LCN number available in this port resource partition. Range is 1 to 1000.
high_lcn	High LCN number available in this port resource partition. Range is 1 to 1000.
numOfLcnAvail	Maximum LCNs (connections) available in this port resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES: 1–192 • CESM-8E1, MPSM-8E1-CES: 1–248

Related Commands

addrscprtn, **cnfportrscprtn**, **dspportrscprtn**, **dsprscprtn**, **delrscprtn, dspports, xcnfrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

Modify the PNNI port-level resource partition configured on port 1 of the current MPSM card to use an ingress and egress bandwidth of 50 percent, a low LCN number of 1, a high LCN number of 1, and the maximum connections available as 1.

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfrscprtn 1 2 50 50 1 1 1

M8850_SF.1.28.MPSM8T1.CES.a >
```

cnfslftst

Configure Self-Test—CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **cnfslftst** command to enable or disable self testing and to configure how often the tests are run on the current CESM card. After enabling self testing with the **cnfslftst** command, use the **runslftst** command to choose the test to run and begin testing. At the ending of testing, use the **cnfslftst** command to disable testing.

Note This command is not supported on the MPSM-8T1-CES or MPSM-8E1-CES cards. For self tests on the MPSM card use the MPSM's Online Diagnostics functionality. For more information about MPSM Online Diagnostics see Chapter 5, "Managing CESM and MPSM Cards."

Syntax

cnfslftst -en <*SelftestEnable*> -tm <*SelftestPeriod*>

Syntax Description

-en	This option enables or disables self testing. Replace *SelftestEnable* with one of the following values: • Disabled = 1 • Enabled = 2
-tm	This option defines the period, in minutes, between self-tests. The range is 1 to 60.

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: Yes	State: Active	Privilege: Any User

Example

The following example enables self testing and configures the testing to repeat every minute.

```
PXM1E_SJ.1.20.CESM.a > cnfslftst -en 2 -tm 1

PXM1E_SJ.1.20.CESM.a >
```

cnfswparms

Configure Software Parameters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **cnfswparms** command to configure software parameters for a connection that has been added with the **addcon**, **addconCDVT,** or **addspvc** commands.

Tip To view current settings for the parameters configured by the **cnfswparms** command, use the **dspchan** or **dspcon** command.

Syntax

cnfswparms <*chan_num*> <*routing_priority*> <*max_cost*> <*restricted_trunk_type*>

Syntax Description

chan_num	Enter the channel number for the connection to be configured. To display the connections with channel numbers, enter the **dspchans** command. On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column. On the PXM1 platform, the channel number is found in the *ChNum* column. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279
routing_priority	Routing priority for this connection. This parameter defines the rerouting derouting priority of the connection. Range is 1 to 15. Default setting is 8.
max_cost	Maximum end-to-end cost for the connection. The VSI controller uses the maximum cost to determine which network routes are available to the connection. The maximum cost is the calculated sum of the administrative weights (AWs) in both directions on every hop in a selected route. Range is 1 to 2,147,483,647.
restricted_trunk_type	Trunk restriction option. To restrict the connection routing to terrestrial trunks, enter **2**. To restrict the connection routing to satellite trunks, enter **3**. To enable connection routing without trunk restrictions, enter **1**. Default setting routes connections with no restrictions.

Related Commands

addcon, **addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon**, **dncon, dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example

The following example configures channel 35 with a routing priority of 10, an end-to-end connection cost of 200, and no trunk restrictions on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > cnfswparms 35 10 200 1

M8850_SF.1.28.MPSM8T1.CES.a >
```

core

Core Memory Dump—MPSM-8T1E1, MPSM-8T1-CES, MPSM-8E1-CES

Use the **core** command to manage core memory dumps on the MPSM card.

For information on the use of this command, see "Managing MPSM Core Dumps" in Chapter 5, "Managing CESM and MPSM Cards".

Syntax

core [?] [mask] [mask default] [mask <*hex-mask*>] [enable] [disable] [hot-dump <*filename.zip*>]

Syntax Description

core	Enter the **core** command without any arguments to display the current core dump settings.
?	Enter the **core** command with a question mark to list the optional parameters for the **core** command.
mask	Enter the **core** command with the **mask** option to display the current mask and the error conditions for which a core dump is enabled. The default mask is 0x273ae. To modify the mask, use the **mask** <*hex-mask*> option.
mask default	Enter the **core** command with the **mask default** option to return the mask to the default mask value (0x273ae).
mask <*hex-mask*>	Enter the **core** command with the **mask** option followed by a specified hexadecimal value to modify the mask. You can specify a mask regardless of whether core dumping is enabled for the card.
enable	Enter the **core** command with the **enable** option to enable automatic core dumping for the current slot.
disable	Enter the **core** command with the **disable** option to disable automatic core dumping for the current slot.
hot-dump <*filename.zip*>	Enter the **core** command with the **hot-dump** option followed by a specified file name to initiate a hot dump of the core while the MPSM card is running. The file name must be in the format *filename.zip*. MPSM core dump files are saved in the C:/ directory on the PXM processor card.

Related Commands

chkflash, cnfdiagtest, cnfprfparam, dspcderrs, dspdiagtests, dspmsgcnt, dspprfhist, dsptaskinfo, i, memShow, version

Attributes

Log: Yes	State: Any	Privilege: Service Group

Example

Display the current core dump settings on an MPSM-8T1-CES card:

```
M8850_SF.1.28.MPSM8T1.CES.a > core
Automatic core dumping is ** disabled ** for this slot.

Saved core images are on PXM's hard disk (C:/).

M8850_SF.1.28.MPSM8T1.CES.a >
```

Display the current mask and the error conditions for which a core dump is enabled on an MPSM-8T1-CES card:

```
M8850_SF.1.28.MPSM8T1.CES.a > core mask
Automatic core dumping is enabled for this slot.
The current core mask is 0x273ae.

OFF 00001 not used (can't be turned ON)
ON  00002 DRAM Parity Error
ON  00004 WatchDog Timeout Reset
ON  00008 Resource Overflow
OFF 00010 Clear All Configuration (can't be turned ON)
ON  00020 Missing Task
OFF 00040 Reset because of PXM Low Voltage (can't be turned ON)
ON  00080 Reset By Event Log Task
ON  00100 Reset from Shell
ON  00200 Unknown
OFF 00400 Reset from PXM (can't be turned ON)
OFF 00800 Reset System (can't be turned ON)
ON  01000 Switch Core Card
ON  02000 Secondary Cache Error
ON  04000 Software Error Reset
OFF 08000 S/W reset due to upgrade (can't be turned ON)
OFF 10000 Restore All Configuration (can't be turned ON)
ON  20000 Device Driver Error

M8850_SF.1.28.MPSM8T1.CES.a >
```

delbert

Delete Bit Error Rate Testing—MPSM-8T1-CES, MPSM-8E1-CES

Use the **delbert** command to clear a Bit Error Rate Testing configuration from a line or port on the current card. This command may be used to clear a BERT session that is running or may be used after the BERT session has been stopped.

Syntax

delbert <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number from which you want to clear the Bit Error Rate Testing configuration using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

clrbertstats, cnfbert, dspbert, dspbertstats, insbiterror, startbert, stopbert

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Clear the Bit Error Rate Test configuration from line 1, port 1 on the MPSM-8T1-CES in slot 6.

```
M8250_SJ.1.6.MPSM8T1.CES.a > delbert 1.1

M8250_SJ.1.6.MPSM8T1.CES.a >
```

delcdrscprtn

Delete Card Resource Partition (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **delcdrscprtn** command to delete a card-level resource partition configured on the current CESM or MPSM card.

Note Although in the CLI, the **delcdrscprtn** command is not supported on the CESM-8T1/B, CESM-8T1, or CESM-8E1 cards in Cisco MGX Release 1.3 (PXM1 platforms).

Syntax

delcdrscprtn <*controller*>

Syntax Description

controller	Controller of the resource partition to delete. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)

Related Commands

addcdrscprtn, **cnfcdrscprtn**, **dspcdrscprtn, xcnfcdrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example

Delete the TAG (MPLS) controller from the card-level resource partitions configured on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > delcdrscprtn 3

M8250_SJ.1.22.MPSM8T1.CES.a >
```

delchan

Delete Channel—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **delchan** command to delete a connection.

Syntax

delchan <*chan_num*>

Syntax Description

chan_num	Enter the channel number for the connection to be deleted. To display the connections with channel numbers, enter the **dspchans** command. On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column. On the PXM1 platform, the channel number is found in the *ChNum* column. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchans, delcon, dncon, dspchan, dspchans, dspcon, dspcons, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Delete channel 36.

```
PXM1E_SJ.1.4.CESM.a > delchan 36

PXM1E_SJ.1.4.CESM.a >
```

delchanloop

Delete Channel Loop—MPSM-8T1-CES, MPSM-8E1-CES

Use the **delchanloop** command to delete a channel loopback from the current MPSM card. For additional information on loopbacks supported by the MPSM card, see Chapter 5, "Managing CESM and MPSM Cards."

Tip To view the loopback status of a connection, use the **dspcon** command and look for the line labeled *ChanLocalRemoteLpbkState*.

Syntax

delchanloop <*chan number*>

Syntax Description

chan number	Enter the channel number as it appears in the output of the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addchanloop, dspchans, dspcons, tstchan, tstcon, **tstdelay, xcnfchan, xcnfcon**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Remove a channel loopback from channel 35 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > delchanloop 35

M8850_SF.1.28.MPSM8T1.CES.a >
```

delchans

Delete Channels—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **delchans** command to delete a range of CESM or MPSM connections by specifying the channel numbers. Channel numbers are assigned by the switch as each connection is defined with the **addcon, addconCDVT,** or **addspvc** commands.

Syntax

delchans *<start chan #> <# of chans>*

Syntax Description

start chan #	Enter a channel number as it appears in the **dspcons** or **dspchans** command display. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.
# of chans	Number of consecutive channels to delete.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delcon, dncon, dspchan, dspchans, dspcon, dspcons, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Delete channels 37 and 38.

```
PXM1E_SJ.1.4.CESM.a > delchans 37 2

PXM1E_SJ.1.4.CESM.a >
```

delcon

Delete Connection—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **delcon** command to delete a connection.

Syntax

delcon <*port_num*>

Syntax Description

port_num	Enter the port number for the connection to be deleted. To display the connections with port numbers, enter the **dspcons** or **dspchans** command. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248 **Tip** On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, dncon, dspchan, dspchans, dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Delete the connection on port 4.

```
PXM1E_SJ.1.4.CESM.a > delcon 4

PXM1E_SJ.1.4.CESM.a >
```

delln

Delete Line—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **delln** command to bring down a line.

Syntax

delln <*line_num*>

Syntax Description

line_num	Number of the line to be deleted. Use **dsplns** to view the available lines.

Related Commands

addln, **cnfln**, **dspln**, **dsplns, xcnfln, xdspln, xdsplns**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Bring down line 8 on a CESM card.

```
PXM1E_SJ.1.20.CESM.a > delln 8

PXM1E_SJ.1.20.CESM.a >
```

dellnloop

Delete Line Loop—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dellnloop** command to remove the local line loopback feature from a line. For additional information on loopbacks supported by the CESM or MPSM cards, see Chapter 5, “Managing CESM and MPSM Cards.”

Syntax

dellnloop <*line_num*>

Syntax Description

line_num	Number of the line to be removed from local loopback. Use **dsplns** to view the available lines.

Related Commands

addln, addlnloop, **cnfln, delln, dspln, dsplns, xcnfln, xdspln, xdsplns**

Attributes

Log: Yes	State: Active	Privilege: Service Group

Example

Remove line loopback from line 8 on a CESM card.

```
PXM1E_SJ.1.20.CESM.a > dellnloop 8

PXM1E_SJ.1.20.CESM.a >
```

delport

Delete Port—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **delport** command to remove a port from a CESM or MPSM card.

Syntax

delport <*port_num*>

Syntax Description

port_num	Enter the port number for the port you want to delete. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

Related Commands

addport, **delports**, **dspport**, **dspports, xcnfport, xdspport, xdspports**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

The following example deletes port 4 on the current CESM card:

```
PXM1E_SJ.1.4.CESM.a > delport 4

PXM1E_SJ.1.4.CESM.a >
```

delports

Delete Ports—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **delports** command remove a specified number of contiguous port configurations.

Syntax

delports <*start port #*> <*# of ports*>

Syntax Description

start port #	Start port number to be deleted. Use the **dspports** command to display the configured ports. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
# of ports	Number of contiguous ports to be deleted.

Related Commands

addport, **delport**, **dspport**, **dspports, xdspport, xdspports**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

The following example deletes ports 2 and 3.

```
PXM1E_SJ.1.4.CESM.a > delports 2 2

PXM1E_SJ.1.4.CESM.a >
```

delrscprtn

Delete Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **delrscprtn** command to delete a port-level resource partition.

Note Although in the CLI, the **delrscprtn** command is not supported on the MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, or CESM-8E1 cards in Cisco MGX Release 1.3 (PXM1 platforms).

Syntax: PXM1E, PXM45

delrscprtn <*port_num*> <*cntrlr_type*> <*cntrlr_id*>

Syntax: PXM1

delrscprtn <*port_num*> <*controller*>

Syntax Description

port_num	Port number associated with the resource partition to be deleted. Use the **dspports** command to view the available ports. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
cntrlr_type, *controller*	Controller for the resource partition. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
cntrlr_id	Enter the controller ID assigned to the partition you are deleting. To display the controller ID, use the **dsprscprtn** command. Valid range is from 1 to 255.

Related Commands

addport, addrscprtn, cnfportrscprtn, cnfrscprtn, delport, dspport, dspportrscprtn, dspports, **dsprscprtn, xcnfrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

Delete the PNNI resource partition with the controller ID of 2 from port 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > delrscprtn 1 2 2

M8850_SF.1.28.MPSM8T1.CES.a >
```

dncon

Down Connection (PXM1E/PXM45 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dncon** command to bring down a connection.

Note This command operates only on master endpoints.

Syntax

dncon <*Chan Num*>

Syntax Description

Chan Num	Specify the channel for the connection to be displayed. You can view channel information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, dspchan, dspchans, **dspcon, dspcons, rrtcon, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Bring down the connection using channel 36.

```
PXM1E_SJ.1.4.CESM.a > dncon 36

PXM1E_SJ.1.4.CESM.a >
```

dspalm

Display Alarm—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspalm** command to display the active alarms associated with a specific line on the current CESM or MPSM card.

Syntax

dspalm -ds1 <*LineNum*>

Syntax Description

LineNum	Line number for the line you want to display the active alarms. Use **dsplns** to view the available lines.

Related Commands

clralm, clralmcnt, clralmcnts, clralms, dspalmcnf, dspalmcnt, dspalms, dsplns, xcnfalm

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the alarms for line 8 on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspalm -ds1 8

  LineNum:                    8
  LineAlarmState:             No Alarms
  LineStatisticalAlarmState:  No Statistical Alarms


PXM1E_SJ.1.20.CESM.a >
```

dspalmcnf

Display Alarm Configuration—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspalmcnf** command to display the alarm configuration and thresholds for a specific line on the current card.

Syntax

dspalmcnf -ds1 <*LineNum*>

Syntax Description

LineNum	Line number of the line for which you want to display the alarm configuration. Use the **dsplns** command to view the available lines.

Related Commands

clralm, clralmcnt, clralmcnts, clralms, dspalm, dspalmcnt, dspalms, dsplns, xcnfalm

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the alarm configuration and thresholds for line 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspalmcnf -ds1 1

  LineNum:                   1
  RedSeverity:               Major
  RAISeverity:               Minor
  NEAlarmUpCount:            6
  NEAlarmDnCount:            1
  NEAlarmThreshold:          1500
  FEAlarmUpCount:            6
  FEAlarmDnCount:            1
  FEAlarmThreshold:          1500
  StatisticalAlarmSeverity:  Minor
  lCV15minThreshold:         14
  lCV24hrThreshold:          134
  lES15minThreshold:         12
  lES24hrThreshold:          121
  lSES15minThreshold:        10
  lSES24hrThreshold:         100
  cRC15minThreshold:         14
  cRC24hrThreshold:          134
  cRCES15minThreshold:       12
  cRCES24hrThreshold:        121
  cRCSES15minThreshold:      10
  cRCSES24hrThreshold:       100
```

```
  SEFS15minThreshold:       2
  SEFS24hrThreshold:        17
  AISS15minThreshold:       2
  AISS24hrThreshold:        17
  UAS15minThreshold:        10
  UAS24hrThreshold:         10


M8850_SF.1.28.MPSM8T1.CES.a >
```

dspalmcnt

Display Alarm Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspalmcnt** command to display the alarm counters for a specific line on the current CESM or MPSM card. The alarm counters indicate how many times each type of active alarm has occurred since the counters were last reset.

Syntax

dspalmcnt -ds1 <*LineNum*>

Syntax Description

LineNum	Line number of the line you want to display the alarm counters. Use the **dsplns** command to view the available lines.

Related Commands

clralm, clralmcnt, clralmcnts, clralms, dspalm, dspalmcnf, dspalms, dsplns, xcnfalm

Attributes

Log: No State: Any Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display the alarm counters for line 2 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspalmcnt -ds1 1

  LineNum:               1
  lCVCurrent:            0
  lCVLast15minBucket:    2
  lCVLast24hrBucket:     2
  lESCurrent:            0
  lESLast15minBucket:    1
  lESLast24hrBucket:     1
  lSESCurrent:           0
  lSESLast15minBucket:   0
  lSESLast24hrBucket:    0
  cRCCurrent:            0
  cRCLast15minBucket:    0
  cRCLast24hrBucket:     0
  cRCESCurrent:          0
  cRCESLast15minBucket:  0
  cRCESLast24hrBucket:   0
  cRCSESCurrent:         0
  cRCSESLast15minBucket: 0
  cRCSESLast24hrBucket:  0
  sEFSCurrent:           0
  sEFSLast15minBucket:   1
  sEFSLast24hrBucket:    1
  aISSCurrent:           0
  aISSLast15minBucket:   0
```

```
  aISSLast24hrBucket:    0
  uASCurrent:            400
  uASLast15minBucket:    896
  uASLast24hrBucket:     896
  percentEFS:            99
  RcvLOSCount:           1
  RcvOOFCount:           1
  RcvRAICount:           0
  RcvFECount:            0


M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display the alarm counters for line 2 on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspalmcnt -ds1 1

  Line Number:                                          1
  LCV Current:                                          0
  LCV Last 15Min Bucket:                                0
  LCV Last 24Hr Bucket:                                 0
  Line Errored Seconds Current:                         0
  Line Errored Seconds Last 15Min Bucket:               0
  Line Errored Seconds Last 24Hr Bucket:                0
  Line Severely Errored Seconds Current:                0
  Line Severely Errored Seconds Last 15Min Bucket:      0
  Line Severely Errored Seconds Last 24Hr Bucket:       0
  CRC Current:                                          0
  CRC Last 15Min Bucket:                                0
  CRC Last 24Hr Bucket:                                 0
  CRC Errored Seconds Current:                          0
  CRC Errored Seconds Last 15Min Bucket:                0
  CRC Errored Seconds Last 24Hr Bucket:                 0
  CRC Severely Errored Seconds Current:                 0
  CRC Severely Errored Seconds Last 15Min Bucket:       0
  CRC Severely Errored Seconds Last 24Hr Bucket:        0
  Severely Errored Framing Seconds Current:             0
  Severely Errored Framing Seconds Last 15Min Bucket:   0
  Severely Errored Framing Seconds Last 24Hr Bucket:    0
  AIS Errored Seconds Current:                          0
  AIS Errored Seconds Last 15Min Bucket:                0
  AIS Errored Seconds Last 24Hr Bucket:                 0
  Unavailable Seconds Current:                          0
  Unavailable Seconds Last 15Min Bucket:                0
  Unavailable Seconds Last 24Hr Bucket:                 0
  Percent EFS:                                          100
  Received LOS:                                         0
  Received OOF:                                         0
  Received RAI:                                         0
  Received FE:                                          0


PXM1E_SJ.1.4.CESM.a >
```

dspalms

Display Alarms—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspalms** command to display a summary of the active line alarms on the current CESM or MPSM card.

Syntax

dspalms -<*lineType*>

Syntax Description

lineType	Line type of the card you want to display the active line alarms. Line type is ds1.

Related Commands

clralm, clralmcnt, clralmcnts, clralms, dspalm, dspalmcnf, dspalmcnt, xcnfalm

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the line alarms on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspalms -ds1

  Line  AlarmState   StatisticalAlarmState
  ----  -----------  ---------------------
  20.1  No Alarms    No Statistical Alarms
  20.2  No Alarms    No Statistical Alarms
  20.3  No Alarms    No Statistical Alarms
  20.4  Alarm(s) On  No Statistical Alarms
  20.5  Alarm(s) On  No Statistical Alarms
  20.6  Alarm(s) On  No Statistical Alarms
  20.7  Alarm(s) On  No Statistical Alarms
  20.8  No Alarms    No Statistical Alarms


PXM1E_SJ.1.20.CESM.a >
```

dspbert

Display Bit Error Rate Testing—MPSM-8T1-CES, MPSM-8E1-CES

Use the **dspbert** command to view the parameters configured with the **cnfbert** command and to view the status of the current BERT session.

Syntax

dspbert <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number to be viewed using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

clrbertstats, cnfbert, delbert, dspbertstats, insbiterror, startbert, stopbert

Attributes

Log: No State: Active Privilege: Group 1

Example

Display the BERT session configured on line 1 of the MPSM-8T1-CES card in slot 28.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbert 1.0

 Interface Number   : 1.0
 Loopback Code      : LineInBand
 Pattern            : TwoE7MinusOne
 ErrorInsertRate    : OneInTenThousand
 Start Date/Time    : Not Started
 Operational Status : Out Of Sync


M8850_SF.1.28.MPSM8T1.CES.a >
```

dspbertstats

Display Bit Error Rate Testing Statistics—MPSM-8T1-CES, MPSM-8E1-CES

Use the **dspbertstats** command to view statistics for the Bit Error Rate Test configured on the current card. This command can be used to view changing statistics while the Bit Error Rate Test is running or it can be used after testing has stopped to view the total statistics accumulated during the test period.

Syntax

dspbertstats <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number on which to view BERT statistics using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

clrbertstats, cnfbert, delbert, dspbert, insbiterror, startbert, stopbert

Attributes

Log: No	State: Active	Privilege: Group 1

Example

Display the statistics for the Bit Error Rate Testing running on line 1 of the MPSM-8T1-CES card in slot 28.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspbertstats 1.0

 Interface Number          : 1.0
 Rx Bit Count              : 0
 Rx Bit Error Count        : 0
 Sync Loss Transition      : 0
 Pattern Loss Count (secs) : 7


M8850_SF.1.28.MPSM8T1.CES.a >
```

dspcd

Display Card—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspcd** command to display information regarding the hardware, software, and operational status of the current CESM or MPSM card.

Tip To determine if a card is a CESM-8T1/B, refer to the *FunctionModuleType:* row in the **dspcd** command display.

Tip You can also display card information by entering the **dspcd** command on the PXM1E and PXM45 with the appropriate slot number. For example: **dspcd** 20. The command report that appears is different from the report that appears when you enter the **dspcd** command on the CESM or MPSM card. The **dspcd** <*slot_num*> command on the PXM1 supports only the SRM card in slots 15, 16, 31, and 32.

Syntax

dspcd

Syntax Description

None

Related Commands

version

Attributes

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display information for the current MPSM-8T1-CES card. The MPSM card in this example does not have a back card present.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspcd


  ModuleSlotNumber:           28
  FunctionModuleState:        Active
  FunctionModuleType:         MPSM-8T1-CES
  FunctionModuleSerialNum:    SAG07208RRA
  FunctionModuleHWRev:        02
  FunctionModuleFWRev:        030.000.001.077-A
  FunctionModuleResetReason:  Reset by PXM
  LineModuleType:             ?
  LineModuleState:            Not Present
  mibVersionNumber:           100
  configChangeTypeBitMap:     No changes
  cardIntegratedAlarm:        Major
```

```
  cardMajorAlarmBitMap:      Line Alarm

      Front Card Info

  PCB PART NO-(800 LEVEL):   800-22480-04
  PCB PART_NO-(73 LEVEL):    73-8466-04
  PCB REVISION (800 LEVEL):
  PCB SERIAL NO:             SAG07208RRA
  CLEI CODE:                 0
  MANUFACTURING ENG:         0x0
  RMA TEST HISTORY:          0x0

      Back Card Info

  PCB PART NO-(800 LEVEL):   ??
  PCB PART NO-(73 LEVEL):    ??
  PCB REVISION (800 LEVEL):  ??
  FAB PART NO-(28 LEVEL):    ??
  PCB SERIAL NO:             ??
  CLEI CODE:                 ??
  MANUFACTURING ENG:         ??
  RMA HISTORY:               ??

M8850_SF.1.28.MPSM8T1.CES.a >
```

Display information for the current MPSM card from the active PXM45.

```
M8850_SF.7.PXM.a > dspcd 28
M8850_SF                          System Rev: 04.09   Dec. 16, 2003 21:27:43 GMT
MGX8850                                               Node Alarm: CRITICAL
Slot Number:   28   Redundant Slot: NONE

                   Front Card           Back Card
                   ----------           ---------
Inserted Card:      MPSM_8T1_CES        ---
Reserved Card:      MPSM_8T1_CES        UnReserved
State:              Active              Empty
Serial Number:      SAG07208RRA         ---
Prim SW Rev:        30.0(1.77)A         ---
Sec SW Rev:         30.0(1.77)A         ---
Cur SW Rev:         30.0(1.77)A         ---
Boot FW Rev:        30.0(1.77)A         ---
800-level Rev:      02                  ---
800-level Part#:    800-22480-04        ---
CLEI Code:          0                   ---
Reset Reason:       On Reset from PXM
Card Alarm:         MAJOR
Failed Reason:      None
Miscellaneous Information:

Crossbar Slot Status:      No Crossbar

Alarm Causes
------------
    Line                                     : ALARM

Backcard Mismatch/Failed Reasons
---------------------------------

Upper Card
----------
    NO MISMATCH
```

```
Lower Card
----------
    NO MISMATCH

M8850_SF.7.PXM.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display information for the current CESM-8T1/B card.

```
M8850_SF.1.26.CESM.a > dspcd


  ModuleSlotNumber:          26
  FunctionModuleState:       Active
  FunctionModuleType:        CESM-8T1/B
  FunctionModuleSerialNum:   B24356
  FunctionModuleHWRev:       aa
  FunctionModuleFWRev:       021.000.001.193-A
  FunctionModuleResetReason: Reset by PXM
  LineModuleType:            LM-RJ48-8T1
  LineModuleState:           Present
  mibVersionNumber:          82
  configChangeTypeBitMap:    CardCnfChng, LineCnfChng
  cardIntegratedAlarm:       Clear

       Front Card Info

  Hardware Revision      :   AA
  Card Type              :   787
  Serial Number          :   B24356
  Fab Number             :   28-4253-01

       Back Card Info

  Hardware Revision      :   AA
  Card Type              :   22
  Serial Number          :   648395
  Fab Number             :   28-2011-01
```

Display information for the current CESM-8T1/B card from the active PXM45.

```
M8850_SF.7.PXM.a > dspcd 26
M8850_SF                         System Rev: 03.09   Dec. 19, 2002 00:10:47 GMT
MGX8850                                              Node Alarm: MAJOR
Slot Number:   26   Redundant Slot: NONE

                   Front Card           Back Card
                   ----------           ---------
Inserted Card:      CESM_8T1/B          RJ48_8T1
Reserved Card:      CESM_8T1/B          UnReserved
State:              Active              Active
Serial Number:      B24356              648395
Prim SW Rev:        21.0(1.95)A         ---
Sec SW Rev:         21.0(1.95)A         ---
Cur SW Rev:         21.0(1.95)A         ---
Boot FW Rev:        1.0(2.0)            ---
800-level Rev:      00                  00
800-level Part#:    000-00000-00        000-00000-00
CLEI Code:          N.A                 N.A
Reset Reason:       On Reset from PXM
Card Alarm:         NONE
Failed Reason:      None
```

```
Miscellaneous Information:

Crossbar Slot Status:      No Crossbar

Alarm Causes
------------
    NO ALARMS

Backcard Mismatch Reasons
-------------------------

Upper Card
----------
    NO MISMATCH

Lower Card
----------
    NO MISMATCH

M8850_SF.7.PXM.a >
```

dspcderrs

Display Hardware Errors in BRAM—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspcderrs** command to display card-related errors on a CESM or MPSM card.

Syntax

dspcderrs

Syntax Description

None

Related Commands

clrcderrs

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display any card errors for the current CESM card. No response messages appear on screen when there are no errors on the CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspcderrs

PXM1E_SJ.1.20.CESM.a >
```

Display any card errors for the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspcderrs

No event log messages

M8850_SF.1.28.MPSM8T1.CES.a >
```

dspcdparms

Display Card Parameters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspcdparms** command to display parameters configured on the current card.

Syntax

dspcdparms

Syntax Description

None

Related Commands

cnfcdparms

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Active	Privilege: Group 1

Example

Display the parameters configured on the current card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspcdparms
CARD CONFIGURATION OPTIONS
Opt#  Value       Type           Description
----  -----       ----           -----------
1     No          Boolean        Send Old Config Change Trap
```

dspcdprtntype

Display Card Resource Type (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspcdprtntype** command to display the LCN partition type configured on the current CESM or MPSM card.

Syntax

dspcdprtntype

Syntax Description

None

Related Commands

cnfcdprtntype, xcnfcdprtntype

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Active	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

Display the LCN partition type configured on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspcdprtntype


   cardLcnPartitionType: port controller based

M8250_SJ.1.22.MPSM8T1.CES.a >
```

dspcdrscprtn

Display Card Resource Partition (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspcdrscprtn** command to view the card-level resources allocated to each resource partition configured on the current CESM or MPSM card.

Syntax

dspcdrscprtn

Syntax Description

None

Related Commands

addcdrscprtn, **cnfcdrscprtn**, **delcdrscprtn, xcnfcdrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Active	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display the number of LCNs available for each of the resource partitions configured on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspcdrscprtn

User   NumOfLcnAvail
------  -------------
   PAR         192
   PNNI        192
   TAG         192


M8250_SJ.1.22.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display the number of LCNs available for each of the resource partitions configured on the current CESM card.

```
M8250_SJ.1.4.CESM.a > dspcdrscprtn

   User   Status  NumOfLcnAvail
  ------  ------  -------------
   PAR     Add         192
   PNNI    Add         192
   TAG     Add         192


M8250_SJ.1.4.CESM.a >
```

dspchan

Display Channel—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspchan** command to display configuration and operational data for a connection. This command produces the same report as the **dspcon** command, but you can specify the connection using the channel number instead of using the port number.

Syntax

dspchan <*chan_num*>

Syntax Description

chan_num	Specify the channel for the connection to be displayed. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchans**, **dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display the connection information for channel 35 on the current CESM card.

```
M8850_SF.1.26.CESM.a > dspchan 35

  -------------------------------------------
  ChNum:   35         RowStatus: Mod
  AdmnState: Up       ChanState: Ok
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO         NO         NO         NO
```

```
  -------------------------------------------

  ChanNum:                   35
  ChanRowStatus:             Mod
  ConnAdminStatus:           Up
  ChanLineNum:               1
  ChanMapVpi:                26
  ChanMapVci:                35
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
  ChanCAS:                   Basic
  ChanPartialFill:           47
  ChanMaxBufSize:            192 bytes
  ChanCDVT:                  1000 micro seconds
  C L I P:                   2500 milliseconds
  ChanLocalRemoteLpbkState:  Disabled
  ChanTestType:              TestOff
  ChanTestState:             NotInProgress
  ChanRTDresult:             65535 ms
  ChanPortNum                1
  ChanConnType               SPVC
  ISDetType                  DetectionDisabled
  CondData                   255
  CondSignalling             15
  ExtISTrig                  DisableIdleSupression
  ISIntgnPeriod              3 seconds
  ISSignallingCode           0
  OnHookCode                 1
  ChanLocalVpi:              26
  ChanLocalVci:              35
  ChanLocalNSAP:             47009181000000000164444b6100000107d30100
  ChanRemoteVpi:             0
  ChanRemoteVci:             0
  ChanRemoteNSAP:            NULL NSAP
  ChanMastership:            Slave
  ChanVpcFlag:               Vcc
  ChanConnServiceType:       CBR1
  ChanRoutingPriority:       8
  ChanPreferredRouteId:      0
  ChanDirectedRoute:         No
  ChanMaxCost:               2147483647
  ChanRestrictTrunkType:     No Restriction
  ChanConnPCR:               2048
  ChanConnMCR:               2048
  ChanConnPercentUtil:       100
  Channel Reroute:           False
  ChanLineConditionState:    Disabled

  ChanNumNextAvailable:  38

M8850_SF.1.26.CESM.a >
```

Example: PXM1

Display the connection information for channel 32 on the current CESM card.

```
M8250_SJ.1.3.CESM.a > dspchan 32

  ChanNum:                   32
  ChanRowStatus:             Mod
  ChanLineNum:               1
  ChanMapVpi:                3
  ChanMapVci:                32
```

```
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
  ChanCAS:                   Basic
  ChanPartialFill:           47
  ChanMaxBufSize:            192 bytes
  ChanCDVT:                   1000 micro seconds
  C L I P:                   2500 milliseconds
  ChanLocalRemoteLpbkState:  Disabled
  ChanTestType:              TestOff
  ChanTestState:             NotInProgress
  ChanRTDresult:             65535 ms
  ChanPortNum                1
  ChanConnType               PVC
  ISDetType                  DetectionDisabled
  CondData                   255
  CondSignalling             15
  ExtISTrig                  DisableIdleSupression
  ISIntgnPeriod              3 seconds
  ISSignallingCode           0
  OnHookCode                 1
  ChanLocalVpi:              0
  ChanLocalVci:              0
  ChanLocalNSAP:             4d383235305f534a000000000000000003000100
  ChanRemoteVpi:             11
  ChanRemoteVci:             100
  ChanRemoteNSAP:            4d383235305f534a000000000000000000000100
  ChanMastership:            Master
  ChanVpcFlag:               Vcc
  ChanConnServiceType:       CBR
  ChanRoutingPriority:       1
  ChanMaxCost:               2147483647
  ChanRestrictTrunkType:     No Restriction
  ChanConnPCR:               2048
  ChanConnMCR:               2048
  ChanConnPercentUtil:       100
  ChanLineConditionState:    Disabled

  ChanNumNextAvailable:  33

M8250_SJ.1.3.CESM.a >
```

dspchancnt

Display Channel Count—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspchancnt** command to display statistics information for a connection. Use this command to view the traffic being processed on a specific connection. Because the statistics are historical, you might want to clear them using the **clrchancnt** or **clrchancnts** command before beginning your testing or troubleshooting.

Syntax

dspchancnt <*chan_num*>

Syntax Description

chan_num	Specify the channel for the connection to be displayed. You can view channel information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, clrchancnt, clrchancnts, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans**, **dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xclrchancnt, xdspchancnt, xdspchan, xdspchans**

Attributes

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display the connection status and statistics for channel 35 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspchancnt 35

ChanNum:                    35
Chan State:                 Failed
Chan RCV ATM State:         Other State
Chan XMT ATM State:         Sending AIS OAM
Cell Loss Status:           Cell Loss
```

```
Reassembled Cells:          0
Generated Cells:            33038
Header Errors:              0
Seqence Mismatches :        0
Lost Cells:                 0
Pointer Reframes:           0
Buffer Underflows:          0
Underflow Inserted Cells:   32951
Buffer Overflows:           0
Overflow Drop Bytes:        0
Channel Uptime (secs.)      8
Signalling Status           Offhook


M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display the connection status and statistics for channel 36 on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspchancnt 36

ChanNum:                    36
Chan State:                 Okay
Chan RCV ATM State:         Normal
Chan XMT ATM State:         Normal
Cell Loss Status:           No Cell Loss
Reassembled Cells:          84578237
Generated Cells:            84690662
Header Errors:              0
Seqence Mismatches :        0
Lost Cells:                 1
Channel Uptime (secs.)      20676
Signalling Status           Offhook


PXM1E_SJ.1.4.CESM.a >
```

dspchans

Display Channels—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspchans** command to display a summary of all the connections on the current CESM or MPSM card.

Syntax

dspchans

Syntax Description

None

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, dncon, dspchan, dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xcnfcon, xdspchan, xdspchans

Attributes

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display all connections configured on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspchans

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.04.035   stru S   Synch 4096   00500 00384 02500 Up    OK
  0036 002.04.036   stru M   Synch 4096   01000 00384 02500 Up    OK
  0037 003.04.037   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT

  Number of channels:    3

  ChanNumNextAvailable:  38

PXM1E_SJ.1.4.CESM.a >
```

Example: PXM1

Display all connections configured on the current MPSM card. Connection information found in the *ConnID* column is in the format *Nodename.Slot.Port.0*.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspchans

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     1 M8250_SJ.22.1.0       32   Mod     1000   384    2500   struct Alarm

  ChanNumNextAvailable:  33

M8250_SJ.1.22.MPSM8T1.CES.a >
```

dspcon

Display Connection—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **dspcon** command to view configuration data for a connection.

Syntax

dspcon <*port*>

Syntax Description

port	Enter the port number for the connection to be displayed. To display a list of connections with port numbers, enter the **dspcons** or **dspchans** command. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248 **Tip** On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans**, **dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display the connection parameters for a connection configured on port 1 of the current CESM card.

```
M8850_SF.1.26.CESM.a > dspcon 1

  -------------------------------------------
  ChanNum:   35         RowStatus: Mod
  AdmnState: Up         ChanState: Ok
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO         NO         NO         NO
  -------------------------------------------

  ChanNum:                  35
  ChanRowStatus:            Mod
  ConnAdminStatus:          Up
  ChanLineNum:              1
  ChanMapVpi:               26
```

```
  ChanMapVci:                35
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
  ChanCAS:                   Basic
  ChanPartialFill:           47
  ChanMaxBufSize:            192 bytes
  ChanCDVT:                  1000 micro seconds
  C L I P:                   2500 milliseconds
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:              TestOff
  ChanTestState:             NotInProgress
  ChanRTDresult:             65535 ms
  ChanPortNum                1
  ChanConnType               SPVC
  ISDetType                  DetectionDisabled
  CondData                   255
  CondSignalling             15
  ExtISTrig                  DisableIdleSupression
  ISIntgnPeriod              3 seconds
  ISSignallingCode           0
  OnHookCode                 1
  ChanLocalVpi:              26
  ChanLocalVci:              35
  ChanLocalNSAP:             47009181000000000164444b6100000107d30100
  ChanRemoteVpi:             0
  ChanRemoteVci:             0
  ChanRemoteNSAP:            NULL NSAP
  ChanMastership:            Slave
  ChanVpcFlag:               Vcc
  ChanConnServiceType:       CBR1
  ChanRoutingPriority:       8
  ChanPreferredRouteId:      0
  ChanDirectedRoute:         No
  ChanMaxCost:               2147483647
  ChanRestrictTrunkType:     No Restriction
  ChanConnPCR:               2048
  ChanConnMCR:               2048
  ChanConnPercentUtil:       100
  Channel Reroute:           False
  ChanLineConditionState:    Disabled

  ChanNumNextAvailable:  38

M8850_SF.1.26.CESM.a >
```

Example: PXM1

Display the connection parameters for a connection configured on port 1 of the current CESM card.

```
M8250_SJ.1.3.CESM.a > dspcon 1

  ChanNum:                   32
  ChanRowStatus:             Mod
  ChanLineNum:               1
  ChanMapVpi:                3
  ChanMapVci:                32
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
  ChanCAS:                   Basic
  ChanPartialFill:           47
  ChanMaxBufSize:            192 bytes
  ChanCDVT:                   1000 micro seconds
  C L I P:                   2500 milliseconds
```

```
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:             TestOff
  ChanTestState:            NotInProgress
  ChanRTDresult:            65535 ms
  ChanPortNum               1
  ChanConnType              PVC
  ISDetType                 DetectionDisabled
  CondData                  255
  CondSignalling            15
  ExtISTrig                 DisableIdleSupression
  ISIntgnPeriod             3 seconds
  ISSignallingCode          0
  OnHookCode                1
  ChanLocalVpi:             0
  ChanLocalVci:             0
  ChanLocalNSAP:            4d383235305f534a000000000000000003000100
  ChanRemoteVpi:            11
  ChanRemoteVci:            100
  ChanRemoteNSAP:           4d383235305f534a000000000000000000000100
  ChanMastership:           Master
  ChanVpcFlag:              Vcc
  ChanConnServiceType:      CBR
  ChanRoutingPriority:      1
  ChanMaxCost:              2147483647
  ChanRestrictTrunkType:    No Restriction
  ChanConnPCR:              2048
  ChanConnMCR:              2048
  ChanConnPercentUtil:      100
  ChanLineConditionState:   Disabled

  ChanNumNextAvailable:  33

M8250_SJ.1.3.CESM.a >
```

dspcons

Display Connections—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **dspcons** command to view a summary of all connections on the current card. On the PXM1E and PXM45 platform, this command may also be used to list all the connections that meet a specific connection parameter.

Syntax: PXM1E, PXM45

dspcons [-h] [-chn <*ChanNum*>] [-pt <*PortNum*>] [-locvpi <*localVPI*>] [-locvci <*localVCI*>] [-cbrserv <*CBRService*>] [-master <*masterShip*>] [-clkmode <*MODE*>] [-pcr <*PCR*>] [-cdv <*CDVT*>] [-maxbuf <*SIZE*>] [-clip <*CLIP*>] [-admin <*ConnAdminStatus*>] [-alarm <*ConnAlarmStatus*>]

Syntax: PXM1

dspcons

Syntax Description

Note The Flags can be preceded by "no" to negate the user value. For example, the same output would be given by entering both of the following commands at the CLI: **dspcons -admin** *Up*, and **dspcons -noadmin** *Down*.

-h	Display the list of additional command options. **Note** The additional command options are supported only on PXM1E and PXM45 platforms.
-chn	Channel number. Use this option to limit the display to a specific channel. To view the configured channel numbers, use the **dspcons** command without any options. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** command.
-pt	Port number. This option limits the display to the connections on the specified port. To view the configured ports, use the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
-locvpi	Connection local VPI number. This option limits the display to the connections that use the specified local VPI number. To view the configured VPI numbers, use the **dspcons** command without any options. Range = 1 to 65536.
-locvci	Connection local VCI number. This option limits the display to the connections that use the specified local VCI number. To view the configured VCI numbers, use the **dspcons** command without any options. Range = 1 to 65536.

-cbrserv	CBR service type. This option limits the display to the connections that use one of the following service types: • Unstructured = unstruct • Structured = struct
-master	Mastership. This option allows you to limit the display to connections for which the local endpoint is either a master endpoint or a slave endpoint. To use this option, enter either **-master Master** or **-master Slave**.
-clkmode	Clock mode. Use this option to select connections based on the clock mode they are using: • Synchronous • S.R.T.S • Adaptive
-pcr	PCR. This option allows you to limit the display to connections with a specific PCR value. Range = 171 to 9000.
-cdv	Cell delay variation tolerance. This option allows you to limit the display to connections with a specific CDVT value. • T1 range = 125 to 24000 • E1 range = 125 to 26000
-maxbuf	Maximum egress buffer size. This option allows you to limit the display to connections with a specific buffer size. Range = 0 to 65535.
-clip	Cell loss integration period. This option allows you to limit the display to connections with a specific CLIP period. Range = 1000 to 65535.
-admin	Administrative status. Use this option to limit the display to those connections that are either administratively up or administratively down. To use this option, enter either **-admin Up** or **-admin Down**.
-alarm	Alarm type. Use this option to limit the display to connections that meet a specific alarm condition. To select the alarm condition, enter the option with one of the following keywords: • OK • PORT-ALARM • CTRLR-ABIT • E-AIS • RDI • CELL-LOSS

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans**, **dspcons, dspports, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display the connections on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspcons

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.04.035   stru S   Synch 4096   00500 00384 02500 Up    OK
  0036 002.04.036   stru M   Synch 4096   01000 00384 02500 Up    OK
  0037 003.04.037   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT

  Number of channels:    3

  ChanNumNextAvailable:  38

PXM1E_SJ.1.4.CESM.a >
```

Example: PXM1

Display the connections on the current CESM card. The port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0*.

```
M8250_SJ.1.3.CESM.a > dspcons

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     1 M8250_SJ.3.1.0        32   Add     1000   192    2500   struct  Okay

  ChanNumNextAvailable:  33

M8250_SJ.1.3.CESM.a >
```

dspdiagresults

Display Diagnostic Results—MPSM-8T1-CES, MPSM-8E1-CES

Enter the **dspdiagresults** command to display the results of diagnostic tests configured for the current card.

Syntax

dspdiagresults

Syntax Description

None

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the results of the diagnostics tests that were enabled on the current card.

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspdiagresults

Online Diagnostic tests RUNNING.

ID Name                          Enable    Attempts   FailCnt   Result
-- ----------------------------- -------   --------   -------   -------
1  Boot Checksum                 Yes          1          0       Pass
2  Front card NVRAM Checksum     Yes          1          0       Pass
3  CPU Performance Monitor       Yes         185         0       Pass
4  NP Performance Monitor        Yes         185         0       Pass
5  SLFP Access                   Yes         185         0       Pass
6  MPCTL Access                  Yes         185         0       Pass
7  FRAMER Access                 Yes         185         0       Pass
8  LDRAM Memory Availability     Yes         185         0       Pass
9  Host Memory Availability      Yes          31         0       Pass
10 Packet Memory Availability    Yes          31         0       Pass
11 Internal Memory Availability  Yes          31         0       Pass
12 Parameter Memory Availability Yes          31         0       Pass
13 Host Memory Access            Yes         921         0       Pass
14 Packet Memory Access          Yes         185         0       Pass
15 Parameter Memory Access       Yes         185         0       Pass
16 MPCTL Error Monitor           Yes         185         0       Pass
17 NP Error Monitor              Yes         185         0       Pass
```

```
18 NP Health Check                Yes         185        0       Pass
19 MPCTL Loopback                 Yes         921        0       Pass
20 PXM Data Path Loopback Test    Yes         921        0       Pass
21 NP TDM Loopback Test           No           0         0       N/A
22 SLFP TDM Loopback Test         No           0         0       N/A
23 Framer Loopback Test           No           0         0       N/A


M8250_SJ.1.6.MPSM8T1.CES.a >
```

dspdiagtests

Display Diagnostic Tests—MPSM-8T1-CES, MPSM-8E1-CES

Enter the **dspdiagtests** command to view the complete list of available online diagnostic tests configured on the current MPSM card. Using this command with the Test ID number option will give detailed information about a specific online diagnostic test.

Syntax

dspdiagtests [<*TestId*>]

Syntax Description

TestId	Using this option will give detailed information about each individual diagnostic test. Enter the **dspdiagtests** command to view the diagnostic tests available and the associated test ID numbers.

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the list of available diagnostic tests configured on the MPSM-8T1-CES in slot 6.

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspdiagtests

ID Name                            Enable   Role   StartTOD   Period  Iteratns
-- ----------------------------    -------  ------ --------    ------  --------
1  Boot Checksum                    No      Active    NOW       1440  FOREVER
2  Front card NVRAM Checksum        No      Active    NOW       1440  FOREVER
3  CPU Performance Monitor          No      Active    NOW         5   FOREVER
4  NP Performance Monitor           No      Active    NOW         5   FOREVER
5  SLFP Access                      No      Active    NOW         5   FOREVER
6  MPCTL Access                     No      Active    NOW         5   FOREVER
7  FRAMER Access                    No      Active    NOW         5   FOREVER
8  LDRAM Memory Availability        No      Active    NOW         5   FOREVER
9  Host Memory Availability         No      Active    NOW        30   FOREVER
10 Packet Memory Availability       No      Active    NOW        30   FOREVER
11 Internal Memory Availability     No      Active    NOW        30   FOREVER
12 Parameter Memory Availability    No      Active    NOW        30   FOREVER
13 Host Memory Access               No      Active    NOW         1   FOREVER
14 Packet Memory Access             No      Active    NOW         5   FOREVER
15 Parameter Memory Access          No      Active    NOW         5   FOREVER
16 MPCTL Error Monitor              No      Active    NOW         5   FOREVER
17 NP Error Monitor                 No      Active    NOW         5   FOREVER
18 NP Health Check                  No      Active    NOW         5   FOREVER
19 MPCTL Loopback                   No      Active    NOW         1   FOREVER
```

```
20 PXM Data Path Loopback Test      No      Active    NOW        1    FOREVER
21 NP TDM Loopback Test             No      Active    NOW        30   FOREVER
22 SLFP TDM Loopback Test           No      Active    NOW        30   FOREVER
23 Framer Loopback Test             No      Active    NOW        30   FOREVER

Online Diagnostic tests RUNNING.

M8250_SJ.1.6.MPSM8T1.CES.a >
```

Display detailed information about online diagnostic test 12 on the MPSM-8T1-CES card in slot 6.

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspdiagtests 12

Test Name: Parameter Memory Availability
Function: Monitors the available Parameter memory.
          Input Parameters:
           Threshold for available memory: 0 - 100%
           NP ID: 0 for MPSM-8T1E1, 0/1/2(Both NP) for MPSM-16T1E1
Alarm Raised on Failure: Major
Recovery Action: N.A
Role: Active
Enable: Yes
StartTOD: NOW
Period: 30
Iterations: FOREVER
Configured Parameters:  15, 0

M8250_SJ.1.6.MPSM8T1.CES.a >
```

dspds1stats

Display DS1 Statistics—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspds1stats** command to display a list of statistics for a specific DS1 line on the current CESM or MPSM card.

Syntax

dspds1stats <*line_num*>

Syntax Description

line_num	Line number for the line for which you want to display statistics. Use the **dsplns** command to view the available lines.

Related Commands

clrds1stats, dspstatparms

Attributes

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display the DS1 statistics for line 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspds1stats -ds1 1

  LineNum:               1
  lCVCurrent:            0
  lCVLast15minBucket:    0
  lCVLast24hrBucket:     0
  lESCurrent:            0
  lESLast15minBucket:    0
  lESLast24hrBucket:     0
  lSESCurrent:           0
  lSESLast15minBucket:   0
  lSESLast24hrBucket:    0
  cRCCurrent:            0
  cRCLast15minBucket:    0
  cRCLast24hrBucket:     0
  cRCESCurrent:          0
  cRCESLast15minBucket:  0
  cRCESLast24hrBucket:   0
  cRCSESCurrent:         0
  cRCSESLast15minBucket: 0
  cRCSESLast24hrBucket:  0
  sEFSCurrent:           0
  sEFSLast15minBucket:   0
  sEFSLast24hrBucket:    0
  aISSCurrent:           0
  aISSLast15minBucket:   0
  aISSLast24hrBucket:    0
```

```
  uASCurrent:            745
  uASLast15minBucket:    900
  uASLast24hrBucket:     86400
  percentEFS:            99
  RcvLOSCount:           1
  RcvOOFCount:           1
  RcvRAICount:           0
  RcvFECount:            0


M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display the DS1 statistics for line 8 on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspds1stats 8

LineNum:                   8
Errored Seconds            1
Severely Errored Seconds   0
Unavailable Seconds        0
Line Code Violation        0
CRC Errors                 2


PXM1E_SJ.1.20.CESM.a >
```

dspfeature

Display Feature—CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspfeature** command to determine if the CESM card is operating as a channelized card or a nonchannelized card.

Note This command is not supported on the MPSM-8T1-CES or MPSM-8E1-CES cards. To display what features have been enabled on the MPSM card use the **dspliccd** command.

Syntax

dspfeature

Syntax Description

None

Related Commands

dspliccd

Attributes

Log: No	State: Any	Privilege: Cisco Group

Example

Display the feature status of the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspfeature


  Channelized:  On

PXM1E_SJ.1.20.CESM.a >
```

dsplcn

Display Logical Channel Number—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dsplcn** command to display the logical channel number when you know the port number for the connection.

Syntax

dsplcn <*port*>

Syntax Description

port	Specify the port associated with the logical channel number to be displayed. You can view connection information with the **dspcons** and **dspchans** commands, which also show the corresponding channel numbers. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248 **Tip** On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** and **dspchans** commands.

Related Commands

dspchans, **dspcons**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Any	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Active	Privilege: Any User

Example

Display the channel number for the connection using port 1.

```
PXM1E_SJ.1.4.CESM.a > dsplcn 1

LCN number is : 35

PXM1E_SJ.1.4.CESM.a >
```

dspliccd

Display Card Licenses—MPSM-8T1E1, MPSM-8T1-CES, MPSM-8E1-CES

Use the **dspliccd** command to display the details of feature licenses both in use and programmed into the NVRAM of the MPSM-8T1E1 card.

Tip After installation of the MPSM-8T1E1 card, enter the **movelic** command to move the programmed feature licenses from the MPSM card to the PXM license pool so that the feature licenses are made available for use.

Note The rate control feature license is the only feature license available for the MPSM-8T1E1 card. This feature license is used by the MPSM-8T1E1 card when configured for Frame Relay services.

Syntax

dspliccd

Syntax Description

None

Related Commands

movelic

Attributes

Log: No	State: Any	Privilege: Any User

Example

Use the **dspliccd** command to display the details of feature licenses on the MPSM-8T1-CES card in slot 6.

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspliccd

Card License Alarm:              None
Service Module Type:             MPSM8T1E1
Service Module Serial Number:    SAG07208RRA
Provisioning (addcon) Allowed:   YES
=========================================================
Needed License Type               Needed Licenses
-------------------               ---------------

=========================================================
Allocated License Type            Allocated licenses
----------------------            ------------------

=========================================================
Programmed  License Type          Programmed licenses
```

```
------------------------          -------------------
Rate-Control                      1

=========================================================
Programmed License Registered: YES
License registration node: M8250_SJ
License registration chassis: SCA05020GGR
=========================================================

M8250_SJ.1.6.MPSM8T1.CES.a >
```

dspln

Display Line—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **dspln** command to view the characteristics of a specified physical line.

Syntax

dspln <*line_num*>

Syntax Description

line_num	Line number for the line you want to display. Use the **dsplns** command to view the available lines.

Related Commands

addln, **addlnloop, cnfln**, **delln, dellnloop, dsplns, xcnfln, xdspln, xdsplns**

Attributes

Log: No State: Any Privilege: Any User

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display line 8 on the current CESM-8T1 card.

```
PXM1E_SJ.1.20.CESM.a > dspln 8

  LineNum:                    8
  LineConnectorType:          RJ-48
  LineEnable:                 Modify
  LineType:                   dsx1ESF
  LineCoding:                 dsx1B8ZS
  LineLength:                 0-131 ft
  LineXmtClockSource:         LocalTiming
  LineLoopbackCommand:        LocalLineLoop
  LineSendCode:               NoCode
  LineUsedTimeslotsBitMap:    0x0
  LineLoopbackCodeDetection:  codeDetectDisabled

  LineNumOfValidEntries: 8

PXM1E_SJ.1.20.CESM.a >
```

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display line 1 on the current MPSM-8T1-CES card. The output of the **dspln** command on the MPSM card is the same as the output of the 8 port CESM card with the addition of the status of Bit Error Rate Testing.

```
M8250_SJ.1.6.MPSM8T1.CES.a > dspln 1

  LineNum:                    1
  LineConnectorType:          RJ-48
```

```
  LineType:                   dsx1ESF
  LineEnable:                 Enabled
  LineCoding:                 dsx1B8ZS
  LineLength:                 0-131 ft
  LineXmtClockSource:         LocalTiming
  LineLoopbackCommand:        NoLoop
  LineSendCode:               NoCode
  LineUsedTimeslotsBitMap:    0x0
  LineLoopbackCodeDetection: codeDetectDisabled
  LineBERTEnable:             Disable

  LineNumOfValidEntries: 8

M8250_SJ.1.6.MPSM8T1.CES.a >
```

dsplns

Display Lines—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dsplns** command to view a summary of all lines on the current card. To view more information about a single line, use the **dspln** command.

Syntax

dsplns

Syntax Description

None

Related Commands

addln, **cnfln**, **delln**, **dspln, xcnfln, xdspln, xdsplns**

Attributes

Log: No State: Any Privilege: Any User

Example

Display lines on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dsplns

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  20.1  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  20.2  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  20.3  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  20.4  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  Yes   No
  20.5  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  20.6  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  20.7  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  20.8  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim

  LineNumOfValidEntries: 8

PXM1E_SJ.1.20.CESM.a >
```

dspmsgcnt

Display Message Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspmsgcnt** command to display the message counters for the current CESM and MPSM card.

Syntax

dspmsgcnt

Syntax Description

None

Related Commands

clrmsgcnt

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the message counters for the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspmsgcnt


  RiscXmtCtrlMsg:            56341
  RiscRcvCtrlMsg:            56341
  SARXmtCtrlMsg:             56341
  SARRcvCtrlMsg:             56341
  SARCtrlMsgDiscLenErr:      0
  SARCtrlMsgDiscCRCErr:      0
  SARCtrlMsgDiscUnknownChan: 0
  SARCtrlMsgLastUnknownChan: 0

PXM1E_SJ.1.20.CESM.a >
```

dspport

Display Port—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **dspport** command to view the port configuration for the specified port.

Syntax

dspport <*port_num*>

Syntax Description

port_num	Enter the port number for the connection you want to display. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

Related Commands

addport, **delport, delports, dspports, xcnfport, xdspport, xdspports**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display port 4 on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspport 4

  SlotNum:                      4
  PortLineNum:                  4
  PortNum:                      4
  PortRowStatus:                Add
  PortNumOfSlots:               12
  PortDs0ConfigBitMap(1stDS0):  0xfff(1)
  PortSpeed:                    768kbps
  PortType:                     structured
  PortState:                    Active


PXM1E_SJ.1.4.CESM.a >
```

dspportrscprtn

Display Port Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B (PXM1 only), CESM-8T1 (PXM1 only), CESM-8E1 (PXM1 only)

Use the **dspportrscprtn** command to view the port-level resource partitions on the current CESM or MPSM card.

Syntax: PXM1E/PXM45

dspportrscprtn <*port_num*>

Syntax: PXM1

dspportrscprtn

Syntax Description

port_num	Enter the port number for the resource partition you want to display. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • MPSM-8T1-CES range: 1–192 • MPSM-8E1-CES range: 1–248

Related Commands

cnfportrscprtn, **dsprscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Active	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display the port-level resource partitions on port 1 of the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dspportrscprtn 1

  Port  User   Status  NumOfLcnAvail   LcnLow   LcnHigh   IngrBW  EgrBW CtrlrId
  ---- ------ ------ --------------  -------- ---------  ------  ----- --------
   1    PNNI   Add          1           1         1        100     100    2


M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: PXM1

Display the port-level resource partitions on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dspportrscprtn

  Port  User  Status  NumOfLcnAvail   LcnLow   LcnHigh   IngrBW  EgrBW
  ---- ------ ------ --------------  -------- ---------  ------  -----
   1    PAR    Add          1           0         0        100     100
   1    PNNI   Add          1           0         0        100     100
   1    TAG    Add          1           0         0        100     100
   2    PAR    Add          1           0         0        100     100
   2    PNNI   Add          1           0         0        100     100
   2    TAG    Add          1           0         0        100     100
   3    PAR    Mod          1           0         0        100     100
   3    PNNI   Add          1           0         0        100     100
   3    TAG    Mod          1           0         0        100     100


M8250_SJ.1.22.MPSM8T1.CES.a >
```

dspports

Display Ports—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **dspports** command to view information about all ports on the current card. In the output of the **dspports** command, the port number is found in the *Port* column in the format *Slot.Line.Port*.

Syntax

dspports

Syntax Description

None

Related Commands

addport, **delport, delports**, **dspport, xcnfport, xdspport, xdspports**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the ports on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspports

  Port     Ena/Speed   Type
  ------   --- ------ --------
  4.1.1    Add/1536k structur
  4.2.2    Add/1536k structur
  4.3.3    Add/1536k structur
  4.4.4    Add/ 768k structur

  Number of ports:              4

  PortDs0UsedLine1:             0x00ffffff
  PortDs0UsedLine2:             0x00ffffff
  PortDs0UsedLine3:             0x00ffffff
  PortDs0UsedLine4:             0x00000fff
  PortDs0UsedLine5:             0x00000000
  PortDs0UsedLine6:             0x00000000
  PortDs0UsedLine7:             0x00000000
  PortDs0UsedLine8:             0x00000000
  PortNumNextAvailable:         5

PXM1E_SJ.1.4.CESM.a >
```

dspprfhist

Display Performance History—MPSM-8T1-CES, MPSM-8E1-CES

Use the **dspprfhist** command to show the history of processor usage on the current MPSM card.

Tip To change the default sampling interval (bucket interval) of 20 seconds, use the **cnfprfparm** command.

Syntax

dspprfhist

Syntax Description

None

Related Commands

cnfprfparam, dspcderrs, dspdiagresults, dspdiagtests, dspslftst, dspslftsttbl, dsptaskinfo, i

Attributes

Log: No	State: Any	Privilege: Group 1

Example

Display the performance history of the current MPSM card. The output of this command will display 10 samples taken at 20-second intervals (default sampling interval).

```
M8850_SF.1.28.MPSM8T1.CES.a > dspprfhist
CURRENT TIME         0:15:54
Sample #     0
(From)0:15:20-(To)0:15:40
TASK                 Task Id       %
---------------------------------------
INTERRUPT            -          0.01
Idle                 -          98.60
Kernel               -          0.28
MISC                 -          0.00
tRootTask            0          0.10
tSCM                 1          0.15
tOAM                 5          0.00
tOAMRcv              6          0.01
tStatMgr             7          0.01
tEvtMgr              8          0.01
tLDRVDS1             19         0.01
tCES                 22         0.76
tBertOnBoard        25         0.03

Sample #    -1
(From)0:15:0-(To)0:15:20
TASK                 Task Id       %
---------------------------------------
INTERRUPT            -          0.00
Idle                 -          97.95
```

```
Kernel              -          0.25
MISC                -          0.00
tRootTask           0          0.10
tSCM                1          0.11
tOAM                5          0.02
tOAMRcv             6          0.02
tStatMgr            7          0.02
tEvtMgr             8          0.01
tONLD               15         0.67
tLDRVDS1            19         0.01
tCES                22         0.79
tBertOnBoard       25         0.02

Sample #    -2
(From)0:14:40-(To)0:15:0
TASK                Task Id       %
---------------------------------------
INTERRUPT           -          0.00
Idle                -          98.60
Kernel              -          0.31
MISC                -          0.00
tRootTask           0          0.08
tSCM                1          0.13
tOAM                5          0.01
tOAMRcv             6          0.02
tStatMgr            7          0.01
tEvtMgr             8          0.00
tLDRVDS1            19         0.01
tCES                22         0.77
tBertOnBoard       25         0.03
```

The following table describes processor tasks that can occur in the output of the **dspprfhist** command.

Tip For a complete list of processor tasks running on the current MPSM card, use the **i** command.

Process	Description
INTERRUPT	CPU time spent processing ISRs during the configured bucket interval.
Idle	CPU time spent not processing any tasks. The higher the idle time, the more stable the card is.
Kernel	CPU time spent processing system level house keeping tasks.
MISC	CPU time spent processing miscellaneous tasks.
tRootTask	CPU time spent monitoring the health of all other tasks.
tSCM	Shelf Communication Manager. CPU time spent maintaining communications with the PXM.
tCMM	Card Manager. CPU time spent maintaining application level connectivity between the MPSM and the PXM.

Process	Description
tOAM	CPU time spent processing OAM tasks relating to alarm cells.
tOAMRcv	CPU time spent processing OAM tasks relating to loopback request cells.
tStatMgr	Statistics Manager. CPU time spent collecting line, port, and channel level statistics.
tEvtMgr	Event Manager. CPU time spent processing event tasks.
tONLD	CPU time spent processing Online Diagnostics tasks.
tCPM	Connection and Port Manager. CPU time spent maintaining connection status, port status, related alarms, traps, and OAM generation tasks.
tConnLog	CPU time spent logging connection and port alarms to the PXM log.
tRPC	CPU time spent processing special communications from the PXM.
tBERT	CPU time spent processing BERT requests from PXM (SRM based BERT).
tLDRVDS1	CPU time spent monitoring the line for alarm conditions.
tCES	CPU time spent processing CES related house keeping tasks. This task is applicable only in CES mode.
tBertOnBoard	CPU time spent processing Onboard BERT tasks.
tLmClient	CPU time spent processing license requests and releases between the MPSM and PXM.

dsprscprtn

Display Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B (PXM1E/PXM45 only), CESM-8T1 (PXM1E/PXM45 only), CESM-8E1 (PXM1E/PXM45 only)

Use the **dsprscprtn** command to display the configuration of a port-level resource partition.

Syntax

dsprscprtn <*port_num*>

Syntax Description

port_num	Specify the port number for the resource partition you want to view. The **dspports** command lists all configured ports. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

Related Commands

addrscprtn, **cnfportrscprtn**, **cnfrscprtn**, **delrscprtn, dspportrscprtn, xcnfrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Active	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display resource partition configuration information for port 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dsprscprtn 1

  Port  User  Status  NumOfLcnAvail   LcnLow   LcnHigh   IngrBW  EgrBW CtrlrId
  ---- ------ ------ --------------  -------- ---------  ------  ----- --------
   1    PNNI   Add          1           1         1        100     100    2


M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: PXM1

Display resource partition configuration information for port 1 on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dsprscprtn 1
```

```
  Port  User  Status  NumOfLcnAvail   LcnLow   LcnHigh   IngrBW  EgrBW
  ---- ------ ------ --------------  -------- ---------  ------  -----
   1    PAR    Add          1           0         0        100    100
   1    PNNI   Add          1           0         0        100    100
   1    TAG    Add          1           0         0        100    100


M8250_SJ.1.22.MPSM8T1.CES.a >
```

dspsarcnt

Display SAR Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspsarcnt** command to display the Segmentation And Reassembly (SAR) counter statistics for a specific connection. The output of the **dspsarcnt** command displays cell bus SAR data statistics. This command will indicate the status of the channel traffic and will indicate the reason for any discards.

From the direction of CPE, transmit (Tx) cells move from the service module onto the cell bus (PXM) and towards the ATM network. Receive (Rx) cells move from the ATM network onto the cell bus towards the service module, and onward to the CPE.

Syntax

dspsarcnt <*chan_num*>

Syntax Description

chan_num	Enter the channel number of the connection you want to display. You can show connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

clrsarcnt, **clrsarcnts, dspcons**, **dspsarcnts**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the SAR counters for channel 35 on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > dspsarcnt 35

                          SarShelfNum:         1
                          SarSlotNum:          4
                          SarChanNum:          35
                                Tx                        Rx
                          ---------------       ---------------
  Total Cells:            72810522              72696866
  Total CellsCLP:         0                     0
  Total CellsAIS:         0                     0
  Total CellsFERF:        0                     0
  Total CellsEnd2EndLpBk: 0                     0
  Total CellsSegmentLpBk: 0                     0
  RcvCellsDiscOAM:                              0


PXM1E_SJ.1.4.CESM.a >
```

dspsarcnts

Display SAR Counter—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspsarcnts** command to display the Segmentation And Reassembly (SAR) counter statistics for all connections on the current CESM or MPSM card. The output of the **dspsarcnts** command displays cell bus SAR data statistics. From the direction of CPE, transmit (Tx) cells move from the service module onto the cell bus (PXM) and towards the ATM network. Receive (Rx) cells move from the ATM network onto the cell bus towards the service module, and onward to the CPE.

Syntax

dspsarcnts

Syntax Description

None

Related Commands

clrsarcnt, **clrsarcnts**, **dspsarcnt**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the SAR counters for the current CESM card.

```
PXM1E_SJ.1.3.CESM.a > dspsarcnts

                          SarShelfNum:         1
                          SarSlotNum:          3
                          SarChanNum:          0
                                Tx                       Rx
                          ---------------       ---------------
  Total Cells:            0                     0
  Total CellsCLP:         0                     0
  Total CellsAIS:         0                     0
  Total CellsFERF:        0                     0
  Total CellsEnd2EndLpBk: 0                     0
  Total CellsSegmentLpBk: 0                     0
  RcvCellsDiscOAM:                              0

Type <CR> to continue, Q<CR> to stop:
```

dspslftst

Display Self-Test—CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspslftst** command to view the self-test configuration and status on the current card.

Note This command is not supported on the MPSM-8T1-CES or MPSM-8E1-CES cards. For self tests on the MPSM card use the MPSM's Online Diagnostics functionality. For more information about MPSM Online Diagnostics see Chapter 5, "Managing CESM and MPSM Cards."

Syntax

dspslftst

Syntax Description

None

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display self-test configuration and status for the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dspslftst


  SelfTestEnable:            Disable
  SelfTestPeriod:            5
  SelfTestState:             SelfTest Passed
  SelfTestResultDescription: No failure information available

PXM1E_SJ.1.20.CESM.a >
```

dspslftsttbl

Display Self-Test Table—CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspslftsttbl** command to view the self tests the card can perform, view the configuration for the tests, and determine if a test resets the card or is destructive to existing connections.

Note This command is not supported on the MPSM-8T1-CES or MPSM-8E1-CES cards. For self tests on the MPSM card use the MPSM's Online Diagnostics functionality. For more information about MPSM Online Diagnostics see Chapter 5, "Managing CESM and MPSM Cards."

Syntax

dspslftsttbl

Syntax Description

None

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst**, **pausediag**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Show the tests, test configuration, and test results for the current CESM.

```
PXM1E_SJ.1.20.CESM.a > dspslftsttbl
Test #  Test Name          Thold Fail Pass Last Enab Destr Card Rst
  1     DRAM access test     1     0    0    P    Y    N      Y
  2     ISRAM access test    1     0    0    P    Y    N      Y
  3     ESRAM access test    1     0    0    P    Y    N      Y
  4     BRAM checksum test   1     0    0    P    Y    N      Y
  5     CODE checksum test   1     0    0    P    Y    N      Y
  6     Line loopback test   1     0    0    P    Y    Y      Y
  7     CellBus test         1     0    0    P    Y    N      N

PXM1E_SJ.1.20.CESM.a >
```

dspstatparms

Display Statistics Parameters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dspstatparms** command to display the statistics parameters for the current card.

Syntax

dspstatparms

Syntax Description

None

Related Commands

clrds1stats, dspds1stats

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the statistics parameters for the current card.

```
PXM1E_SJ.1.20.CESM.a > dspstatparms

TFTP Retry Count:              1
TFTP ACK time-out (sec):      60
Bucket Interval:               0
File Interval:                 0
Peak Enable Flag:       Disabled
Object Count:                  0         STATS COLLECTION: Disabled
Object Subtype Counts:    0  0  0  0
Total File Memory Used:        0
Number of File Allocated:      0
Current File Size:             0
Stat Memory Allocated:         0
Auto Memory Allocated:         0
Auto Mem Rgn Size:        1572864

PXM1E_SJ.1.20.CESM.a >
```

dsptaskinfo

Display Task Information—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dsptaskinfo** command to display operational statistics about internal card processes.

Syntax

dsptaskinfo

Syntax Description

None

Related Commands

clrtaskinfo

Attributes

Log: No	State: Any	Privilege: Service Group

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display task information for the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dsptaskinfo

 taskName    msgReceivd        msgSent       msgSent   lastSent   lastSt lastSt
                                             Failed   FailedTask Failed Failed
                                                                 MsgTyp Errno
---------- --------------- --------------- ---------- ---------- ------ ------
tRootTask  0               13              0                     0      0x0
tSCM       347             80              0                     0      0x0
tCMM       6               2               0                     0      0x0
tSMD       74              97              0                     0      0x0
tFILED     0               0               0                     0      0x0
tOAM       2               0               0                     0      0x0
tLOGD      13              0               0                     0      0x0
tSnmpMsgd  0               0               0                     0      0x0
tSnmp      0               10              0                     0      0x0
tCPM       0               0               0                     0      0x0
tConnLog   0               0               0                     0      0x0
tRPC       0               0               0                     0      0x0
tONLD      0               0               0                     0      0x0
tBert      0               0               0                     0      0x0
tIMA       0               0               0                     0      0x0
tILMI      0               0               0                     0      0x0
tLMI       0               0               0                     0      0x0
tCMM       0               0               0                     0      0x0
tLmClient  0               0               0                     0      0x0
tLmClient  0               0               0                     0      0x0
tLmClient  0               0               0                     0      0x0

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display task information for the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > dsptaskinfo

 taskName    msgReceivd        msgSent       msgSent   lastSent  lastSt lastSt
                                             Failed   FailedTask Failed Failed
                                                                 MsgTyp Errno
---------- --------------- --------------- ---------- ---------- ------ ------
nmimRouter 0               4754            0                     0      0x0
scm        23159           5631            0                     0      0x0
pSNMP      0               1               0                     0      0x0
cmm        4296            4293            0                     0      0x0
conn_mgr_t 529             1674            0                     0      0x0
tFiled     58              59              0                     0      0x0
tSmd       1164            1249            0                     0      0x0
logd       2639            1               0                     0      0x0
qRpc       0               1               0                     0      0x0
alarm_task 0               31              0                     0      0x0
oam        772             1               0                     0      0x0
clt        1063            536             0                     0      0x0
bertd      0               1               0                     0      0x0
aal1stats  0               0               0                     0      0x0
aal1isd    0               1               0                     0      0x0
underrund  0               1               0                     0      0x0

PXM1E_SJ.1.20.CESM.a >
```

dsptotals

Display Totals—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **dsptotals** command to view total counts for lines, ports, channels, and alarms on the current card.

Syntax

dsptotals

Syntax Description

None

Related Commands

dspalms, **dspchans, dspcons**, **dsplns**, **dspports**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: No	State: Any	Privilege: Any User

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Active	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES on PXM1E, PXM45

Show totals on the current card.

```
M8850_SF.1.28.MPSM8T1.CES.a > dsptotals

       total active lines = 1/8
       total active ports = 1/192
       total active chans = 1/192

       Card Alarms Summary:
       ---------------------------------------
       Alarm Type                Major   Minor
       ------------------        -----   -----
       Card State Alarms:          1       1
       Line Alarms:                1       0
       Port Alarms:                1       0
       Channel Alarms:             0       1
       ---------------------------------------
```

```
      Port Channel Table :  # of channel assigned per port

      0   1   2   3   4   5   6   7   8   9 <-- least significant digit
 0        1 --- --- --- --- --- --- --- ---
 1  --- --- --- --- --- --- --- --- --- ---
 2  --- --- --- --- --- --- --- --- --- ---
 3  --- --- --- --- --- --- --- --- --- ---
 4  --- --- --- --- --- --- --- --- --- ---
 5  --- --- --- --- --- --- --- --- --- ---
 6  --- --- --- --- --- --- --- --- --- ---
 7  --- --- --- --- --- --- --- --- --- ---
 8  --- --- --- --- --- --- --- --- --- ---
 9  --- --- --- --- --- --- --- --- --- ---
10  --- --- --- --- --- --- --- --- --- ---
11  --- --- --- --- --- --- --- --- --- ---
12  --- --- --- --- --- --- --- --- --- ---
13  --- --- --- --- --- --- --- --- --- ---
14  --- --- --- --- --- --- --- --- --- ---
15  --- --- --- --- --- --- --- --- --- ---
16  --- --- --- --- --- --- --- --- --- ---
17  --- --- --- --- --- --- --- --- --- ---
18  --- --- --- --- --- --- --- --- --- ---
19  --- --- ---

M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: MPSM-8T1-CES, MPSM-8E1-CES on PXM1

Show totals on the current card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > dsptotals

      total active lines = 3/8
      total active ports = 3/192
      total active chans = 3/192

      Port Channel Table :  # of channel assigned per port

      0   1   2   3   4   5   6   7   8   9 <-- least significant digit
 0        1   1 ---   1 --- --- --- --- ---
 1  --- --- --- --- --- --- --- --- --- ---
 2  --- --- --- --- --- --- --- --- --- ---
 3  --- --- --- --- --- --- --- --- --- ---
 4  --- --- --- --- --- --- --- --- --- ---
 5  --- --- --- --- --- --- --- --- --- ---
 6  --- --- --- --- --- --- --- --- --- ---
 7  --- --- --- --- --- --- --- --- --- ---
 8  --- --- --- --- --- --- --- --- --- ---
 9  --- --- --- --- --- --- --- --- --- ---
10  --- --- --- --- --- --- --- --- --- ---
11  --- --- --- --- --- --- --- --- --- ---
12  --- --- --- --- --- --- --- --- --- ---
13  --- --- --- --- --- --- --- --- --- ---
14  --- --- --- --- --- --- --- --- --- ---
15  --- --- --- --- --- --- --- --- --- ---
16  --- --- --- --- --- --- --- --- --- ---
17  --- --- --- --- --- --- --- --- --- ---
18  --- --- --- --- --- --- --- --- --- ---
19  --- --- ---

M8250_SJ.1.22.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1E, PXM45

Show totals on the current card.

```
PXM1E_SJ.1.4.CESM.a > dsptotals

       total active lines = 1/8
       total active ports = 2/192
       total active chans = 2/192

       Card Alarms Summary:
       ---------------------------------------
       Alarm Type                Major   Minor
       ------------------        -----   -----
       Card State Alarms:          0       0
       Line Alarms:                0       0
       Port Alarms:                0       0
       Channel Alarms:             0       0
       ---------------------------------------

PXM1E_SJ.1.4.CESM.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1

Show totals on the current card.

```
M8250_SJ.1.3.CESM.a > dsptotals

       total active lines = 1/8
       total active ports = 2/192
       total active chans = 1/192

M8250_SJ.1.3.CESM.a >
```

Help

Help—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **Help** command to display a list of the commands supported on the CESM or MPSM card.

Syntax

Help

Syntax Description

None

Related Commands

? command

Attributes

Log: No	State: Any	Privilege: Any User

Example

Command list for the current card.

```
PXM1E_SJ.1.20.CESM.a > Help

?                      No       Any     Any User
Help                   No       Any     Any User
addcon                 Yes      Active  Group 2
addconCDVT             Yes      Active  Group 2
addln                  Yes      Active  Group 1
addlnloop              Yes      Active  Service Group (-1)
addport                Yes      Active  Group 1
addrscprtn             No       Any     Strata Group (-2)
addspvc                Yes      Active  Group 2
chkflash               No       Any     Strata Group (-2)
clear                  No       Any     Any User
clralm                 No       Any     Group 5
clralmcnt              No       Any     Group 5
clralmcnts             No       Any     Group 5
clralms                No       Any     Group 5
clrcderrs              No       Any     Super Group (0)
clrchancnt             No       Any     Group 5
clrchancnts            No       Any     Group 3
clrds1stats            No       Any     Group 5
clrmsgcnt              No       Any     Group 5

Type <CR> to continue, Q<CR> to stop:
```

i

Information—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **i** command to display information about software tasks that are running on the current card.

Syntax

i

Syntax Description

None

Related Commands

dsptaskinfo

Attributes

Log: No	State: Any	Privilege: Service Group

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display task information.

```
M8850_SF.1.28.MPSM8T1.CES.a > i

  NAME        ENTRY        TID    PRI   STATUS      PC       SP     ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
tExcTask   excTask       57f5e20   0 PEND         44b720  57f5c50       0     0
tLogTask   logTask       57f3260   0 PEND         44b720  57f3098       0     0
tRootTask  usrRoot       57ffd60   1 DELAY        4241e0  57ff998   30065     1
tRlogind   rlogind       574ef40   2 PEND         395670  574e980       0     0
tWdbTask   417694        5747230   3 PEND         395670  5746f20       0     0
tShell     shell         573ff40   5 PEND         395670  573f978       0     0
tNetTask   netTask       57b0b90  50 PEND         395670  57b0a80       0     0
tTimerTask timerTask     4499c80  50 SUSPEND      423384  4499b98       0     0
tLmClient  lmClientMain  43f5100  50 DELAY        4241e0  43f4dc8       0    21
tSmCmdTsk1 cmdTask       3fd48f0  50 READY        424d20  3fd3830  3d0002     0
tSmOutTsk1 smtermOutTas  3fca640  50 READY        395670  3fca2b8       0     0
tTelnetd   telnetd       574d8d0  55 PEND         395670  574d628       0     0
tFtpdTask  3cd180        574a980  55 PEND         395670  574a6e8       0     0
tSCM       scmMain       44989d0  55 READY        4241e0  4498728       0     0
tCMM       cmmMain       4490720  55 PEND+T       44b720  4490388  3d0004    15
tSMD       smtermd       4486470  55 READY        395494  4485e78       0     0
tFILED     fileDeamon    447cee0  55 PEND         44b720  447cb30       0     0
tOAM       oamMain       4474c30  55 DELAY        4241e0  4474980  3d0002     1
tOAMRcv    oamRcvMain    446c980  55 PEND         395670  446c5f0       0     0
tEvtMgr    eventMgrMain  445c420  55 READY        4241e0  445c1b0       0     0
tLOGD      sysLogMsgTas  444ef90  55 PEND         44b720  444ec20       0     0
tSnmpMsgd  routerMain    4446cb0  55 PEND         44b720  4446968       0     0
tSnmp      pSNMPMain     443ea00  55 PEND         44b720  443e6b0       0     0
tCPM       cpmMain       4436750  55 PEND+T       44b720  4436338  3d0004     6
tConnLog   conLogTask    442e4a0  55 PEND+T       44b720  442e090  3d0004    10
tRPC       rpcMain       44261f0  55 PEND+T       44b720  4425e60  3d0004     3
tLDRVDS1   ldrvDs1Main   40dfde0  55 READY        4241e0  40dfb50       0     0
```

```
tCES       cesMain       40d5b30  55 READY        4241e0  40d58a0       0     0
tStatMgr   statsMgrMain  44646d0  58 READY        4241e0  4464430       0     0
tONLD      onldMain      441dea0  58 DELAY        4241e0  441dc18       0   728
tStatsd    tftpstatsTas  4415bc0  60 DELAY        4241e0  4415920       0  5658
tPortmapd  portmapd      574c290 100 PEND         395670  574bfe0      16     0
tRSYNC     smrmResynchM  440d910 100 DELAY        4241e0  440d550       0    39
tBert      bertMain      4405660 100 PEND+T       44b720  44052e0  3d0004    48
tBertOnBoarbertOnBoardM  43fd3b0 100 READY        4241e0  43fd0e8       0     0
resyncSmrp smrpMsgHandl  40cc8a0 100 PEND         44b720  40cc548       0     0
resyncSmrc smrcStartFin  40ca5f0 100 PEND         395670  40ca360       0     0
tBgndCheck bgndTaskChec  43eabe0 120 DELAY        4241e0  43eaa68       0    50

M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display task information.

```
PXM1E_SJ.1.20.CESM.a > i

  NAME        ENTRY       TID     PRI   STATUS      PC       SP     ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
tExcTask   excTask      80479d50   0 PEND       800e07b8 80479c80       0     0
tRootTask  usrRoot      8047fd80   1 PEND+T     800e07b8 8047f9e8  3d0004     2
tShell     shell        80477230   1 PEND       800e0c68 80476e88       0     0
tTimerTask timerTask    80454c40  50 DELAY      800e4028 80454be0       0 4289214978
tSmCmdTsk1 cmdTask      802b04b0  50 READY      800e470c 802aff08   3006b     0
tSmOutTsk1 smtermOutTas 802abb90  50 READY      800e0c68 802ab8b8       0     0
scm        scmMain      804539b0  55 READY      800e4028 80453930       0     0
NMIMmsgd   routerMain   80450700  55 PEND       800e07b8 80450630       0     0
NMIMpSNMP  pSNMPMain    8044e450  55 PEND       800e07b8 8044e378       0     0
cmm        cmmMain      8044c1a0  55 PEND+T     800e07b8 8044c0d8  3d0004    83
talarm     alarm_task   80449bc0  55 READY      800e4028 80449b50       0     0
tconn      ConnMgrTask  804476e0  55 PEND       800e07b8 804475d0       0     0
oam        OamMain      80445430  55 READY      800e4028 80445380  3d0002     0
tFiled     fileDeamon   80443180  55 PEND       800e07b8 80443090       0     0
tSmd       smtermd      80440ed0  55 READY      800e0bf8 80440b90       0     0
logd       logMsgTask   803f21c0  55 PEND       800e07b8 803f2100       0     0
clt        ConnectionLo 803efee0  55 PEND+T     800e07b8 803efe08  3d0004   194
tRpc       rpcMain      803e96d0  55 READY      800e07b8 803e9600  3d0004     0
aal1stats  aal1statsd   803e7380  55 READY      800e4028 803e72f0       0     0
aal1isd    aal1ISd      803e50d0  55 DELAY      800e4028 803e5028       0    82
underrund  UnderRunDete 803e2e20  55 READY      800e4028 803e2d78       0     0
tBgndCheck 80090a40     803d93f0  55 DELAY      800e4028 803d9330       0    81
tslftst    slftstmain   803edc30  58 DELAY      800e4028 803edba8  3d0002 27022
statsd     tftpstatsTas 8043d860  60 DELAY      800e4028 8043d7e0       0  4096
bertd      BertMain     803eb980 100 PEND+T     800e07b8 803eb8b0  3d0004    34
resyncMain smrmResynchM 803e0b70 100 DELAY      800e4028 803e0a88       0 4289202291
resyncSmrp smrpMsgHandl 803dd910 100 PEND       800e07b8 803dd830       0     0
resyncSmrc smrcStartFin 803db680 100 PEND       800e0c68 803db5f0  3d0002     0

PXM1E_SJ.1.20.CESM.a >
```

insbiterror

Insert Bit Error—MPSM-8T1-CES, MPSM-8E1-CES

Use the **insbiterror** command to insert single bit errors into the transmitted BERT pattern configured on the current card.

Syntax

insbiterror <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number in which to insert single bit errors using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

clrbertstats, cnfbert, delbert, dspbert, dspbertstats, startbert, stopbert

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

While running Bit Error Rate Testing, insert a single bit error into line 1, port 1 on the MPSM-8T1-CES card in slot 6, and verify the received error count using the **dspbertstats** command.

```
M8250_SJ.1.6.MPSM8T1.CES.a > insbiterror 1.1

M8250_SJ.1.6.MPSM8T1.CES.a >

M8250_SJ.1.6.MPSM8T1.CES.a > dspbertstats 1.1

 Interface Number           : 1.1
 Rx Bit Count               : 29493114
 Rx Bit Error Count         : 1
 Sync Loss Transition       : 0
 Pattern Loss Count (secs) : 0


M8250_SJ.1.6.MPSM8T1.CES.a >
```

memShow

Memory Show—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **memShow** command to display information regarding memory usage by the current card.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES

memShow

Syntax: CESM-8T1/B, CESM-8T1, CESM-8E1

memShow [1]

Syntax Description

1	This option adds the list of free memory blocks.

Related Commands

None

Attributes

Log: No State: Any Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display memory usage for the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > memShow
 status   bytes    blocks   avg block  max block
 ------ --------- -------- ---------- ----------
current
   free  37229904        5    7445980  37227680
  alloc  25404144     1161      21881        -
cumulative
  alloc  48119568    47507       1012        -

M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display memory usage for the current CESM card.

```
M8850_SF.1.26.CESM.a > memShow 1


FREE LIST:
  num     addr      size
  --- ---------- ----------
    1 0x8030d0e0         48
    2 0x802f0bd0      81840
    3 0x802579b0     248144
```

```
SUMMARY:
 status   bytes    blocks   avg block  max block
 ------ --------- -------- ---------- ----------
current
   free    330032        3     110010    248144
  alloc   1912560     2167        882        -
cumulative
  alloc   5930432    41964        141        -

M8850_SF.1.26.CESM.a >
```

movelic

Move Licenses—MPSM-8T1E1, MPSM-8T1-CES, MPSM-8E1-CES

When the MPSM-8T1E1 card is shipped with feature licenses programmed into its NVRAM, the service module is acting only like a shipping container for those licenses. After installation of the MPSM-8T1E1 card, enter the **movelic** command to move the programmed feature licenses from the MPSM card to the PXM license pool so that the feature licenses are made available for use.

Tip Enter the **dspliccd** command to view which licenses have been programmed into the NVRAM on the MPSM card.

Note The rate control feature license is the only feature license available for the MPSM-8T1E1 card. This feature license is used by the MPSM-8T1E1 card when configured for Frame Relay services.

Syntax

movelic

Syntax Description

None

Related Commands

dspliccd

Attributes

Log: Yes	State: Any	Privilege: Service Group

Example

Move licenses from the MPSM-8T1E1 card in slot 6 to the PXM license pool.

```
M8250_SJ.1.6.MPSM8T1E1.s > movelic
------------------------------------------------
Programmed License Type          #Programmed
-----------------------          -----------
Rate-Control                      4

Do you want to proceed (Yes/No)? Yes

Card Licenses have been moved to license pool.

M8250_SJ.1.6.MPSM8T1E1.s >
```

myid

My ID—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **myid** command to show the user name that you used to log into the switch.

Syntax

myid

Syntax Description

None

Related Commands

None

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display the user name used for log in.

```
PXM1E_SJ.1.20.CESM.a > myid
superuser

PXM1E_SJ.1.20.CESM.a >
```

pausediag

Pause Diagnostics—MPSM-8T1-CES, MPSM-8E1-CES

The **pausediag** command temporarily stops the scheduled online diagnostic tests on the current card.

Syntax

pausediag

Syntax Description

None

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **resumediag**, **rundiagtest**, **runslftstno**

Attributes

Log: Yes	State: Any	Privilege: Group 1

Example

Pause the scheduled diagnostics test on the MPSM-8T1-CES card in slot 6.

```
M8250_SJ.1.6.MPSM8T1.CES.a > pausediag
Online Diagnostic tests have been paused.

M8250_SJ.1.6.MPSM8T1.CES.a >
```

resumediag

Resume Diagnostics—MPSM-8T1-CES, MPSM-8E1-CES

The **resumediag** command resumes the previously paused diagnostic tests scheduled on the current card.

Syntax

resumediag

Syntax Description

None

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **rundiagtest**, **runslftstno**

Attributes

Log: Yes	State: Any	Privilege: Group 1

Example

Restart the paused online diagnostic tests scheduled on the MPSM-8T1-CES card in slot 6.

```
M8250_SJ.1.6.MPSM8T1.CES.a > resumediag
Online Diagnostic tests are being resumed.

M8250_SJ.1.6.MPSM8T1.CES.a >
```

rrtcon

Reroute Connection (PXM1E/PXM45 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **rrtcon** command to reroute a connection between two different switches.

Note This command operates only on master endpoints and on connections between two different switches. This command does not reroute DAX connections, which are connections between two interfaces on the same switch.

Syntax

rrtcon <*Chan_Num*>

Syntax Description

<table>
<tr><td>Chan_Num</td><td>Specify the channel for the connection to be rerouted. You can view connection information with the dspcons and dspchans commands.
• On PXM1E, PXM45 platforms:
– T1 Channel Range = 35-226
– E1 Channel Range = 35-282
Tip On PXM1E and PXM45 platforms, the channel number is found in the LCN column in the output of the dspcons and dspchans commands.</td></tr>
</table>

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans, dspcon, dspcons, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Reroute connection 40.

```
PXM1E_SJ.1.4.CESM.a > rrtcon 40

PXM1E_SJ.1.4.CESM.a >
```

rundiagtest

Run Diagnostic Test—MPSM-8T1-CES, MPSM-8E1-CES

Enter the **rundiagtest** command to run an individual online diagnostic test.

Syntax

rundiagtest <*TestId*> [*param1*] [*param2*]

Syntax Description

TestId	Test ID number of the diagnostic test to be executed in the range 1 to 23. Enter the **dspdiagtests** command to view the diagnostic tests available and the associated test ID numbers.
param1	Parameter 1 for tests. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.
param2	Parameter 2 for tests. Enter the **dspdiagtests** <*TestId*> command to display the configurable parameters for each online diagnostic test.

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **runslftstno**

Attributes

Log: No	State: Any	Privilege: Group 1

Example

On the MPSM-8T1-CES card in slot 6 run online diagnostic test number 4.

```
M8250_SJ.1.6.MPSM8T1.CES.a > rundiagtest 4

NP Performance Monitor  PASSED

M8250_SJ.1.6.MPSM8T1.CES.a >
```

runslftstno

Run Self Test Number—CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **runslftstno** command to execute one of the self tests on the CESM card. To display a list of the self tests, enter this command without parameters or enter the **dspslftsttbl** command. Before executing a test with the **runslftstno** command, use the **cnfslftst** command to enable testing. After finishing testing use the **cnfslftst** command to disable testing.

Note This command is not supported on the MPSM-8T1-CES or MPSM-8E1-CES cards. For self tests on the MPSM card use the MPSM's Online Diagnostics functionality. For more information about MPSM Online Diagnostics see Chapter 5, "Managing CESM and MPSM Cards."

Syntax

runslftstno <*test_no*>

Syntax Description

test_no	Enter the number of the test you want to run. • 1 = DRAM access test • 2 = ISRAM access test • 3 = ESRAM access test • 4 = BRAM checksum test • 5 = CODE checksum test • 6 = Line loopback test • 7 = Cell Bus test

Caution Some tests reset the card or interrupt connections. These tests are identified in the **dspslftsttbl** command display.

Related Commands

clrdiagresults, clrslftst, cnfdiagtest, cnfslftst, **dspdiagresults**, **dspdiagtests**, **dspslftst, dspslftsttbl**, **pausediag**, **resumediag**, **rundiagtest**

Attributes

Log: No	State: Any	Privilege: Any User

Example

Display a list of self tests available on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > runslftstno
Test #  Test Name          Thold Fail Pass Last Enab Destr Card Rst
  1     DRAM access test     1     0    0    P    Y    N     Y
  2     ISRAM access test    1     0    0    P    Y    N     Y
  3     ESRAM access test    1     0    0    P    Y    N     Y
  4     BRAM checksum test   1     0    0    P    Y    N     Y
  5     CODE checksum test   1     0    0    P    Y    N     Y
  6     Line loopback test   1     0    0    P    Y    Y     Y
  7     CellBus test         1     0    0    P    Y    N     N
runslftstno "Test #"

PXM1E_SJ.1.4.CESM.a >
```

Run self test number 7.

```
PXM1E_SJ.1.20.CESM.a > runslftstno 7
Test Number 7 Result: PASS

PXM1E_SJ.1.20.CESM.a >
```

setcmdc

Set Command Completion—MPSM-8T1-CES, MPSM-8E1-CES

Use the **setcmdc** command to enable or disable the command completion feature. When enabled, this feature responds to incomplete commands by displaying a list of commands that match the incomplete command entry.

Syntax

setcmdc <on|off>

Syntax Description

<on|off>	Specify **on** to enable command completion, or specify **off** to disable this feature.

Related Commands

None

Attributes

Log: No	State: Any	Privilege: Any User

Example

Enable the command completion feature.

```
M8850_SF.1.28.MPSM8T1.CES.a > setcmdc on

M8850_SF.1.28.MPSM8T1.CES.a >
```

setpagemode

Set Page Mode—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **setpagemode** command to enable or disable the paging feature. When the paging feature is enabled, commands display information in pages that do not exceed the length of the display. If a command report requires more than one page, press **Return** to display the next page, or press **Q** to quit the report. Non-paged reports display without interruption, but you may need to scroll up to see the information at the top of the report.

Syntax

setpagemode <on|off>

Syntax Description

<on|off>	Specify **on** to enable paging, or specify **off** to disable this feature.

Related Commands

None

Attributes

Log: No	State: Any	Privilege: Any User

Example

Enable command report paging.

```
PXM1E_SJ.1.20.CESM.a > setpagemode on

PXM1E_SJ.1.20.CESM.a >
```

startbert

Start Bit Error Rate Testing—MPSM-8T1-CES, MPSM-8E1-CES

The **startbert** command starts the Bit Error Rate Test configured on the specified line or port on the current card.

Syntax

startbert <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number on which to start Bit Error Rate Testing using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

clrbertstats, cnfbert, delbert, dspbert, dspbertstats, insbiterror, stopbert

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Start Bit Error Rate Testing on line 1 of the MPSM-8T1-CES card in slot 28.

```
M8850_SF.1.28.MPSM8T1.CES.a > startbert 1.0

M8850_SF.1.28.MPSM8T1.CES.a >
```

stopbert

Stop Bit Error Rate Testing—MPSM-8T1-CES, MPSM-8E1-CES

The **stopbert** command stops the Bit Error Rate Test running on the specified line and port on the current card.

Syntax

stopbert <*ifNumber*>

Syntax Description

ifNumber	Specify the interface number on which to stop Bit Error Rate Testing using the format *line.port*. • MPSM-8T1-CES, MPSM-8E1-CES Line number Range: 1-8 • MPSM-8T1-CES Port number Range: 1-192 • MPSM-8E1-CES Port number Range: 1-248 **Note** To specify a Line BERT session, the Port Number = 0.

Related Commands

clrbertstats, cnfbert, delbert, dspbert, dspbertstats, insbiterror, startbert

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Stop Bit Error Rate Testing running on line 1 of the MPSM-8T1-CES card in slot 28.

```
M8850_SF.1.28.MPSM8T1.CES.a > stopbert 1.0

M8850_SF.1.28.MPSM8T1.CES.a >
```

tstchan

Test Channel—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **tstchan** command to test the integrity of a connection you have created with the **addcon, addconCDVT,** or **addspvc** command.

The **tstcon** command sends a single collection of supervisory cells from the local to the remote end and displays a pass or fail message. If connection segments are failed or misconfigured, the **tstcon** command fails. Note that the **tstcon** command does not test quality of service or connectivity beyond the MGX network. The **tstcon** command has some limitations: It works only for local connections or connections in a tiered network comprising a Cisco backbone network; it should be issued from both ends to completely verify connectivity; and a passing result of the test does not guarantee the connection's end-to-end performance.

Syntax

tstchan <*chan_num*>

Syntax Description

chan_num	Specify the channel for the connection to be tested. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans, dspcon, dspcons, rrtcon, tstchan, tstcon, tstdelay, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: No	State: Active	Privilege: Group 1

Example

Test the connection labeled channel 35.

```
PXM1E_SJ.1.4.CESM.a > tstchan 35

TestCon in progress.

TestCon Passed.

PXM1E_SJ.1.4.CESM.a >
```

tstcon

Test Connection—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **tstcon** command to test the integrity of a connection you have created with the **addcon, addconCDVT,** or **addspvc** command.

The **tstcon** command sends a single collection of supervisory cells from the local to the remote end and displays a pass or fail message. If connection segments are failed or misconfigured, the **tstcon** command fails. Note that the **tstcon** command does not test quality of service or connectivity beyond the MGX network. The **tstcon** command has some limitations:

- It works only for local connections or connections in a tiered network comprising a Cisco backbone network
- It should be issued from both ends to completely verify connectivity
- A passing result of the test does not guarantee the connection's end-to-end performance

Syntax

tstcon <*port num*>

Syntax Description

port_num	Enter the port number for the connection to be tested. To display a list of connections with port numbers, enter the **dspcons** command. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248 **Tip** On PXM1E and PXM45 platforms, the port number is found in the *Port.VPI.VCI* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the port number is found in the *ConnID* column in the format *Nodename.Slot.Port.0* in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, dncon, dspchan, dspchans, dspcon, dspcons, rrtcon, tstchan, tstdelay, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans

Attributes

Log: No	State: Active	Privilege: Group 1

Example

Test the connection on port 1.

```
PXM1E_SJ.1.4.CESM.a > tstcon 1

TestCon in progress.

TestCon Passed.

PXM1E_SJ.1.4.CESM.a >
```

tstdelay

Test Delay—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **tstdelay** command to test a connection.

The **tstdelay** command is similar to the **tstcon** command in that it also checks connection continuity. The **tstdelay** command also measures the round-trip delay through the network, and the results are output on the CLI. The most recent relay measurement is also reported in the **dspcon** output.

The **tstdelay** command has the same limitations as the **tstcon** command: It works only for local connections or connections in a tiered network comprising a Cisco backbone network; it should be issued from both ends to completely verify connectivity; and a passing result of the test does not guarantee the connection's end-to-end performance.

Syntax

tstdelay <*chan_num*>

Syntax Description

<table>
<tr><td>chan_num</td><td>Specify the channel for the connection to be tested. You can view connection information with the dspcons and dspchans commands.
• On PXM1E, PXM45 platforms:
– T1 Channel Range = 35-226
– E1 Channel Range = 35-282
• On PXM1 platforms:
– T1 Channel Range = 32-223
– E1 Channel Range = 32-279
Tip On PXM1E and PXM45 platforms, the channel number is found in the LCN column in the output of the dspcons and dspchans commands. On the PXM1 platform, the channel number is found in the ChNum column in the output of the dspcons and dspchans commands.</td></tr>
</table>

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, dncon, dspchan, dspchans, dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchan, xdspchans

Attributes

Log: No	State: Active	Privilege: Group 1

Example

Test the connection labeled channel 35.

```
PXM1E_SJ.1.4.CESM.a > tstdelay 35

TestDelay in progress.

TestDelay Passed with 2 ms.

PXM1E_SJ.1.4.CESM.a >
```

upcon

Up Connection (PXM1E/PXM45 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **upcon** command to bring up a connection.

Note This command operates only on master endpoints.

Syntax

upcon <*Chan Num*>

Syntax Description

Chan Num	Specify the channel of the connection to bring up. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, dncon, dspchan, dspchans, dspcon, dspcons, rrtcon, tstchan, tstcon, xcnfchan, xcnfcon, xdspchan, xdspchans

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Bring up the connection using channel 36.

```
PXM1E_SJ.1.4.CESM.a > upcon 36

PXM1E_SJ.1.4.CESM.a >
```

version

Display Versions—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **version** command to view CESM or MPSM card software information, such as firmware version, operating system kernel version, and the date of the software build.

Syntax

version

Syntax Description

None

Related Commands

dspcd

Attributes

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display version information on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > version
***** Cisco System MPSM-8-T1E1 Card *****
    Firmware Version            = 030.000.001.077-A
    Backup Boot Version         = 030.000.001.077-A
VxWorks (for Broadcom BCM1125) version VxWorks5.4.2.
Kernel: WIND version 2.5.
Made on Dec  5 2003, 12:19:50.
Boot line:

M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display version information on the current CESM card.

```
PXM1E_SJ.1.20.CESM.a > version

***** Cisco Systems CESM-8T1E1 Card *****
    Firmware Version    = 020.000.001.000-D
    Backup Boot version = CE8_BT_1.0.01
    ASCFRSM Xilinx file = cbslave.h
VxWorks (for CISCO) version 5.3.1.
Kernel: WIND version 2.5.
Made on Jul  1 2002, 23:19:34.
Boot line:
Boot from PROM


PXM1E_SJ.1.20.CESM.a >
```

xclrchancnt

Clear Channel Statistics Count—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xclrchancnt** command to clear the statistics counters for a connection.

Syntax

xclrchancnt -chn <*ChanNum*>

Syntax Description

-chn	Specify the channel number for the connection where statistics are to be cleared. You can view channel information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

clrchancnt, clrchancnts, dspchancnt, dspchans, **dspcons, xdspchancnt, xdspchans**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Group 1

Example

Clear the statistics for channel 19.

```
PXM1E_SJ.1.20.CESM.a > xclrchancnt -chn 19

PXM1E_SJ.1.20.CESM.a >
```

xcnfalm

Configure Alarm Counters and Statistics—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **xcnfalm** command to modify alarm counters, thresholds, and statistics for a specific line on the current CESM or MPSM card.

Syntax

xcnfalm -ds1 <*LineNum*> [-red <*RedSeverity*>] [-rai <*RAISeverity*>] [-neu <*NEAlarmUpcount*>] [-ned <*NEAlarmDncount*>] [-net <*NEAlarmThreshold*>] [-feu <*FEAlarmUpcount*>] [-fed <*FEAlarmDncount*>] [-fet <*FEAlarmThreshold*>]

Syntax Description

-ds1	Line number for the line you want to configure. Use the **dsplns** command to view the available lines.
-red	RedSeverity. • 1 = minor • 2 = major
-rai	Remote Alarm Indication (RAI) Severity. • 1 = minor • 2 = major
-neu	Near-end Alarm Up Count. Range is 1–65535.
-ned	Near-end Alarm Down Count. Range is 1–65535.
-net	Near-end Alarm Threshold. Range is 1–65535.
-feu	Far-end Alarm Up Count. Range is 1–65535.
-fed	Far-end Alarm Down Count. Range is 1–65535.
-fet	Far-end Alarm Threshold. Range is 1–65535.

Related Commands

clralm, clralmcnt, clralmcnts, clralms, dspalm, dspalmcnf, dspalmcnt, dspalms, dsplns, **xcnfalmcnt**

Attributes

Log: Yes	State: Active	Privilege: Service Group

Example

On line 1 on the current CESM card, change the near end alarm upcount to 10.

```
M8850_SF.1.30.CESM.a > xcnfalm -ds1 1 -neu 10

M8850_SF.1.30.CESM.a >
```

xcnfalmcnt

Configure Alarm Counters—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xcnfalmcnt** command to modify threshold values of statistical alarm counters for a specific line on the current CESM or MPSM card.

Syntax

xcnfalmcnt -ds1 <*LineNum*> [-sev <*StatisticalAlarmSeverity*>] [-lcv15 <*lCV15minThreshold*>] [-lcv24 <*lCV24hrThreshold*>] [-les15 <*lES15minThreshold*>] [-les24 <*lES24hrThreshold*>] [-lses15 <*lSES15minThreshold*>] [-lses24 <*lSES24hrThreshold*>] [-crc15 <*cRC15MinThreshold*>] [-crc24 <*cRC24HrThreshold*>] [-crces15 <*cRCES15MinThreshold*>] [-crces24 <*cRCES24HrThreshold*>] [-crcses15 <*cRCSES15MinThreshold*>] [-crcses24 <*cRCSES24hrThreshold*>] [-sefs15 <*sEFS15minThreshold*>] [-sefs24 <*sEFS24hrThreshold*>] [-aiss15 <*aISS15minThreshold*>] [-aiss24 <*aISS24hrThreshold*>] [-uas15 <*uAS15minThreshold*>] [-uas24 <*uAS24hrThreshold*>]

Syntax Description

-ds1	Line number for the line you want to configure. Use the **dsplns** command to view the available lines. Line range is 1-8.
-sev	Statistical Alarm Severity. • 1 = minor (default) • 2 = major
-lcv15	Line Code Violation 15 min Threshold. Range is 1-65535. (default = 14)
-lvc24	Line Code Violation 24 hr Threshold. Range is 1-65535. (default = 134)
-les15	Line Errored Seconds 15 min Threshold. Range is 1-65535. (default = 12)
-les24	Line Errored Seconds 24 hr Threshold. Range is 1-65535. (default = 121)
-lses15	Line Severely Errored Seconds 15 min Threshold. Range is 1-65535. (default = 10)
-lses24	Line Severely Errored Seconds 24 hr Threshold. Range is 1-65535. (default = 100)
-crc15	Cyclic Redundancy Check 15 min Threshold. Range is 1-65535. (default = 14)
-crc24	Cyclic Redundancy Check 24 hr Threshold. Range is 1-65535. (default = 134).
-crces15	Cyclic Redundancy Check Errored Seconds 15 min Threshold. Range is 1-65535. (default = 12)
-crces24	Cyclic Redundancy Check Errored Seconds 24 hr Threshold. Range is 1-65535. (default = 121)

-crcses15	Cyclic Redundancy Check Severely Errored Seconds 15 min Threshold. Range is 1-65535. (default = 10)
-crcses24	Cyclic Redundancy Check Severely Errored Seconds 24 hr Threshold. Range is 1-65535. (default = 100)
-sefs15	Severely Errored Frame Seconds 15 min Threshold. Range is 1-65535. (default = 2)
-sefs24	Severely Errored Frame Seconds 24 hr Threshold. Range is 1-65535. (default = 17)
-aiss15	Alarm Indication Signalling Seconds 15 min Threshold. Range is 1-65535. (default = 2)
-aiss24	Alarm Indication Signalling Seconds 24 hr Threshold. Range is 1-65535. (default = 17)
-uas15	Unavailable Seconds 15 min Threshold. Range is 1-65535 . (default = 10)
-uas24	Unavailable Seconds 24 hr Threshold. Range is 1-65535. (default = 10)

Related Commands

clralm, **clralmcnt**, **clralmcnts**, **clralms**, **dspalm**, **dspalmcnf**, **dspalmcnt**, **dspalms**, **xcnfalm**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Change the statistical alarm severity from minor to major on line 1 of the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > xcnfalmcnt -ds1 1 -sev 2

M8850_SF.1.28.MPSM8T1.CES.a >
```

xcnfcdprtntype

Configure Card Partition Type (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xcnfcdprtntype** command to configure the LCN partition type that serves as the basis for sharing Global Logical Connection Number (GLCN) resources on a service module.

Note Although in the CLI, the **xcnfcdprtntype** command is not supported on the MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, or CESM-8E1 cards in Cisco MGX Release 1.3 (PXM1 platforms).

Syntax

xcnfcdprtntype -prtntype <*partition type*>

Syntax Description

-prtntype	LCN partition type. • 1 = No Partition. All controllers compete for LCN resources available on the service module. • 2 = Controller Based. All controllers reserve a fixed number of LCN resources. Port LCN resources are not reserved. • 3 = Port Controller Based. All controllers reserve LCN resources for each port.

Related Commands

cnfcdprtntype, dspcdprtntype

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Cisco Group

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

Configure the LCN partition type to be controller based on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > xcnfcdprtntype -prtntype 2

  Error occurred during the SNMP SET operation !!
  Probable Reason : "Cannot modify this object. It is a read only object"
  SNMP Error Code : 17

Error in setting the mib variable

M8250_SJ.1.22.MPSM8T1.CES.a >
```

xcnfcdrscprtn

Configure Card Resource Partition (PXM1 only)—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xcnfcdrscprtn** command to add, delete, or modify card-level resource partitions on the current CESM or MPSM card.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES

xcnfcdrscprtn -ctrlr <*controller*> -rs <*rowStatus*> -maxlcn <*max_lcn*>

Syntax: CESM-8T1/B, CESM-8T1, CESM-8E1

xcnfcdrscprtn -ctrlr <*controller*> -en <*rowStatus*> -maxlcn <*max_lcn*>

Syntax Description

-ctrlr	Resource partition controller to add, delete, or modify. • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
-rs, -en	Partition row status. • 1 = Add • 2 = Delete • 3 = Modify
-maxlcn	Maximum number of connections (LCNs) available to the resource partition controller. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 **Note** CESM-8E1, MPSM-8E1-CES range: 1–248When deleting a resource partition use of this option is not required.

Related Commands

addcdrscprtn, **cnfcdrscprtn**, **delcdrscprtn**, **dspcdrscprtn**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Any	Privilege: Cisco Group

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

On the current MPSM card, modify the PNNI resource partition controller to support a maximum of 75 connections.

```
M8250_SJ.1.22.MPSM8T1.CES.a > xcnfcdrscprtn -ctrlr 2 -rs 3 -maxlcn 75

M8250_SJ.1.22.MPSM8T1.CES.a >
```

xcnfchan

Configure Channel—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **xcnfchan** command to add connections, delete connections, or modify connection parameters.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1E, PXM45

xcnfchan -chn <*ChanNum*> -en <*ChanRowStatus*> [-admin <*connAdminStatus*>] [-cbrserv <*CBRService*>] [-clkmode <*MODE*>] [-cas <*CesCas*>] [-pf <*PartialFil*>] [-cdv <*CDVT*>] [-clip <*CLIP*>] [-maxbuf <*MAX BUF SIZE*>] [-rmtlb <*LocalRemoteLoopbackState*>] [-tstyp <*testType*>] [-pt <*PortNum*>] [-contp <*ConnType*>] [-chiden <*idleDetType*>] [-condat <*CondData*>] [-condsig <*CondSigCode*>] [-exis <*ExtIdlSupp*>] [-idintpd <*IntgrPeriod*>] [-chidsig <*IdleSigCode*>] [-onhkcd <*OnhookCode*>] [-locvpi <*localVpi*>] [-locvci <*localVci*>] [-locnsap <*localNSAP*>] [-rmtvpi <*remoteVpi*>] [-rmtvci <*remoteVci*>] [-rmtnsap <*remoteNSAP*>] [-master <*masterShip*>] [-vpcflag <*vpcFlag*>] [-cos <*connServiceType*>] [-rtngprio <*routingPriority*>] [-prefrte <*PreferredRouteID*>] [-directrte <*DirectedRoute*>] [-maxcost <*maxCost*>] [-type <*restrictedType*>] [-pcr <*PCR*>] [-pctutil <*percentUtil*>] [-rerout <*chanReroute*>] [-linecond <*status*>]

Syntax: MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1

xcnfchan -chn <*ChanNum*> -en <*ChanStatus*> [-cbrserv <*CBRService*>] [-clkmode <*MODE*>] [-cas <*CesCas*>] [-pf <*PartialFil*>] [-cdv <*CDVT*>] [-clip <*CLIP*>] [-maxbuf <*MAX BUF SIZE*>] [-rmtlb <*LocalRemoteLoopbackState*>] [-tstyp <*testType*>] [-pt <*PortNum*>] [-contp <*ConnType*>] [-chiden <*idleDetType*>] [-condat <*CondData*>] [-condsig <*CondSigCode*>] [-exis <*ExtIdlSupp*>] [-idintpd <*IntgrPeriod*>] [-chidsig <*IdleSigCode*>] [-onhkcd <*OnhookCode*>] [-locvpi <*localVpi*>] [-locvci <*localVci*>] [-locnsap <*localNSAP*>] [-rmtvpi <*remoteVpi*>] [-rmtvci <*remoteVci*>] [-rmtnsap <*remoteNSAP*>] [-master <*masterShip*>] [-vpcflag <*vpcFlag*>] [-cos <*connServiceType*>] [-rtngprio <*routingPriority*>] [-maxcost <*maxCost*>] [-type <*restrictedType*>] [-pcr <*PCR*>] [-pctutil <*percentUtil*>] [-linecond <*status*>]

Syntax Description

-chn	Enter the channel number for the connection you want to add or modify. The **dspchans** command shows the channel number for each existing connection. On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column. On the PXM1 platform, the channel number is found in the *ChNum* column. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279
-en	Channel Row Status. • Add = 1 • Delete = 2 • Modify = 3
-admin	Connection Admin Status. • Up = 1 • Down = 2
-cbrserv	CBR Service. • Unstructured = 1 • Structured = 2
-clkmode	Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3

-cas	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • CCS = 5 • Conditioned E1 CAS = 6 • Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.
-pf	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47. • Structured E1 range = 20 to 47. • Unstructured T1/E1 range = 33 to 47. **Note** For structured lines, the partial fill value should be greater than the number of DS0s assigned to port.
-cdv	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
-clip	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.

-maxbuf	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The minimum value depends on the CDVT configured. The size can be automatically computed, or you can enter a specific size in bytes. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)**N* or (CDVT + frames in 2 cells) * *N*} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384**N* • E1 SDT maximum value = 417**N* • *N* = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)
-rmtlb	Local Remote Loopback State. A channel local remote loopback is enabled on the local card and looped back in the direction of the network to the remote end of a connection, hence the term *local remote*. • Enable = 1 • Disable = 2 **Note** This option is not supported on the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards. For additional information on loopbacks supported by CESM and MPSM cards, see Chapter 5, "Managing CESM and MPSM Cards."
-tstyp	Test Type. • Test Continuity = 1 (Same functionality as **tstcon** command) • Test Delay = 2 (Same functionality as **tstdelay** command)
-pt	Port Number. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
-contp	Connection type. Select one of the following: • PVC = 1 • SVC = 2 • SPVC = 3 • PAR = 4 • PNNI = 5 • TAG = 6
-chiden	Idle Detection Type. • 1 = Disable • 2 = Enable On Hook Detection • 3 = Enable Idle Pattern Detection (Not Supported)

-condat	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255
-condsig	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.
-exis	Ext Idle Suppression. • Disable = 1 • Enable = 2
-idintpd	Integration Period. Range is 0-100.
-chidsig	Idle Signalling Code. Range is 0-15.
-onhkcd	On Hook Code. Range is 0-15. ABCD = 0000 = 0 … ABCD = 1111 = 15.
-locvpi	Local VPI. Range is 1-65536.
-locvci	Local VCI. Range is 1-65536.
-locnsap	Local NSAP address. The format is: *RemoteNsapAddress.VPI.VCI*. You can view the address components for a local connection using the **dspcon** or **dspchan** command.
-rmtvpi	Remote VPI. Range is 1-65536.
-rmtvci	Remote VCI. Range is 1-65536.
-rmnsap	Remote NSAP address. The format is: *RemoteNsapAddress.VPI.VCI*. You can view the address components for a remote connection using the **dspcon** or **dspchan** command.
-master	Mastership role of connection. Select from the following options: • 1 = master • 2 = slave
-vpcflag	Indicates whether to connection is a VPC or a VCC. • 1 = VPC • 2 = VCC

-cos	Connection Service Type. – 1 = CBR – 2 = VBR – 3 = Not used – 4 = UBR – 5 = ATFR – 6 = ABRSTD – 7 = ABRFST – 21 = CBR1 – 31 = CBR2 (Used only for signalling with UNI 3.1 devices) – 32 = CBR3 (Used only for signalling with UNI 3.1 devices)
-rtngprio	Routing priority for this connection. This parameter defines the rerouting derouting priority of the connection. Range is 1-15. Default setting is 8.
-prefrte	Preferred Route ID for this connection. The preferred route feature is applicable only to the master end of an SPVC. This option assigns a unique identifier for the preferred route to which this connection is associated. When the route ID is set to 0, the connection is not associated with any preferred routes. Range is 0 to 65,535. Default is 0.
-directrte	Directed Route option. When this option is yes, the associated preferred route is the only permissible route for the connection to take. Should the directed preferred route be unavailable, the connection is failed. When the option is no, the connection is allowed to try another alternate route should the preferred route be unavailable. • 1 = Yes • 2 = No (default)
-maxcost	Maximum end-to-end cost for the connection. The VSI controller uses the maximum cost to determine which network routes are available to the connection. The maximum cost is the calculated sum of the administrative weights (AWs) in both directions on every hop in a selected route. Range is 1 to 2,147,483,647. Default setting is 2147483647.
-type	Trunk restriction option. • 1 = Enable connection routing without trunk restrictions (Default) • 2 = Restrict the connection routing to terrestrial trunks • 3 = Restrict the connection routing to satellite trunks
-pcr	Peak cell rate in cells per second (cps). Range is 171-9000.
-pctutil	Percent utilization. Range is 1-100.
-rerout	Channel Reroute. • True = 1 • False = 2

-linecond	Line conditioning state. Use this parameter to enable or disable line conditioning on a channel configured on a structured Circuit Emulation port. This is helpful in applications where T1 to E1 conversion is required. When enabled on a channel, unframed AIS signals are sent on the line associated with the channel when the channel receives AIS OAM from the remote end indicating a remote line failure. When disabled on a channel, unframed AIS signals are not sent on the line associated with the channel when the channel receives AIS OAM from the remote end indicating a remote line failure. • 1 = Enable • 2 = Disable (Default) For more information on this feature, see "Managing Line Conditioning" in Chapter 5, "Managing CESM and MPSM Cards."

Related Commands

addcon addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon**, **dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, tstdelay, upcon, dspports, xcnfcon, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Change the cell delay variation time on channel 35 to 875 microseconds.

```
M8850_SF.1.30.CESM.a > xcnfchan -chn 35 -en 3 -cdv 875

M8850_SF.1.30.CESM.a >
```

xcnfcon

Configure Connection—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **xcnfcon** command to add connections, delete connections, or modify connection parameters.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1E, PXM45

xcnfcon -chn <*ChanNum*> -en <*ChanRowStatus*> [-admin <*connAdminStatus*>]
[-cbrserv <*CBRService*>] [-clkmode <*MODE*>] [-cas <*CesCas*>] [-pf <*PartialFil*>] [-cdv <*CDVT*>]
[-clip <*CLIP*>] [-maxbuf <*MAX BUF SIZE*>] [-rmtlb <*LocalRemoteLoopbackState*>]
[-tstyp <*testType*>] [-pt <*PortNum*>] [-contp <*ConnType*>] [-chiden <*idleDetType*>]
[-condat <*CondData*>] [-condsig <*CondSigCode*>] [-exis <*ExtIdlSupp*>] [-idintpd <*IntgrPeriod*>]
[-chidsig <*IdleSigCode*>] [-onhkcd <*OnhookCode*>] [-locvpi <*localVpi*>] [-locvci <*localVci*>]
[-locnsap <*localNSAP*>] [-rmtvpi <*remoteVpi*>] [-rmtvci <*remoteVci*>] [-rmtnsap <*remoteNSAP*>]
[-master <*masterShip*>] [-vpcflag <*vpcFlag*>] [-cos <*connServiceType*>] [-rtngprio <*routingPriority*>]
[-prefrte <*PreferredRouteID*>] [-directrte <*DirectedRoute*>] [-maxcost <*maxCost*>]
[-type <*restrictedType*>] [-pcr <conn*PCR*>] [-mcr <connMCR>] [-pctutil <*percentUtil*>]
[-rerout <*chanReroute*>] [-linecond <*status*>]

Syntax: MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1 on PXM1

xcnfcon -chn <*ChanNum*> -en <*ChanStatus*> [-cbrserv <*CBRService*>] [-clkmode <*MODE*>]
[-cas <*CesCas*>] [-pf <*PartialFil*>] [-cdv <*CDVT*>] [-clip <*CLIP*>] [-maxbuf <*MAX BUF SIZE*>]
[-rmtlb <*LocalRemoteLoopbackState*>] [-tstyp <*testType*>] [-pt <*PortNum*>] [-contp <*ConnType*>]
[-chiden <*idleDetType*>] [-condat <*CondData*>] [-condsig <*CondSigCode*>] [-exis <*ExtIdlSupp*>]
[-idintpd <*IntgrPeriod*>] [-chidsig <*IdleSigCode*>] [-onhkcd <*OnhookCode*>] [-locvpi <*localVpi*>]
[-locvci <*localVci*>] [-locnsap <*localNSAP*>] [-rmtvpi <*remoteVpi*>] [-rmtvci <*remoteVci*>]
[-rmtnsap <*remoteNSAP*>] [-master <*masterShip*>] [-vpcflag <*vpcFlag*>] [-cos <*connServiceType*>]
[-rtngprio <*routingPriority*>] [-maxcost <*maxCost*>] [-type <*restrictedType*>] [-pcr <*PCR*>]
[-pctutil <*percentUtil*>] [-linecond <*status*>]

Syntax Description

-chn	Enter the channel number for the connection you want to modify. The **dspchans** command shows the channel number for each connection. On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column. On the PXM1 platform, the channel number is found in the *ChNum* column. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279
-en	Channel Row Status. • Add = 1 • Delete = 2 • Modify = 3
-admin	Connection Admin Status. • Up = 1 • Down = 2
-cbrserv	CBR Service. • Unstructured = 1 • Structured = 2
-clkmode	Clock mode. • Synchronous = 1 • SRTS (asynchronous) = 2 • Adaptive (asynchronous) = 3

-cas	Channel associated signalling (CAS) value. • Basic = 1 • E1 CAS = 2 • DS1 superframe CAS = 3 • DS1 extended superframe CAS = 4 • CCS = 5 • Conditioned E1 CAS = 6 • Basic without AAL1 Pointer = 7 • DS1 SF CAS MF (available with multiframe option enabled) = 8 (Supported only on CESM-8T1/B) • DS1 ESF CAS MF (available with multiframe option enabled) = 9 (Supported only on CESM-8T1/B) **Note** The channels on a particular line can be either all MF (SF MF or ESF MF) or all non-MF (SF or ESF). The first connection type added on a particular line (MF/non-MF) decides the sync. mode. The second connection must have the same cesCAS type, and so on.
-pf	Partial fill for ATM cells. This option determines how many bytes must be assembled before an ATM cell is sent across the network. Partially filled cells take less time to assemble and reduce transmission delay. However, partially filled cells consume more ATM network bandwidth. You can select the number of bytes for ATM cells as follows: • Fully filled (48 bytes) = 0 • Structured T1 range = 25 to 47. • Structured E1 range = 20 to 47. • Unstructured T1/E1 range = 33 to 47. **Note** For structured lines, the partial fill value should be greater than the number of DS0s assigned to port.
-cdv	The Cell Delay Variation Time (CDVT) determines the amount of delay variation in the network that can be accommodated by the egress buffer. The CDVT value is how much the egress buffer is filled before sending cells to the attached CPE. This parameter allows you to configure the maximum cell arrival jitter that the reassembly process will tolerate in the cell stream without producing errors on the CBR service interface. Enter the CDVT in increments of 125 microseconds: • T1 range = 125-24000 microseconds • E1 range = 125-26000 microseconds
-clip	The Cell loss integration period (CLIP) is the amount of time the egress buffer can be under run before an alarm is declared. Range: 1000 to 65535 milliseconds.

-maxbuf	Maximum egress buffer size in bytes. Buffers are used to mitigate variations in the cell delay. The minimum value depends on the CDVT configured. The size can be automatically computed, or you can enter a specific size in bytes. The ranges are as follows: • Autocompute = 0 • Minimum value = the greater of {(CDVT in frames*2)**N* or (CDVT + frames in 2 cells) * *N*} • T1/E1 UDT maximum value = 16224 • T1 SDT maximum value = 384**N* • E1 SDT maximum value = 417**N* • *N* = Number of 64 Kbps time slots (SDT) = 32 (T1/E1 UDT)
-rmtlb	Local Remote Loopback State. A channel local remote loopback is enabled on the local card and looped back in the direction of the network to the remote end of a connection, hence the term *local remote*. • Enable = 1 • Disable = 2 **Note** This option is not supported on the CESM-8T1/B, CESM-8T1, and CESM-8E1 cards. For additional information on loopbacks supported by CESM and MPSM cards, see Chapter 5, “Managing CESM and MPSM Cards.”
-tstyp	Test Type. • Test Continuity = 1 (Same functionality as **tstcon** command) • Test Delay = 2 (Same functionality as **tstdelay** command)
-pt	Enter the port number for the port that hosts the connection you want to add or modify. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
-contp	Connection type. Select one of the following: • PVC = 1 • SVC = 2 • SPVC = 3 • PAR = 4 • PNNI = 5 • TAG = 6
-chiden	Idle Detection Type. • 1 = Disable • 2 = Enable On Hook Detection • 3 = Enable Idle Pattern Detection (Not Supported)

-condat	Conditional data is the bit pattern that is used in the data timeslots when there is an underflow or when there is a loss of signal (LOS). For a voice connection, the larger the *ConditionalData* value, the louder the hiss heard during LOS. The data pattern is configured as a base-10 number to represent an 8-bit binary code. • UDT = 255 • SDT range = 0 to 255
-condsig	Conditional signalling is the signalling bits that are sent on the line when there is an underflow and also toward the network when forming dummy cells. Conditional signalling is a string of bits that you specify with a base-10 number in the range 0–15, where, for example, 15=1111, and 0=0000. These bits represent the four binary signalling bits (A, B, C, and D) to the line or network when an underflow occurs.
-exis	Ext Idle Suppression. • Disable = 1 • Enable = 2
-idintpd	Integration Period. Range is 0-100.
-chidsig	Idle Signalling Code. Range is 0-15.
-onhkcd	On Hook Code. Range is 0-15. ABCD = 0000 = 0 … ABCD = 1111 = 15.
-locvpi	Local VPI. Range is 1-65536.
-locvci	Local VCI. Range is 1-65536.
-locnsap	Local NSAP address. The format is: *RemoteNsapAddress.VPI.VCI*. You can view the address components for a local connection using the **dspcon** or **dspchan** command.
-rmtvpi	Remote VPI. Range is 1-65536.
-rmtvci	Remote VCI. Range is 1-65536.
-rmnsap	Remote NSAP address. The format is: *RemoteNsapAddress.VPI.VCI*. You can view the address components for a remote connection using the **dspcon** or **dspchan** command.
-master	Mastership role of connection. Select from the following options: • 1 = master • 2 = slave
-vpcflag	Indicates whether to connection is a VPC or a VCC. • 1 = VPC • 2 = VCC

-cos	Connection Service Type. – 1 = CBR – 2 = VBR – 3 = Not used – 4 = UBR – 5 = ATFR – 6 = ABRSTD – 7 = ABRFST – 21 = CBR1 – 31 = CBR2 (Used only for signalling with UNI 3.1 devices) – 32 = CBR3 (Used only for signalling with UNI 3.1 devices)
-rtngprio	Routing priority for this connection. This parameter defines the rerouting derouting priority of the connection. Range is 1 to 15. Default setting is 8.
-prefrte	Preferred Route ID for this connection. The preferred route feature is applicable only to the master end of an SPVC. This option assigns a unique identifier for the preferred route to which this connection is associated. When the route ID is set to 0, the connection is not associated with any preferred routes. Range is 0 to 65,535. Default is 0.
-directrte	Directed Route option. When this option is yes, the associated preferred route is the only permissible route for the connection to take. Should the directed preferred route be unavailable, the connection is failed. When the option is no, the connection is allowed to try another alternate route should the preferred route be unavailable. • 1 = Yes • 2 = No (default)
-maxcost	Maximum end-to-end cost for the connection. The VSI controller uses the maximum cost to determine which network routes are available to the connection. The maximum cost is the calculated sum of the administrative weights (AWs) in both directions on every hop in a selected route. Range is 1 to 2,147,483,647. Default setting is 2147483647.
-type	Trunk restriction option. • 1 = Enable connection routing without trunk restrictions (Default) • 2 = Restrict the connection routing to terrestrial trunks • 3 = Restrict the connection routing to satellite trunks
-pcr	Connection Peak Cell Rate in cells per second (cps). Range is 171-9000.
-mcr	Connection Minimum Cell Rate in cells per second (cps). Range is 1-65535.
-pctutil	Percent utilization. Range is 1-100.

-rerout	Channel Reroute. • True = 1 • False = 2
-linecond	Line conditioning state. Use this parameter to enable or disable line conditioning on a channel configured on a structured Circuit Emulation port. This is helpful in applications where T1 to E1 conversion is required. When enabled on a channel, unframed AIS signals are sent on the line associated with the channel when the channel receives AIS OAM from the remote end indicating a remote line failure. When disabled on a channel, unframed AIS signals are not sent on the line associated with the channel when the channel receives AIS OAM from the remote end indicating a remote line failure. • 1 = Enable • 2 = Disable (Default) For more information on this feature, see "Managing Line Conditioning" in Chapter 5, "Managing CESM and MPSM Cards."

Related Commands

addcon addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, **dncon**, **dspchan, dspchans, dspcon**, **dspcons, rrtcon, tstchan, tstcon, tstdelay, upcon, dspports, xcnfchan, xdspchan, xdspchans**

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Bring the connection on channel 37 administratively down.

```
M8850_SF.1.26.CESM.a > xcnfcon -chn 37 -en 3 -admin 2

M8850_SF.1.26.CESM.a >
```

xcnfln

Configure Line—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xcnfln** command to configure line characteristics.

Note RS-232 ports are not supported on the current set of CESM and MPSM cards.

Syntax

To configure RS-232 lines:

xcnfln -rs232 <*PortNum*> [-e <*PortEnable*>] [-b <*PortBps*>]

To configure DS1 lines:

xcnfln -ds1 <*LineNum*> [-ct <*ConnectorType*>] [-e <*LineEnable*>] [-lt <*LineType*>] [-lc <*LineCoding*>] [-len <*LineLength*>] [-clk <*XmtClkSource*>] [-lpb <*LoopCmd*>] [-sc <*SendCode*>] [-be <*BertEnable*>] [-bert <*BertPattern*>] [-detect <*LoopbackCodeDetection*>]

Syntax Description

-rs232	Enter the number of the RS-232 port you want to configure. Use the **xdsplns** -rs232 command to view the available rs232 ports. **Note** RS-232 ports are not supported on the current set of CESM and MPSM cards.
-e	RS-232 Port Enable. • Disable = 1 • Enable = 2 **Note** RS-232 ports are not supported on the current set of CESM and MPSM cards.
-b	Port speed in bps. Available port speeds are 9600, 2400, 19200. **Note** RS-232 ports are not supported on the current set of CESM and MPSM cards.
-ds1	Enter the number of the line you want to configure. Use the **dsplns** command to view the available lines.
-ct	Connector type. • RJ48 = 3 • SMB = 5
-e	Line enable. • Disable = 1 • Enable = 2 • Modify = 3

-lt	Line type. CESM-8T1/B, CESM-8T1, CESM-8E1: • dsx1 ESF = 1 (T1 line) • dsx1 D4 = 2 (T1 line) • dsx1 E1 = 3 • dsx1 E1 CRC = 4 • dsx1 E1 MF = 5 • dsx1 E1 MF CRC = 6 • dsx1 E1 CLEAR = 7 MPSM-8T1-CES, MPSM-8E1-CES: • dsx1 ESF = 1 (T1 line) • dsx1 D4 = 2 (T1 line) • dsx1 E1 CCS = 3 • dsx1 E1 CCS CRC = 4 • dsx1 E1 CAS = 5 • dsx1 E1 CAS CRC = 6 • dsx1 E1 CLEAR = 7
-lc	Line coding. • dsx1 B8ZS = 2 (T1 line) • dsx1 HDB3 = 3 (E1 line) • dsx1 AMI = 4 (T1 or E1 line)
-len	Line length. • E1 SMB 75 ohm (G.703) = 8 • E1 RJ48 120 ohm (G.703) = 9 • T1: 10–15 – 10: 0–131 ft. – 11: 131–262 ft. – 12: 262–393 ft. – 13: 393–524 ft. – 14: 524–655 ft. – 15: 655+ ft.
-clk	Xmt Clock Source. • Loop Clock = 1 • Local Clock = 2

-lpb	Type of loopback. • No loop = 1 • Remote loop = 2 (MPSM only) • Local loop = 3 **Note** On the CESM-8T1/B, CESM-8T1, and CESM-8E1, remote line loopback must be enabled through the use of the SRM. For additional information on loopbacks supported by the CESM and MPSM cards, see Chapter 5, "Managing CESM and MPSM Cards."
-sc	Send code. • No code = 1 • Line code = 2 • Payload code = 3 • Reset code = 4 **Note** This option is not supported in this command. For information on BERT, see Chapter 5, "Managing CESM and MPSM Cards," and refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.
-detect	Loopback code detection. • Code detect disabled = 1 • Code detect enabled = 2

-be	BERT enable. • Disable = 1 • Enable = 2 **Note** This option is not supported in this command. For information on BERT, see Chapter 5, "Managing CESM and MPSM Cards," and refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.
-bert	BERT Pattern. • 0000 = 0 • 1111 = 1 • 0101 = 2 • 0011 = 3 • User one word = 4 • User two word = 5 • User three word = 6 • User four words = 7 • 2^15-1 = 8 • 2^20-1 = 9 • QRSS = 10 • 2^23-1 = 11 **Note** This option is not supported in this command. For information on BERT, see Chapter 5, "Managing CESM and MPSM Cards," and refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Related Commands

addln, **addlnloop, cnfln, delln, dellnloop, dspln, dsplns, xdspln, xdsplns**

Attributes

Log: Yes	State: Active	Privilege: Service Group

Example

Place line 3 on the current CESM card in local loopback.

```
M8830_CH.1.6.CESM.a > xcnfln -ds1 3 -e 3 -lpb 3

M8830_CH.1.6.CESM.a >
```

xcnfport

Configure Port—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xcnfport** command to add or delete circuit emulation ports. This command does not support modifying a circuit emulation port that has already been added. In order to modify an existing port configuration you must first delete the port and then add the port again with the new port configuration parameters using either the **addport** or **xcnfport** command.

Syntax

xcnfport -pt <*PortNum*> -ln <*PortLineNum*> -en <*PortEnable*> [-ts <*PortDs0ConfigBitMap*>]

[-ptp <*PortType*>] [-pbe <*BertEnable*>]

Syntax Description

-pt	Enter the port number you want to add or modify. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248
-ln	Line number to which the port definition or modification applies. To display the lines that have been added, enter the **dsplns** command. You cannot add a port to a line unless the Status/Coding column shows that the line is enabled (Ena).
-en	Port Row Status. • Add = 1 • Delete = 2 • Modify = 3
-ts	Port Ds0 Config Bit Map. Enter a hexadecimal number. For example, to use timeslots 1-24 on a T1 line, enter ffffff. To use timeslots 5-24 on a T1 line, enter fffff0. The least-significant bit is the lowest timeslot number. For more information on the timeslots supported by each card type, see the *begin_slot* and *num_slot* parameters of the **addport** command.

-ptp	Port type. • Structured = 1 (This port type cannot be modified using the -en option) • Unstructured = 2 • Framing on VC Disconnect = 3
-pbe	BERT enable. • Disable = 1 • Enable = 2 **Note** This option is not supported in this command. For information on BERT, see Chapter 5, "Managing CESM and MPSM Cards," and refer to the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Configuration Guide, Release 5*, and the *Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3* documentation.

Related Commands

addport, delport, delports, dsplns, dspport, dspports, xdspport, xdspports

Attributes

Log: Yes	State: Active	Privilege: Group 1

Example

Add structured port 5 to line 3, using all 24 time slots on the current CESM card.

```
M8850_SF.1.26.CESM.a > xcnfport -pt 5 -ln 3 -en 1 -ts ffffff -ptp 1

M8850_SF.1.26.CESM.a >
```

xcnfrscprtn

Configure Resource Partition—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B (PXM1 only), CESM-8T1 (PXM1 only), CESM-8E1 (PXM1 only)

Use the **xcnfrscprtn** command to modify the configuration of a port-level resource partition.

Syntax: MPSM-8T1-CES, MPSM-8E1-CES on PXM1E, PXM45

xcnfrscprtn -pt <*portNum*> -ctrlr <*controller*> -en <*rowStatus*> [-maxlcn <*max_lcn*>] [-lolcn <*lcn_low*>] [-hilcn <*lcn_high*>] [-ingrbw <*ingressBW*>] [-egrbw <*egressBW*>] [-ctrlr_id <*CtrlrId*>]

Syntax: MPSM-8T1-CES, MPSM-8E1-CES on PXM1

xcnfrscprtn -pt <*portNum*> -ctrlr <*controller*> -en <*rowStatus*> [-maxlcn <*max_lcn*>] [-lolcn <*lcn_low*>] [-hilcn <*lcn_high*>] [-ingrbw <*ingressBW*>] [-egrbw <*egressBW*>]

Syntax: CESM-8T1/B, CESM-8T1, CESM-8E1

xcnfrscprtn -rscpt <*portNum*> -ctrlr <*controller*> -en <*rowStatus*> [-lolcn <*lcn_low*>] [-hilcn <*lcn_high*>] [-ingrbw <*ingressBW*>] [-egrbw <*egressBW*>]

Syntax Description

-pt, -rscpt	Port number associated with the resource partition to be modified. You must add a port to a line before you can modify the resource partition on a port. Use the **dspports** command to view the available ports.
-cntrlr	Controller for this partition: • 1 = PAR (PVC) • 2 = PNNI (SPVC) • 3 = TAG (MPLS)
-en	Port Row Status. • Add = 1 • Delete = 2 • Modify = 3
-maxlcn	Maximum LCNs (connections) available in this port resource partition. Range by card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES: 1–192 • CESM-8E1, MPSM-8E1-CES: 1–248
-lolcn	Low LCN number available in this port resource partition. Range is 1 to 1000.
-hicn	High LCN number available in this port resource partition. Range is 1 to 1000.
-ingrbw	Ingress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for ingress communications. Range is 0 to 100 percent.

-egrbw	Egress bandwidth percentage. Enter the percentage of the line bandwidth to be used by this controller for egress communications. Range is 0 to 100 percent.
-ctrlr_id	Enter the number associated with the controller used by this partition. Range is 1 to 255.

Related Commands

addrscprtn, **cnfportrscprtn**, **cnfrscprtn**, **dspportrscprtn**, **dsprscprtn**, **delrscprtn, dspports**

Attributes: MPSM-8T1-CES, MPSM-8E1-CES

Log: Yes	State: Active	Privilege: Group 1

Attributes: CESM-8T1/B, CESM-8T1, CESM-8E1

Log: No	State: Any	Privilege: Cisco Group

Example

Modify the PNNI port-level resource partition configured on port 1 of the current MPSM card to use an ingress and egress bandwidth of 75 percent.

```
M8850_SF.1.28.MPSM8T1.CES.a > xcnfrscprtn -pt 1 -ctrlr 2 -en 3 -ingrbw 75 -egrbw 75

M8850_SF.1.28.MPSM8T1.CES.a >
```

xdspchan

Display Channel—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xdspchan** command to display configuration and operational data for a connection.

Syntax

xdspchan -chn <*ChanNum*>

Syntax Description

-chn	Specify the channel number for the connection to be displayed. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, cnfchan, cnfcon, delchan, delchans, delcon, dncon, dspchan, dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xcnfchan, xcnfcon, xdspchancnt, xdspchans

Attributes

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display the connection status and statistics for channel 37 on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdspchan -chn 37

  -------------------------------------------
  ChanNum:   37         RowStatus: Mod
  AdmnState: Up         ChanState: Ok
  ---------- ---------- ---------- ----------
  PORT-ALARM CTRLR-ABIT E-AIS/RDI  CELL-LOSS
  ---------- ---------- ---------- ----------
      NO         NO         NO         NO
  -------------------------------------------
```

```
  ChanNum:                   37
  ChanRowStatus:             Mod
  ConnAdminStatus:           Up
  ChanLineNum:               2
  ChanMapVpi:                26
  ChanMapVci:                37
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
  ChanCAS:                   Basic
  ChanPartialFill:           47
  ChanMaxBufSize:            192 bytes
  ChanCDVT:                  1000 micro seconds
  C L I P:                   2500 milliseconds
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:              TestOff
  ChanTestState:             NotInProgress
  ChanRTDresult:             65535 ms
  ChanPortNum                3
  ChanConnType               SPVC
  ISDetType                  DetectionDisabled
  CondData                   255
  CondSignalling             15
  ExtISTrig                  DisableIdleSupression
  ISIntgnPeriod              3 seconds
  ISSignallingCode           0
  OnHookCode                 1
  ChanLocalVpi:              26
  ChanLocalVci:              37
  ChanLocalNSAP:             47009181000000000164444b6100000107d30300
  ChanRemoteVpi:             11
  ChanRemoteVci:             100
  ChanRemoteNSAP:            4700918100000000036b5e2bb200000106180d00
  ChanMastership:            Master
  ChanVpcFlag:               Vcc
  ChanConnServiceType:       CBR1
  ChanRoutingPriority:       8
  ChanPreferredRouteId:      0
  ChanDirectedRoute:         No
  ChanMaxCost:               2147483647
  ChanRestrictTrunkType:     No Restriction
  ChanConnPCR:               2048
  ChanConnMCR:               2048
  ChanConnPercentUtil:       100
  Channel Reroute:           False
  ChanLineConditionState:    Disabled

  ChanNumNextAvailable:  38

M8850_SF.1.26.CESM.a >
```

Example: PXM1

Display the connection status and statistics for channel 32 on the current CESM card.

```
M8250_SJ.1.3.CESM.a > xdspchan -chn 32

  ChanNum:                   32
  ChanRowStatus:             Mod
  ChanLineNum:               1
  ChanMapVpi:                3
  ChanMapVci:                32
  ChanCBRService:            struct
  ChanClockMode:             Synchronous
```

```
  ChanCAS:                  Basic
  ChanPartialFill:          47
  ChanMaxBufSize:           192 bytes
  ChanCDVT:                  1000 micro seconds
  C L I P:                  2500 milliseconds
  ChanLocalRemoteLpbkState: Disabled
  ChanTestType:             TestOff
  ChanTestState:            NotInProgress
  ChanRTDresult:            65535 ms
  ChanPortNum               1
  ChanConnType              PVC
  ISDetType                 DetectionDisabled
  CondData                  255
  CondSignalling            15
  ExtISTrig                 DisableIdleSupression
  ISIntgnPeriod             3 seconds
  ISSignallingCode          0
  OnHookCode                1
  ChanLocalVpi:             0
  ChanLocalVci:             0
  ChanLocalNSAP:            4d383235305f534a000000000000000003000100
  ChanRemoteVpi:            11
  ChanRemoteVci:            100
  ChanRemoteNSAP:           4d383235305f534a000000000000000000000100
  ChanMastership:           Master
  ChanVpcFlag:              Vcc
  ChanConnServiceType:      CBR
  ChanRoutingPriority:      1
  ChanMaxCost:              2147483647
  ChanRestrictTrunkType:    No Restriction
  ChanConnPCR:              2048
  ChanConnMCR:              2048
  ChanConnPercentUtil:      100
  ChanLineConditionState:   Disabled

  ChanNumNextAvailable:  33

M8250_SJ.1.3.CESM.a >
```

xdspchancnt

Display Channel Count—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xdspchancnt** command to display statistics information for a connection. Use this command to view the traffic being processed on a specific connection. Because the statistics are historical, you might want to clear them using the **clrchancnt** or **clrchancnts** command before beginning your testing or troubleshooting.

Syntax

xdspchancnt -chn <*ChanNum*>

Syntax Description

-chn	Specify the channel number for the connection to be displayed. You can view connection information with the **dspcons** and **dspchans** commands. • On PXM1E, PXM45 platforms: – T1 Channel Range = 35-226 – E1 Channel Range = 35-282 • On PXM1 platforms: – T1 Channel Range = 32-223 – E1 Channel Range = 32-279 **Tip** On PXM1E and PXM45 platforms, the channel number is found in the *LCN* column in the output of the **dspcons** and **dspchans** commands. On the PXM1 platform, the channel number is found in the *ChNum* column in the output of the **dspcons** and **dspchans** commands.

Related Commands

addcon, addconCDVT, addspvc, clrchancnt, clrchancnts, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans**, **dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xclrchancnt, xcnfchan, xcnfcon, xdspchan, xdspchans**

Attributes

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display the connection status and statistics for channel 35.

```
M8850_SF.1.28.MPSM8T1.CES.a > xdspchancnt -chn 35

ChanNum:                    35
Chan State:                 Failed
Chan RCV ATM State:         Other State
```

```
Chan XMT ATM State:        Sending AIS OAM
Cell Loss Status:          Cell Loss
Reassembled Cells:         0
Generated Cells:           284861796
Header Errors:             0
Seqence Mismatches :       0
Lost Cells:                0
Pointer Reframes:          0
Buffer Underflows:         0
Underflow Inserted Cells:  284105451
Buffer Overflows:          0
Overflow Drop Bytes:       0
Channel Uptime (secs.)     77149
Signalling Status          Offhook


M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display the connection status and statistics for channel 37.

```
M8850_SF.1.26.CESM.a > xdspchancnt -chn 37

ChanNum:                   37
Chan State:                Failed
Chan RCV ATM State:        Normal
Chan XMT ATM State:        Normal
Cell Loss Status:          Cell Loss
Reassembled Cells:         0
Generated Cells:           17979088
Header Errors:             0
Seqence Mismatches :       0
Lost Cells:                0
Channel Uptime (secs.)     8779
Signalling Status          Offhook


M8850_SF.1.26.CESM.a >
```

xdspchans

Display Channels—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xdspchans** command to display a summary of all the connections on the current CESM or MPSM card.

Syntax

xdspchans

Syntax Description

None

Related Commands

addcon, addconCDVT, addspvc, clrchancnt, clrchancnts, cnfchan, cnfcon, delchan, delchans, delcon, **dncon, dspchan, dspchans**, **dspcon, dspcons, rrtcon, tstchan, tstcon, upcon, xclrchancnt, xcnfchan, xcnfcon, xdspchan, xdspchancnt**

Attributes

Log: No	State: Any	Privilege: Any User

Example: PXM1E, PXM45

Display all connections configured on the current CESM card.

```
PXM1E_SJ.1.4.CESM.a > xdspchans

  LCN  Port.VPI.VCI Type M/S Clock PCR    CDVT  BufSz CLIP  Admin Alarm
  ---- ------------ ---- --- ----- ------ ----- ----- ----- ----- -----
  0035 001.04.035   stru S   Synch 4096   00500 00384 02500 Up    OK
  0036 002.04.036   stru M   Synch 4096   01000 00384 02500 Up    OK
  0037 003.04.037   stru S   Synch 4096   01000 00384 02500 Up    CTRLR-ABIT

  Number of channels:    3

  ChanNumNextAvailable:  38

PXM1E_SJ.1.4.CESM.a >
```

Example: PXM1

Display all connections configured on the current MPSM card.

```
M8250_SJ.1.22.MPSM8T1.CES.a > xdspchans

  Line     ConnId           ChNum Status CDVT  BufSize CLIP  CBRserv  Alarm
  ---- -------------------- ----- ------ ----- ------- ----- -------- -----
     1 M8250_SJ.22.1.0       32   Mod     1000   384    2500   struct Alarm

  ChanNumNextAvailable:  33

M8250_SJ.1.22.MPSM8T1.CES.a >
```

xdspln

Display Line Configuration—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **xdspln** command to view configuration for a specified line.

Note RS-232 ports are not supported on the current set of CESM or MPSM cards.

Syntax

xdspln -rs232 <*PortNum*>

or

xdspln -ds1 <*LineNum*>

Syntax Description

-rs232	Enter the number of the port you want to view. Use the **xdsplns** -rs232 command to view the available rs232 ports. **Note** RS-232 ports are not supported on the current set of CESM or MPSM cards.
-ds1	Enter the number of the line you want to view. Use the **dsplns** command to view the available lines.

Related Commands

addln, **cnfln, delln, dspln, dsplns, xcnfln, xdsplns**

Attributes

Log: No	State: Any	Privilege: Any User

Example: MPSM-8T1-CES, MPSM-8E1-CES

Display line 1 on the current MPSM card.

```
M8850_SF.1.28.MPSM8T1.CES.a > xdspln -ds1 1

  LineNum:                     1
  LineConnectorType:           RJ-48
  LineType:                    dsx1ESF
  LineEnable:                  Enabled
  LineCoding:                  dsx1B8ZS
  LineLength:                  0-131 ft
  LineXmtClockSource:          LocalTiming
  LineLoopbackCommand:         NoLoop
  LineSendCode:                NoCode
  LineUsedTimeslotsBitMap:     0xffffff
  LineLoopbackCodeDetection:   codeDetectDisabled
  LineBERTEnable:              Disable
```

```
  LineNumOfValidEntries: 8

M8850_SF.1.28.MPSM8T1.CES.a >
```

Example: CESM-8T1/B, CESM-8T1, CESM-8E1

Display rs232 port 1 on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdspln -rs232 1

  Port            Type          Enable   Baudrate
  ----  ----------------------  --------  --------
  26.1  Maintenance RS232 Port  Disable    19200

 SerialPortNumOfValidEntries: 1

M8850_SF.1.26.CESM.a >
```

Display line 1 on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdspln -ds1 1

  LineNum:                   1
  LineConnectorType:         RJ-48
  LineEnable:                Enabled
  LineType:                  dsx1ESF
  LineCoding:                dsx1B8ZS
  LineLength:                0-131 ft
  LineXmtClockSource:        LocalTiming
  LineLoopbackCommand:       NoLoop
  LineSendCode:              NoCode
  LineUsedTimeslotsBitMap:   0xffffff
  LineLoopbackCodeDetection: codeDetectDisabled

  LineNumOfValidEntries: 8

M8850_SF.1.26.CESM.a >
```

xdsplns

Display Lines—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Use the **xdsplns** command to view a summary of all lines on the current card.

Note RS-232 ports are not supported on the current set of CESM or MPSM cards.

Syntax

xdsplns -<*lineType*>

Syntax Description

lineType	Select line type of rs232 or ds1. **Note** RS-232 ports are not supported on the current set of CESM or MPSM cards.

Related Commands

addln, **cnfln, delln, dspln, dsplns, xcnfln, xdspln**

Attributes

Log: No	State: Any	Privilege: Any User

Examples

Display ds1 lines on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdsplns -ds1

  Line  Conn      Type     Status/Coding      Length     XmtClock Alarm Stats
        Type                                             Source         Alarm
  ----  ----- ------------ ------ -------- ------------- -------- ----- -----
  26.1  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  26.2  RJ-48 dsx1ESF         Ena/dsx1B8ZS 0-131 ft      LocalTim  No    No
  26.3  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  26.4  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  26.5  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  26.6  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  26.7  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim
  26.8  RJ-48 dsx1ESF         Dis/dsx1B8ZS 0-131 ft      LocalTim

  LineNumOfValidEntries: 8

M8850_SF.1.26.CESM.a >
```

Display rs232 lines on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdsplns -rs232

  Port            Type          Enable   Baudrate
  ----  ----------------------  --------  --------
  26.1  Maintenance RS232 Port  Disable    19200

 SerialPortNumOfValidEntries: 1

M8850_SF.1.26.CESM.a >
```

xdspport

Display Port—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **xdspport** command to view the port configuration for a specified port.

Syntax

xdspport -pt <PortNum>

Syntax Description

-pt	Enter the port number for the connection you want to display. To display a list of configured ports, enter the **dspports** command. The port number is found in the *Port* column in the format *Slot.Line.Port*. The port number range varies with the card type: • CESM-8T1/B, CESM-8T1, MPSM-8T1-CES range: 1–192 • CESM-8E1, MPSM-8E1-CES range: 1–248

Related Commands

addport, **delport, delports**, **dspport, xcnfport, xdspports**

Attributes

Log: No	State: Any	Privilege: Any User

Examples

Display port 1 on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdspport -pt 1

  SlotNum:                      26
  PortLineNum:                  1
  PortNum:                      1
  PortRowStatus:                Add
  PortNumOfSlots:               12
  PortDs0ConfigBitMap(1stDS0):  0xfff(1)
  PortSpeed:                    768kbps
  PortType:                     structured
  PortState:                    Active


M8850_SF.1.26.CESM.a >
```

xdspports

Display Ports—MPSM-8T1-CES, MPSM-8E1-CES, CESM-8T1/B, CESM-8T1, CESM-8E1

Enter the **xdspports** command to view information on all the ports associated with the current card.

Syntax

xdspports

Syntax Description

None

Related Commands

addport, **delport, delports**, **dspport, xcnfport, xdspport**

Attributes

Log: No	State: Any	Privilege: Any User

Examples

Display the ports on the current CESM card.

```
M8850_SF.1.26.CESM.a > xdspports

  Port     Ena/Speed   Type
  ------   --- ------ --------
  26.1.1   Add/ 768k structur
  26.1.2   Add/ 768k structur
  26.2.3   Add/ 768k structur
  26.2.4   Add/ 768k structur

  Number of ports:             4

  PortDs0UsedLine1:            0x00ffffff
  PortDs0UsedLine2:            0x00ffffff
  PortDs0UsedLine3:            0x00000000
  PortDs0UsedLine4:            0x00000000
  PortDs0UsedLine5:            0x00000000
  PortDs0UsedLine6:            0x00000000
  PortDs0UsedLine7:            0x00000000
  PortDs0UsedLine8:            0x00000000
  PortNumNextAvailable:        5

M8850_SF.1.26.CESM.a >
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