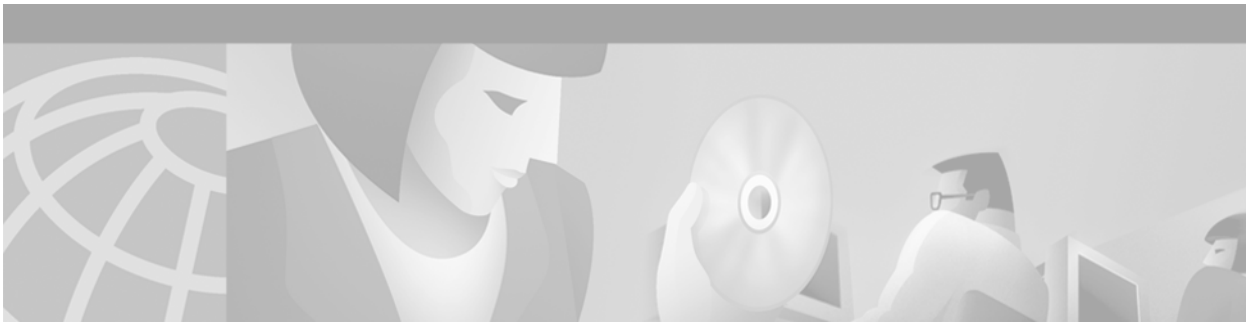

1.1.25 Version Software Release Notes Cisco WAN MGX 8850, 8230, and 8250 Software

About These Release Notes

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About the 1.1.25 Release

This is a maintenance release including all features supported up to release 1.1.24.

About the 1.1.24 Release

This is a maintenance release including all features supported up to release 1.1.23. The 1.1.24 release supports two new switches, the MGX 8230 and the MGX 8250.

About the 1.1.23 Release

Release 1.1.23 supports the same network scenarios as Release 1.1.12 and 1.1.22.

1. Feeder concentration to the BPX 8600 and all other endpoints (no BPX 8600 BNI trunk connections). IGX endpoints are supported in this release using Switch Software 9.2.

CISCO SYSTEMS

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78-11577-01

The MGX 8850 provides multiservice, high density ATM, Circuit Emulation and Frame Relay feeder concentration to the BPX 8600. The MGX 8850 connects to the BPX 8600 using the feeder trunk protocol over a PXM port. On the BPX 8600 side the feeder connection trunk to the MGX 8850 is supported on the BXM card only. Interoperability support is limited to (a) MGX 8850 to MGX 8850, (b) MGX 8850 to MGX 8220, c) MGX 8850 as a feeder to BPX 8600 (FR to ATM service interworking) but with IGX endpoints, and (d) MGX 8850 to IGX.

2. MGX 8850 in a Stand-alone Concentrator configuration and full PXM UNI support on all ports.

   Stand-alone capability allows the MGX 8850 to act as an edge concentrator to any vendor ATM network which implies service interoperability with other vendor's equipment. All connections for stand-alone are local switching connections.

Features Introduced in Release 1.1.25

None.

Features Introduced in Release 1.1.24

While no new features are incorporated into Software Release 1.1.24, this software release does provide support to two new wide area switches, the MGX 8230 and the MGX 8250, as well as continued support for the MGX 8850 switch.

MGX 8230

he MGX 8230 functions as a feeder to the IGX, BPX or MGX 8850 switches, or can be used for bringing in service. It has a 7-slot (double-height) chassis, and the slots are oriented in the following manner:

- Two slots are reserved for PXMs.
- Two single height (which equals 1 double height) slots are reserved for SRM.
- The remaining slots can be configured with 4 double-height or 8 single-height slots, supporting service modules.

Figure 1 shows the MGX 8230 with its door attached. Note that there are light pipes in the door that display the status of the processor models (PXMs). Figure 2 is a conceptual drawing of an MGX 8230 showing the dimensions and the slot numbering. The slot numbering is as it appears from the front of the MGX 8230; slots 8 and 9 refer to back card slots only.

Note that the following features are not supported in this release, but are planned for future releases:

- Service Resource Module (SRM)
- Route processor module (RPM)
- Voice Interface Service Module (VISM)
- PNNI (some CLI commands may show options for PNNI, but this feature is not supported.)

Figure 1 MGX 8230 with Door Attached

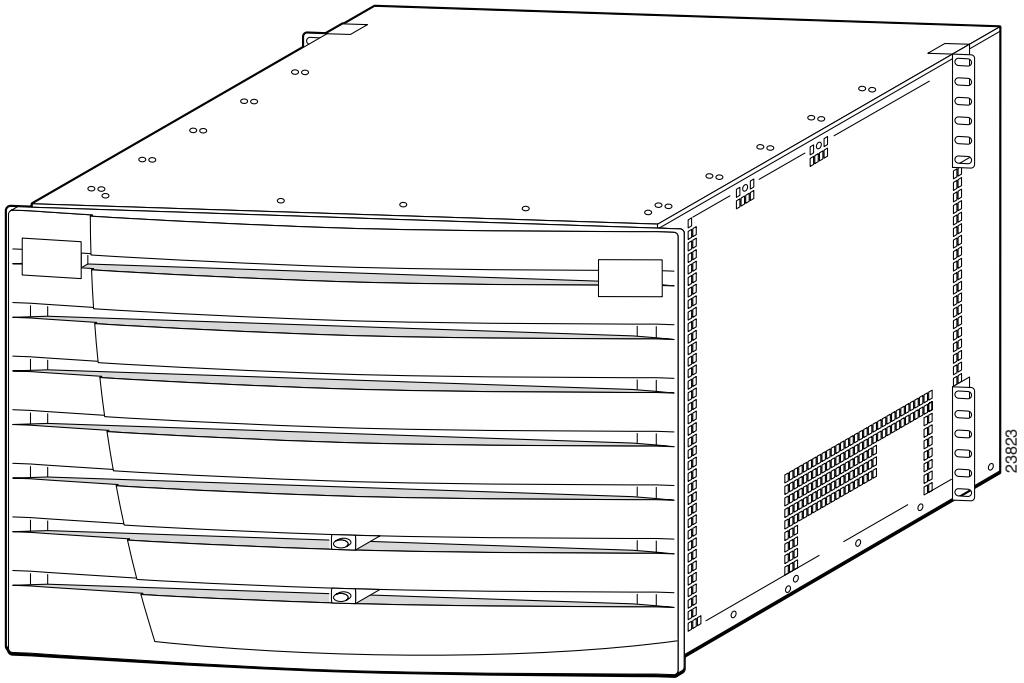
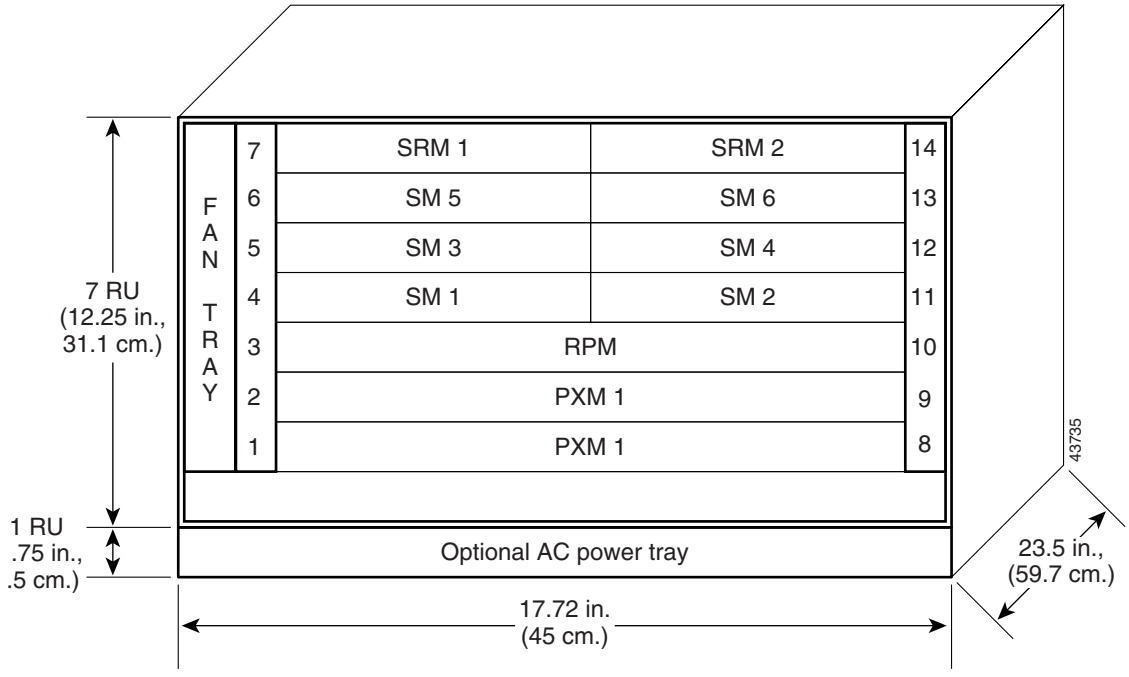


Figure 2 MGX 8230 Dimensions



Note Even though the card slots in an MGX 8230 are horizontal and would more appropriately be called single-width and double-width, this manual still refers to the card slots, and the processor and service modules, as single-height and double-height. This is for consistency because the PXM and service module cards are a subset of the MGX 8850 cards that are installed vertically in an MGX 8850 chassis.

Main Features

Release 1.0 of MGX 8230 includes:

- PXM1 with 4-port OC3-C/STM-1.
  - MMF, SMFLR, and SMFIR back cards are supported.
  - PXM1 ports are used as ATN UNI or feeder trunks.
  - Core redundancy for PXM1.
  - Environmental monitoring.
  - PXM–1 with one OC-12 port.
- PXM1-2-T3E3 provides interfaces for up to two T3 (each at 44.736 Mbps) or two E3 lines (each at 34.368 Mbps).
- ATM, Frame Relay, and Circuit Emulation service modules.
  - AUSM-8T1/E1/B with RJ48-T1/E1 and SMB E1 back card with UNI and IMA support.
  - FRSM-8T1/E1 with RJ48-T1/E1 and SMB E1 back cards.
  - FRSM-2T3E3 with BNC-2T3/E3 back cards.
  - FRSM-HS2 with 2 port HSSI back card.
  - FRSM-2CT3 with BNC-2T3 back card.
  - CESM-8T1/E1 with RJ48-T1/E1 and SMB E1 back cards.
  - CESM-T3E3
- 1:1 redundancy for T3/E3 cards.
- 1:N redundancy for T1/E1 service modules.
- Graceful upgrade.
- 1000 connections per card, 4000 connections per shelf (T1 service modules).

The MGX 8230 backplane supports a minimum of 1.2 Gbps of non-blocking switching and has a high-end limit of 21 Gbps with the PXM1. Individual line rates can range from DS0 through OC-3.

The MGX 8230 can also support a wide range of services over narrowband and mid-band user interfaces. It maps all the service traffic to and from ATM circuits based on standardized interworking methods.

The MGX 8230 supports up to 64 channelized or non-channelized T1 and E1 interfaces on a single IP + TM multiservice gateway. These interfaces support:

- Frame Relay UNI and NNI
- ATM UNI, NNI, and FUNI
- Frame Relay-to-ATM network interworking
- Frame Relay-to-ATM service interworking

- Circuit emulation services

Frame-based services on T3 and E3 high-speed lines are also supported.

The MGX 8230 also supports Inverse Multiplexing for ATM (IMA) to provide ATM connectivity below T3 or E3 rates via the AUSM-8T1/E1 (AUSM/B).

The modular, software-based system architecture enables it to support new features through downloadable software upgrades or new hardware modules.

The Service Resource Module-3T3 (MGX-SRM-3T3/B), when supported in a future release, will be able to support up to 64 T1 interfaces over its three T2 lines and provide 1:N redundancy for the T1 and E1 cards. ***This feature is described in the MGX 8230 switch documentation, but is currently not supported by the hardware.***

Standards-Based Conversion to ATM

The MGX 8230 converts all user-information into 53-byte ATM cells by using the appropriate ATM Adaptation Layer (AAL) for transport over the ATM backbone network. The individual service modules segment and reassemble (SAR) cells to eliminate system bottlenecks. The following list shows the applicable AAL for each service:

- Circuit emulation services uses AAL1.
- Frame Relay-to-ATM network interworking uses AAL5 and Frame Relay Service Specific Convergence Sub-layer (FR-SSCS).
- Frame Relay-to-ATM service interworking uses both transparent and translation modes to map Frame Relay to native ATM AAL5.
- Frame Forwarding uses AAL5.

Refer to the Cisco MGX 8230 Installation and Configuration Guide for further installation and physical descriptions for the MGX 8230 switch.

MGX 8230 Cards

MGX 8230 Processor Switch Module (PXM1)

The MGX 8230 Processor Switch Module (PXM1) performs shelf control and shared-memory switching functions. It also serves as a data processing and ATM interface card. The PXM1 processor module for the MGX 8230 is identical to the PXM1 for the MGX 8250.

Primarily, the MGX 8230 PXM1 controls the switch and provides 1.2 Gbps of non-blocking, shared memory ATM switching and ATM trunking up to OC-12 speed. In addition, the PXM features:

- A 4.0-Gigabyte hard disk drive that holds software, firmware for all the cards, and a substantial amount of other information.
- Environmental monitoring (cabinet temperature, fan speed, and power supply voltages).
- Hot swappable, 1:1 redundancy.

The PXM1 and its two types of back cards make up the required control card set. The following are model numbers of cards supported by the MGX 8230 for this release:

The following are model numbers of cards supported by the MGX 8230 for this release:

- PXM1-4-155, PXM1-1-622, and PXM1-2-T3E3
- PXM-UI (user interface back card)
- MGX-MMF-4-155 (uplink back card)
- MGX-SMFIR-4-155 (uplink back card)

- MGX-SMFLR-4-155 (uplink back card)
- MGX-BNC-2-T3 (uplink back card)
- MGX-BNC-2-E3 (uplink back card)
- MGX-SMFIR-2R-1-622 (uplink back card)
- MGX-SMFLR-1-622 (uplink back card)

PXM1 User Interface Back Card

The PXM1 User Interface card (PXM-UI) provides the MGX 8230 with the several user- interface ports. It mates with an PXM1 through the backplane and is installed in a back card slot (slot 8 or 9). As seen from the back of the MGX 8230, the PXM-UI will plug into the slot that is on the right side of its corresponding PXM1. The user-interface ports provide the following functions:

- User and management interface to an ASCII terminal or workstation
- Network synchronization for the shelf
- Central office-compatible major/minor alarm interface

The PXM UI has the following physical connectors and interfaces:

- RJ-45 T1 clock input—BITS clock source
- RJ-45 Maintenance port—RJ-45 connector, EIA/TIA 232, DTE mode, asynchronous interface, 19200 bits per second, 1 start bit, 1 stop bit, no parity bits.
- RJ-45 Control port— EIA/TIA 232, DTE mode, asynchronous interface, 9600 bits per second, 1 start, 1 stop, no parity.
- RJ-45 LAN port—10BaseT, 802.3 Ethernet
- SMB connector E1 clock input—BITS clock source
- DB-15 female connector for alarm outputs

MGX 8230 OC-3 Uplink Back Card

The MGX 8230 Uplink back card, which mates with a corresponding PXM1 through the backplane, provides the feeder trunk to the MGX switch. This uplink back card can provide either a multi-mode or single-mode fiber OC-3 interface:

- MGX-MMF-4-155 (multi-mode fiber uplink back card)
- MGX-SMFIR-4-155 (single-mode fiber intermediate reach uplink back card)
- MGX-LMFLR-4-155 (single-mode fiber long reach uplink back card)

FRSM Cards

The primary function of the FRSM is to convert between the Frame Relay-formatted data and ATM/AAL5 cell-formatted data. It converts the header format and translates the address for Frame Relay port/DLCIs, ATM-Frame UNI (FUNI) port/frame address, or frame forwarding port, and the ATM virtual connection identifiers (VPI/VCIs).

The MGX 8230 supports the following FRSM models:

- Frame Service Module for T1 (FRSM-8T1)
  The FRSM-8T1 card provides interfaces for up to eight T1 lines, each of which can support one 56 Kbps or one Nx64 Kbps FR-UNI, FR-NNI port, ATM-FUNI, or a Frame Forwarding port. Note that this unchannelized card cannot be configured to support sub-T rates.
- Frame Service Module for T1, channelized (FRSM-8T1-C)
  The FRSM-8T1-C card provides interfaces for up to eight T1 lines, each of which can support up to twenty-four 56 Kbps or Nx64 Kbps FR-UNI, FR-NNI, ATM-FUNI, or Frame Forwarding ports.

- Frame Service Module for E1 (FRSM-8E1)
  The FRSM-8E1 card provides interfaces for up to eight E1 lines, each of which can support one 56 Kbps or one Nx64 Kbps FR-UNI, FR-NNI, ATM-FUNI, or Frame Forwarding port.
- Frame Service Module for E1, channelized (FRSM-8E1-C)
  The FRSM-8E1-C card provides interfaces for up to eight E1 channelized Frame Relay lines, each of which can support multiple (up to thirty-one) 56 Kbps or Nx64 Kbps FR-UNI, FR-NNI, ATM-FUNI, or Frame Forwarding ports.
- Frame Service Module for T3 and E3 (FRSM-2E3T3)
  The FRSM-2E3/T3 card provides interfaces for up to two T3 or E3 Frame Relay lines, each of which can support either two T3 lines (each at 44.736 Mbps) or two E3 lines (each at 34.368 Mbps) FR-UNI, FR-NNI, ATM-FUNI, or Frame Forwarding ports.
- Frame Service Module for channelized T3 (FRSM-2CT3)
  The FRSM-2CT3 card supports interfaces for up to two T3 channelized Fame Relay lines, each of which supports 56 Kbps, 64 Kbps, Nx56 Kbps, Nx64 Kbps, T1 ports for a total of 256 ports that can be freely distributed across the two T3 lines.
- FRSM-HS2
  The FRSM-HS2 provides unchannelized Frame Relay service for up to 1000 user-connections over two HSSI lines on the SCSI2-2HSSI back card. The maximum rate for the card is 104 Mbps. Each port can operate in either DTE or DCE mode with incremental rates of N x T1 or N x E1 up to 52 Mbps.

OC-12 Uplink Back Card

For Automatic Protection Switching (APS) requires the “B” model—an SMFLR-1-622/B.

SMFIR-1-622 Back Card

For Automatic Protection Switching (APS) requires the “B” model—an SMFIR-1-622/B.

BNC-2T3 Back Card

BNC-2E3 Back Card

Two versions of the BNC-2E3 card are available. The BNC-2E3A applies to Australia only, and the BNC-2E3 applies to all other sites that require E3 lines on the PXM uplink card.

ATM Universal Service Module

AUSM/B Front Card

AUSM/B Back Cards

The MGX-AUSM/B-8T1 and MGX-AUSM/B-8E1 use the generic 8-port T1 or E1 line modules that operate with the 8-port service modules. The standard T1 version of the back card has eight RJ-48 connectors. The standard versions of the E1 back card have either eight RJ-48 connectors or eight pairs of SMB connectors. The following back cards are compatible with the AUSM/B:

- RJ48-8T1 back card for T1
- RJ48-8E1 back card for E1
- SMB-8E1 back card for E1

Circuit Emulation Service Module 8T1E1

CESM Models

The MGX 8230 supports the following CESM models:

- Circuit Emulation Service Module for T1 (CESM-8T1)
  The CESM-8T1 card provides interfaces for up to eight T1 lines, each of which is a 1.544 Mbps structured or unstructured synchronous data stream.

- Circuit Emulation Service Module for E1 (CESM-8E1)
  The CESM-8E1 card provides interfaces for up to eight E1 lines, each of which is a 2.048 Mbps structured or unstructured synchronous data stream.
- Circuit Emulation Service Module for T3/E3 (CESM-T3E3)

The CESM-8T1E1 card set consists of the CESM-8T1E1 front card and one of the following back cards:

- RJ48-8T1-LM
- RJ48-8E1-LM
- SMB-8E1-LM

Redundancy Architecture

Since the MGX 8230 chassis is a smaller form factor MGX 8850, most of the redundancy features available in MGX 8850 are available in MGX 8230 chassis. The following is a list of available redundancy features on the MGX 8230 chassis.

- Dual PXM
- Y-cable redundancy on PXM uplink ports
- 1:N redundancy for T1/E1 service modules
- Eight cell buses per PXM
- N+1 cooling fan redundancy
- N+1 AC or DC power redundancy (optional)
- 1:1 Y-cable redundancy for T3/E3 interfaces

MGX 8230 Management

To give you access for control purposes, the MGX 8230 switch supports high- and low-level user interfaces. You can use the Cisco WAN Manager application (formerly StrataView Plus) for connection management, the CiscoView application for hardware configuration, and a command line interface for low-level control of hardware functionality and connection control. An assortment of ports and protocols supports these user-interfaces. For communicating with the MGX 8230 switch, the control port (SLIP protocol only), the LAN (Ethernet) port, and the in-band ATM connection (feeder application only) all support access by the command line interface (CLI) via Telnet, TFTP, and SNMP protocols.

The downloadable firmware on each card determines the functionality, and you can upgrade functionality by downloading new firmware through a TFTP application on a workstation or a PC.

The current status and configuration parameters of the MGX 8230 modules reside in a Management Information Base (MIB). The firmware on each card updates the MIB as changes in status and configuration occur.

MGX 8250

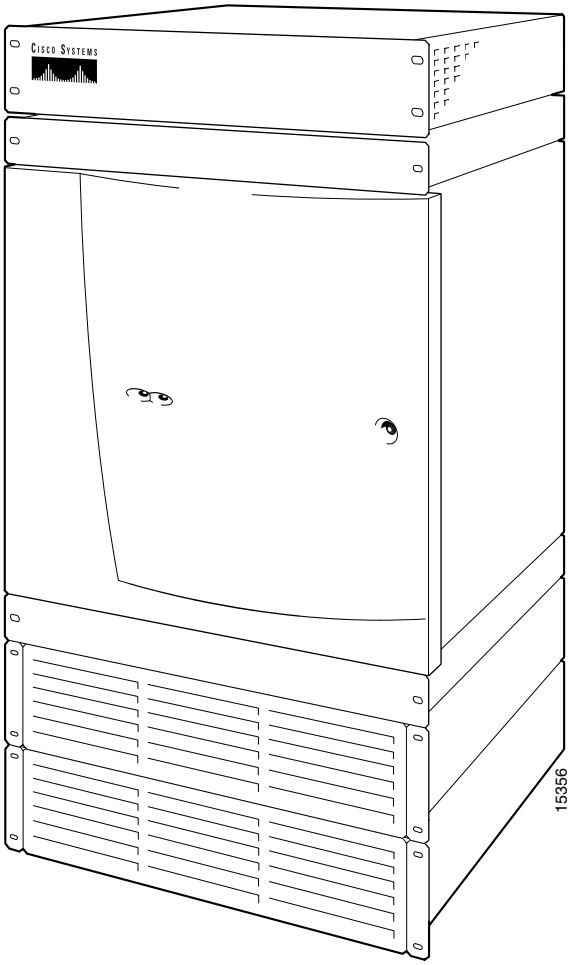
The Cisco MGX 8250 wide-area edge switch supports:

- Integrated IP+ATM services
- Frame Relay
- IP-based virtual private network
- Video
- Circuit emulation services for private line replacement

It does not support PNNI, despite the fact that some CLI commands may show options for PNNI.

This chapter contains a brief outline of the features of the Cisco MGX 8250 switch. An illustration of the AC-powered version of the switch appears in Figure 3.

Figure 3 MGX 8250 Switch



The Applications of the MGX 8250 Switch

The MGX 8250 switch operates in two operational *applications*:

- As a *feeder*, the MGX 8250 switch concentrates narrow-band and medium-band ATM, Frame Relay, and into a single, wide-band ATM feeder trunk to an BPX 8600-series switch.
- As a *stand-alone node*, the MGX 8250 switch concentrates narrow-band and medium-band ATM, Frame Relay, and voice into a single ATM line to at third-party switch. The MGX 8250 interface in this application is a UNI or an NNI.

For a description of how to configure the switches for a particular application, see the *MGX 8250 Switch Installation and Configuration Guide*.

The switch is also capable of supporting Cisco Multiprotocol Label Switching (MPLS).

Universal Edge Architecture

The MGX 8250 switch can support a wide range of services over narrowband and mid-band user interfaces. It maps all the service traffic to and from ATM by using standardized interworking methods.

The supported interfaces for user-traffic are:

- Frame Relay UNI on T3, E3, HSSI, T1, and E1 lines
- ATM UNI and FUNI and optional inverse multiplexing for ATM (IMA)
- Frame Relay to ATM network interworking and service interworking
- Circuit emulation services (T1/E1 and T3/E3)

The optional Service Resource Module-3T3 (MGX-SRM-3T3/B) can support up to 80 T1 interfaces over its three T3 lines and provide 1:N redundancy for the T1 and E1 cards.

The modular, software-based system architecture enables the switch to support new features through downloadable software upgrades or new hardware modules.

The MGX 8250 backplane supports a minimum of 1.2 Gbps of non-blocking switching. Individual line rates range from DS0 through OC-12.

Standards-Based Conversion to ATM

The MGX 8250 switch converts all user information into 53-byte ATM cells by using the appropriate ATM Adaptation Layer (AAL) for transport over the ATM backbone network. The individual service modules segment and reassemble (SAR) cells to eliminate system bottlenecks. The following list shows the applicable AAL for each service:

- Circuit emulation services uses AAL1.
- Frame Relay-to-ATM network interworking uses AAL5 and Frame Relay Service Specific Convergence Sub-layer (FR-SSCS).
- Frame Relay-to-ATM service interworking uses both transparent and translation modes to map Frame Relay to native ATM AAL5.
- Frame Forwarding uses AAL5.

MGX 8250 Cards

The MGX 8250 switch supports *core cards* and *service modules*. The Processor Switching Module (PXM) and optional Service Resource Module (SRM) are *core cards.* In addition to the PXM being a core card, it is also part of a a *card set*. A card set consists of a front card, a back card, and a daughter card. Service modules are not combined in this manner and are never part of a card set. Instead, *service*

modules provide the interface to the transport technologies of the CPE—Frame Relay, ATM, and so on. The MGX 8250 enclosure contains up to 24 service modules (I/O cards) and 4 optional Service Redundancy Modules (SRMs) provide redundancy. A card set consists of a front card with its attached daughter card and a back card (or line module). The front card contains the processing intelligence and, on the daughter card, the firmware that distinguishes the interface (OC-3, T3, E3, and so on). The back card is a simple card that provides the electrical interface for one or more lines of a particular type. The MGX 8250 front and back cards are the:

- Processor Switching Module (PXM1)
  This front card controls the switch and supports external interfaces for user-access and trunking or UNI ports. The back cards consist of a user interface card (PXM-UI) and a broadband network module (see subsequent list items).
- Processor Switch Module User Interface (PXM1-UI)
  The PXM1-UI is the *user interface* card that has various types of ports to let you access and control the switch.
- Broadband Network Module (MGX-SMFIR-1-622 and MGX-SMFLR-1-622)
  The SMFIR-1-622 is a *broadband network* module for the PXM and provides a SONET OC12/STM4 ATM interface at 622 Mbps.
- Broadband Network Module (MGX-MMF-4-155)
  The MMF-4-155 is a *broadband network* module for the PXM and provides 4 SONET OC3/STM1 ATM interfaces at 155 Mbps.
- Broadband Network Module (MGX-BNC-2T3)
  The MGX-BNC-2T3 is a *broadband network* module for the PXM and provides 2 T3 ATM interfaces.
- Broadband Network Module (MGX-BNC-2E3)
  The MGX-BNC-2E3 is a *broadband network* module for the PXM and provides 2 E3 ATM interfaces. A version for Australia, New Zealand, and elsewhere is available (MGX-BNC-2E3A).
- Frame Service Module for T3 and E3 (MGX-FRSM-2E3T3)
  The MGX-FRSM-2E3/T3 provides interfaces for up to two T3 or E3 frame relay lines, each of which can support either 2 T3 lines (each at 44.736 Mbps) or 2 E3 lines (each at 34.368Mbps) FR-UNI, ATM-FUNI, or Frame Forwarding port.
- Frame Service Module for channelized T3 (MGX-FRSM-2CT3)
  The MGX-FRSM-2CT3 supports interfaces for up to two T3 channelized frame relay lines, each of which supports 56 Kbps, 64 Kbps, Nx56 Kbps, Nx64 Kbps, T1 ports for a total of 256 ports that can be freely distributed across the two T3 lines.
- Frame Service Module for unchannelized HSSI (MGX-HS2/B)
  The MGX-HS2/B supports interfaces for 2 unchannelized HSSI lines, each of which supports approximately 51 Mbps. With both lines operating, maximum throughput is 70 Mbps.
- Frame Service Module for T1 (AX-FRSM-8T1)
  The AX-FRSM-8T1 provides interfaces for up to eight T1 lines, each of which can support one 56 Kbps or one Nx64 Kbps FR-UNI, ATM-FUNI, or a Frame Forwarding port. Note that this unchannelized card cannot be configured to support sub-T rates.
- Frame Service Module for T1, channelized (AX-FRSM-8T1c)
  The AX-FRSM-8T1c provides interfaces for up to eight T1 lines, each of which can support up to 24 56 Kbps or *N* x 64 Kbps FR-UNI, ATM-FUNI, or Frame Forwarding port.
- Frame Service Module for E1 (AX-FRSM-8E1)
  The AX-FRSM-8E1 provides interfaces for up to eight E1 lines, each of which can support one 56 Kbps or one *N* x 64 Kbps FR-UNI, ATM-FUNI, or frame forwarding port.

- Frame Service Module for E1, channelized (AX-FRSM-8E1c)
  The AX-FRSM-8E1c provides interfaces for up to 8 E1 channelized frame relay lines Each line can support *N* x 64-Kbps or (up to 31) 56-Kbps FR-UNI, ATM-FUNI, or frame forwarding ports.
- ATM UNI Service Module for T1 (MGX-AUSM/B-8T1)
  The MGX-AUSM/B-8T1 provides interfaces for up to eight T1 lines. You can group *N* x T1 lines to form a single, logical interface (IMA).
- ATM UNI Service Module for E1 (MGX-AUSM/B-8E1)
  The MGX-AUSM/B-8E1 provides interfaces for up to eight E1 lines. You can group *N* x E1 lines to form a single, logical interface (IMA).
- Circuit Emulation Service Module for T1 (AX-CESM-8T1)
  The AX-CESM-8T1 provides interfaces for up to eight T1 lines, each of which is a 1.544 Mbps structured or unstructured synchronous data stream.
- Circuit Emulation Service Module for E1 (AX-CESM-8E1)
  The AX-CESM-8E1 provides interfaces for up to eight E1 lines, each of which is a 2.048-Mbps structured or unstructured synchronous data stream.
- Route Processor Module (RPM)
  The RPM is a Cisco 7200-series router redesigned as a double-height card. Each RPM uses two single-height back cards. The back-card types are: single-port Fast Ethernet, four-port Ethernet, and single-port (FDDI).
- Service Resource Module (MGX-SRM-3T3/B)
  The optional MGX-SRM-3T3/B provides bit error rate testing (BERT), 1:N redundancy for T1 and E1 service modules, and a de-multiplexing function for T1 service called *bulk mode*.
- Smart Serial Interface FRSM-HS1/B 12IN1
  A multi-personality back card that supports either X.25 or V.35 interface.

MGX 8250 Management

To give you access for control purposes, the MGX 8250 switch supports high- and low-level user interfaces. You can use the Cisco WAN Manager application (formerly StrataView Plus) for connection management, the CiscoView application for hardware configuration, and a command line interface for low-level control of hardware functionality and connection control. An assortment of ports and protocols supports these user-interfaces. For communicating with the MGX 8250 switch, the control port (SLIP protocol only), the LAN (Ethernet) port, and the in-band ATM connection (feeder application only) all support access by the command line interface (CLI) via Telnet, TFTP, and SNMP protocols.

The downloadable firmware on each card determines the functionality, and you can upgrade functionality by downloading new firmware through a TFTP application on a workstation or a PC.

The current status and configuration parameters of the MGX 8250 modules reside in a Management Information Base (MIB). The firmware on each card updates the MIB as changes in status and configuration occur.

Continued Support for the MGX 8850

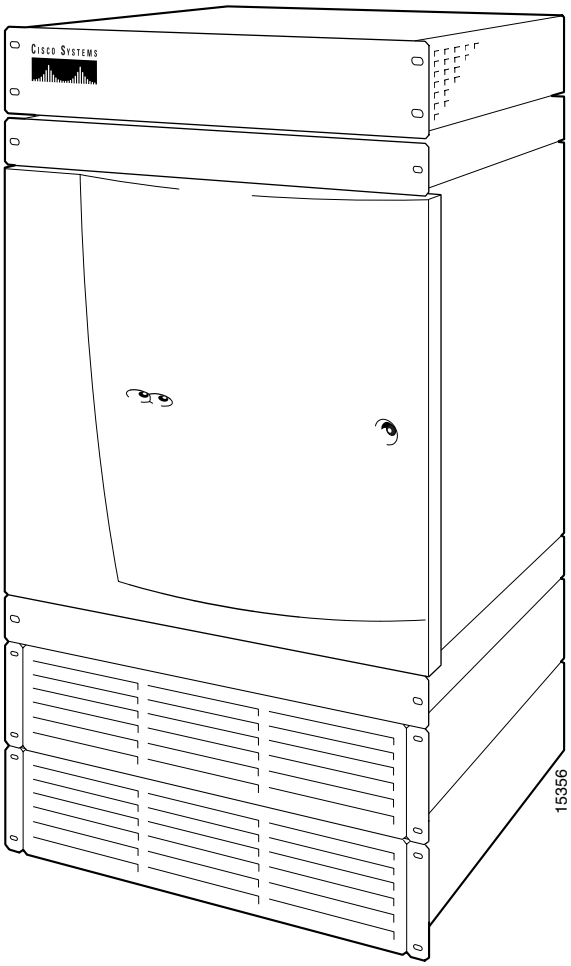
The Cisco MGX 8850 wide-area edge switch supports:

- Integrated IP+ATM services
- Frame Relay
- IP-based virtual private network
- Video
- Circuit emulation services for private line replacement

It does not support PNNI, despite the fact that some CLI commands may show options for PNNI.

An illustration of the AC-powered version of the switch appears in Figure 4.

Figure 4 MGX 8850 Switch



The Applications of the MGX 8850 Switch

The MGX 8850 switch operates in two operational *applications*:

- As a *feeder*, the MGX 8850 switch concentrates narrow-band and medium-band ATM, Frame Relay, and into a single, wide-band ATM feeder trunk to an BPX 8600-series switch.
- As a *stand-alone node*, the MGX 8850 switch concentrates narrow-band and medium-band ATM, Frame Relay, and voice into a single ATM line to at third-party switch. The MGX 8850 interface in this application is a UNI or an NNI.

For a description of how to configure the switches for a particular application, see the *MGX 8250 Switch Installation and Configuration Guide*.

The switch is also capable of supporting Cisco Multi-Protocol Label Switching (MPLS).

Universal Edge Architecture

The MGX 8850 switch can support a wide range of services over narrowband and mid-band user interfaces. It maps all the service traffic to and from ATM by using standardized interworking methods. When the MGX 8850 switch operates as a feeder, it uses a single port to communicate the aggregated traffic over an ATM interface with an MGX 8850 or BPX 8600-series switch.

The supported interfaces for user-traffic are:

- Frame Relay UNI on T3, E3, HSSI, T1, and E1 lines
- ATM UNI and FUNI and optional inverse multiplexing for ATM (IMA)
- Frame Relay to ATM network interworking and service interworking
- Circuit emulation services

The optional Service Resource Module-3T3 (MGX-SRM-3T3/B) can support up to 80 T1 interfaces over its 3 T3 lines and provide 1:N redundancy for the T1 and E1 cards.

The modular, software-based system architecture enables the switch to support new features through downloadable software upgrades or new hardware modules.

The MGX 8850 backplane supports a minimum of 1.2 Gbps of non-blocking switching up to 45 Gbps. Individual line rates range from DS0 through OC-12.

Standards-Based Conversion to ATM

The MGX 8850 switch converts all user-information into 53-byte ATM cells by using the appropriate ATM Adaptation Layer (AAL) for transport over the ATM backbone network. The individual service modules segment and reassemble (SAR) cells to eliminate system bottlenecks. The following list shows the applicable AAL for each service:

- Circuit emulation services uses AAL1.
- Frame Relay-to-ATM network interworking uses AAL5 and Frame Relay Service Specific Convergence Sub-layer (FR-SSCS).
- Frame Relay-to-ATM service interworking uses both transparent and translation modes to map Frame Relay to native ATM AAL5.
- Frame Forwarding uses AAL5.

MGX 8850 Cards

The MGX 8850 switch supports two types of *card sets*: the *core cards* (or core modules) and *service modules*. The Processor Switching Module (PXM) and optional Service Resource Module (SRM) are *core cards*. The *service modules* provide the interface to the transport technologies of the CPE—Frame Relay, ATM, and so on. The MGX 8850 enclosure contains up to 24 service modules (I/O cards) and 4 optional Service Redundancy Modules (SRMs) provide redundancy. A card set consists of a front card with its attached daughter card and a back card (or line module). The front card contains the processing intelligence and, on the daughter card, the firmware that distinguishes the interface (OC-3, T3, E3, and so on). The back card is a simple card that provides the electrical interface for one or more lines of a particular type. The MGX 8850 front and back cards are the:

- Processor Switching Module (PXM1)
  This front card controls the switch and supports external interfaces for user-access and trunking or UNI ports. The back cards consist of a user interface card (PXM-UI) and a broadband network module (see subsequent list items).
- Processor Switch Module User Interface (PXM1-UI)
  The PXM1-UI is the *user interface* card that has various types of ports to let you access and control the switch.
- Broadband Network Module (MGX-SMFIR-1-622 and MGX-SMFLR-1-622)
  The SMFIR-1-622 is a *broadband network* module for the PXM and provides a SONET OC12/STM4 ATM interface at 622 Mbps.
- Broadband Network Module (MGX-MMF-4-155)
  The MMF-4-155 is a *broadband network* module for the PXM and provides 4 SONET OC3/STM1 ATM interfaces at 155 Mbps.
- Broadband Network Module (MGX-BNC-2T3)
  The MGX-BNC-2T3 is a *broadband network* module for the PXM and provides 2 T3 ATM interfaces.
- Broadband Network Module (MGX-BNC-2E3)
  The MGX-BNC-2E3 is a *broadband network* module for the PXM and provides 2 E3 ATM interfaces. A version for Australia, New Zealand, and elsewhere is available (MGX-BNC-2E3A).
- Frame Service Module for T3 and E3 (MGX-FRSM-2E3T3)
  The MGX-FRSM-2E3/T3 provides interfaces for up to two T3 or E3 frame relay lines, each of which can support either 2 T3 lines (each at 44.736 Mbps) or 2 E3 lines (each at 34.368Mbps) FR-UNI, ATM-FUNI, or Frame Forwarding port.
- Frame Service Module for channelized T3 (MGX-FRSM-2CT3)
  The MGX-FRSM-2CT3 supports interfaces for up to two T3 channelized frame relay lines, each of which supports 56 Kbps, 64 Kbps, Nx56 Kbps, Nx64 Kbps, T1 ports for a total of 256 ports that can be freely distributed across the two T3 lines.
- Frame Service Module for unchannelized HSSI (MGX-HS2/B)
  The MGX-HS2/B supports interfaces for 2 unchannelized HSSI lines, each of which supports approximately 51 Mbps. With both lines operating, maximum throughput is 70 Mbps.
- Frame Service Module for T1 (AX-FRSM-8T1)
  The AX-FRSM-8T1 provides interfaces for up to eight T1 lines, each of which can support one 56 Kbps or one Nx64 Kbps FR-UNI, ATM-FUNI, or a Frame Forwarding port.
- Frame Service Module for T1, channelized (AX-FRSM-8T1c)
  The AX-FRSM-8T1c provides interfaces for up to eight T1 lines, each of which can support up to 24 56 Kbps or *N* x 64 Kbps FR-UNI, ATM-FUNI, or Frame Forwarding port.

- Frame Service Module for E1 (AX-FRSM-8E1)
  The AX-FRSM-8E1 provides interfaces for up to eight E1 lines, each of which can support one 56 Kbps or one *N* x 64 Kbps FR-UNI, ATM-FUNI, or frame forwarding port.
- Frame Service Module for E1, channelized (AX-FRSM-8E1c)
  The AX-FRSM-8E1c provides interfaces for up to 8 E1 channelized frame relay lines Each line can support *N* x 64-Kbps or (up to 31) 56-Kbps FR-UNI, ATM-FUNI, or frame forwarding ports.
- ATM UNI Service Module for T1 (MGX-AUSM/B-8T1)
  The MGX-AUSM/B-8T1 provides interfaces for up to eight T1 lines. You can group *N* x T1 lines to form a single, logical interface (IMA).
- ATM UNI Service Module for E1 (MGX-AUSM/B-8E1)
  The MGX-AUSM/B-8E1 provides interfaces for up to eight E1 lines. You can group *N* x E1 lines to form a single, logical interface (IMA).
- Circuit Emulation Service Module for T1 (AX-CESM-8T1)
  The AX-CESM-8T1 provides interfaces for up to eight T1 lines, each of which is a 1.544 Mbps structured or unstructured synchronous data stream.
- Circuit Emulation Service Module for E1 (AX-CESM-8E1)
  The AX-CESM-8E1 provides interfaces for up to eight E1 lines, each of which is a 2.048-Mbps structured or unstructured synchronous data stream.
- Route Processor Module (RPM)
  The RPM is a Cisco 7200-series router redesigned as a double-height card. Each RPM uses two single-height back cards. The back-card types are: single-port Fast Ethernet, four-port Ethernet, and single-port (FDDI).
- Service Resource Module (MGX-SRM-3T3/B)
  The optional MGX-SRM-3T3/B provides bit error rate testing (BERT), 1:N redundancy for T1 and E1 service modules, and a de-multiplexing function for T1 service called *bulk mode*.
- Smart Serial Interface FRSM-HS1/B 12IN1
  A multi-personality back card that supports either X.25 or V.35 interface.

MGX 8850 Management

To give you access for control purposes, the MGX 8850 switch supports high and low-level user interfaces. You can use the Cisco WAN Manager application (formerly StrataView Plus) for connection management, the CiscoView application for hardware configuration, and a command line interface for low-level control of hardware functionality and connection control. An assortment of ports and protocols supports these user-interfaces. For communicating with the MGX 8850 switch, the control port (SLIP protocol only), the LAN (Ethernet) port, and the in-band ATM connection (feeder application only) all support access by the command line interface (CLI) via Telnet, TFTP, and SNMP protocols.

The downloadable firmware on each card determines the functionality, and you can upgrade functionality by downloading new firmware through a TFTP application on a workstation or a PC.

The current status and configuration parameters of the MGX 8850 modules reside in a Management Information Base (MIB). The firmware on each card updates the MIB as changes in status and configuration occur.

Features Introduced in Release 1.1.23

MGX 8850 Release 1.1.23 is a maintenance release of Release 1.1.22. In addition, it introduces the following new features:

- Dynamic subrate FRSM-T3E3.
- **Clrsmcnf/savesmcnf/restoresmcnf** feature support for VISM.
- Switchcc and softswitch performance enhancement (See Problems Fixed).
- New Database integrity check commands.
- Model # recognition for MGX8230 and MGX8250.

Features Introduced in Release 1.1.22

MGX 8850 Release 1.1.22 is a maintenance release of Release 1.1.21. In addition, it introduces the following new features:

- core dump facility.
- FRSM2T3 subrate to Kentrox box is now supported. Previously we only supported Digital Link.
- **Clrsmcnf/savesmcnf/restoresmcnf** feature support.

Features Introduced in Release 1.1.21

MGX 8850 Release 1.1.21 includes all the features in Release 1.1.12 and earlier. In addition, it introduces the following new features:

- Support for the IGX-SES.
- FRSM-HS1B 12inOne (X.21/V.35 programmable feature)

  Support for the FRSM-HS1B dual-personality back-card that can be configured for either V.35 interfaces or X.21 interfaces.
- Support of (real time) rt-VBR as a new class of ATM connection service type for the following service modules:
  - FRSM-2CT3
  - FRSM-2T3/E3
  - FRSM-HS2
- Support for the “fixed ratio queuing” algorithm for egress queue management on the following service modules:
  - FRSM-2CT3
  - FRSM-2T3/E3
  - FRSM-HS2
- Support for hot-standby on the following service modules:
  - FRSM-2CT3
  - FRSM-2T3/E3
  - FRSM-HS2

This feature reduces switchover time for the above service modules.

- Support for Zero CIR on the following service modules:
  - FRSM-2CT3
  - FRSM-2T3/E3
  - FRSM-HS2
  - FRSM-8T1/E1
- FRSM-2T3/E3 subrate support

  This feature supports running the T3 or E3 lines on the FRSM at sub rates. The interfaced DSU/CSU supported are the Digital Link DL3100 for T3 and the Digital Link DL3100E for E3.

Features Introduced in Release 1.1.12

MGX 8850 Release 1.1.12 was a maintenance release of Release 1.1.11. In addition, it introduced the following new features:

- Introduction of MGX-CESM-T3E3 - Circuit Emulation Module Card, including the following features:
  - Provides 1 standard T3 or E3 interfaces
  - 1:1 redundancy using Y-cable

Note The MGX-CESM-T3E3 is an FCS product.

- PLCP payload scrambling
- Support for IP Address discovery of the MC3810 using ILMI

Features Introduced in Release 1.1.11

MGX 8850 Release 1.1.11 was a maintenance release of Release 1.1.10. In addition, it introduced the following new features:

- Introduction of MGX-VISM-8T1E1 - Voice Service Module Card, including the following features:
  - Provides 8 standard T1 or E1 interfaces with B8ZS, AMI & HDB3 line coding.
  - Support for voice over IP (VoIP) to RFC 1889.
  - Support for both PCM a-law and u-law.
  - Programmable 16, 32,64,128 ms near end echo cancellation.
  - Voice activity detection (VAD) and comfort noise generation using variable threshold energy (Cisco proprietary).
  - Support for signalling using Simple Gateway Control Protocol (SGCP) version 1.0.
  - ATM AAL5 connections for Management and voice IP packets.
  - Support for loop timing, payload and line loopbacks.
  - 1:N redundancy using SRM-3T3 capabilities (bulk mode support for T1 lines only).

Note The MGX-VISM-8T1E1 is an FCS product.

- RPM/B card and double clock OC6 support with IOS 12.0.5T1.

  The RPM has a custom ASIC on it called the ATMizer. This chip is being replaced by the ATMizer II+, AKA “G10” version of the chip. The RPM-B contains this new chip, along with a 16Mbyte Flash SIMM instead of 4Mbyte. The RPM-B can operate at 21Mhz and 42Mhz Cellbus clock rate with 1.1.11 and 12.0.5T1, while the RPM-A can only operate at 21 Mhz.
- Support for CellBus speed configuration. The CellBus can be configured for double clock speed for all VHS service modules.
- MPLS (tag edge router only) support for RPM.

Note MPLS support for RPM is currently an FCS feature.

- Support of MGX-FRSM-HS/1-B (V.35 support)
- Major Redundancy Enhancements (SRM failures cause switchover, removal of FRSM-2CT3 backcard causes switchover)
- APS fixes (removing back card from active PXM causes APS line to not fail, APS memory leak, APS switch on SDBER threshold exceed)
- **Saveallcnf** includes RPM configuration
- PXM core dump subsystem feature
- MGX 8220 Release 4.1.00 circuit emulation endpoints

Features Introduced in Release 1.1.10

MGX 8850 Release 1.1.10 provided the following features in addition to the ones provided in Release 1.1.01 and earlier:

- APS redundancy on PXM-OC3 and OC12 interfaces. Only 1+1 redundancy configuration is supported. No 1:1 APS redundancy.
- Full PXM UNI support in Stand-alone configuration using all ports with policing. The UNI channels on PXM will support CBR, rt-VBR, nrt-VBR, UBR and ABR classes of service.
- BERT support on FRSM-8T1/E1, CESM-8T1/E1 and AUSM-8T1/E1 and FRSM-2CT3 cards. The BERT support is at whole T1/E1 or port level (n*DS0).

Release 1.1.25 MGX 8850 Hardware

MGX 8850 is a 45 Gbps backplane with 1.2 Gbps switching fabric for Release 1.1.25. The same backplane is used with different switching fabric cards (1.2, 45 Gbps) to achieve scalability. MGX 8850 Release 1.1.25 hardware components and their revisions that are supported are as follows:

Front card model #	Rev #	Back card model #	Rev #
MGX 8850 Chassis	A		
MGX-DC power supply	A		
MGX-AC1 power supply	A		
MGX-AC2-2 power supply	A		
PS-1200-AC power supply	A		
MGX-SRM-3T3/B	A	MGX-BNC-3T3	A
PXM1	A	PXM-UI	A
PXM-1-2-T3E3	A	PXM-UI	A
		MGX-BNC-2E3	A
		MGX-BNC-2E3A	A
		MGX-BNC-2T3	A
PXM-1-4-155	A	PXM-UI	A
		MGX-MMF-4-155	A
		MGX-SMFIR-4-155	A
		MGX-SMFLR-4-155	A
PXM-1-1-622	A	PXM-UI	A
		MGX-SMFIR-1-622	A
		MGX-SMFLR-1-622	A
MGX-RPM-64M/B	B	MGX-RJ45-FE	A
		MGX-MMF-FE	A
		MGX-RJ45-4E	A
		MGX-MMF-FDDI	A
		MGX-SMF-FDDI	A
		MGX-MMF-FDDI/FD	A
		MGX-SMF-FDDI/FD	A

Front card model #	Rev #	Back card model #	Rev #
MGX-RPM-128M/B	B	MGX-RJ45-FE	A
		MGX-MMF-FE	A
		MGX-RJ45-4E	A
		MGX-MMF-FDDI	A
		MGX-SMF-FDDI	A
		MGX-MMF-FDDI/FD	A
		MGX-SMF-FDDI/FD	A
AX-CESM-8E1	A	AX-SMB-8E1	
		AX-RJ48-8E1	
		AX-R-SMB-8E1	
		AX-R-RJ48-8E1	
AX-CESM-8T1	A	AX-RJ48-8T1	
		AX-R-RJ48-8T1	
MGX-AUSM-8E1/B	A	AX-SMB-8E1	
		AX-RJ48-8E1	
		AX-R-SMB-8E1	
		AX-R-RJ48-8E1	
MGX-AUSM-8T1/B	A	AX-RJ48-8T1	
		AX-R-RJ48-8T1	
AX-FRSM-8E1	AC	AX-SMB-8E1	
		AX-RJ48-8E1	
		AX-R-SMB-8E1	
		AX-R-RJ48-8E1	
MGX-VISM-8T1	A	AX-RJ48-8T1	
		AX-R-RJ48-8T1	
MGX-VISM-8E1	A	AX-SMB-8E1	
		AX-RJ48-8E1	
		AX-R-SMB-8E1	
		AX-R-RJ48-8E1	
AX-FRSM-8E1-C	AC	AX-SMB-8E1	
		AX-RJ48-8E1	
		AX-R-SMB-8E1	
		AX-R-RJ48-8E1	
AX-FRSM-8T1	AC	AX-RJ48-8T1	
		AX-R-RJ48-8T1	

Front card model #	Rev #	Back card model #	Rev #
AX-FRSM-8T1-C	AC	AX-RJ48-8T1	
		AX-R-RJ48-8T1	
MGX-FRSM-HS2/B	A	MGX-SCSCI2-2HSSI/B	A
MGX-FRSM-2CT3	A	MGX-BNC-2T3	A
MGX-FRSM-2T3E3	A	MGX-BNC-2E3	A
		MGX-BNC-2E3A	A
MGX-FRSM-HS1/B	A	MGX-12IN1-4S	A
MGX-CESM-T3E3	A	MGX-BNC-2T3	A
		MGX-BNC-2E3	A
		MGX-BNC-2E3A	A

Support for embedded Cisco IOS router (Router Processor Module - RPM)

- The RPM is an embedded Cisco IOS router with integrated ATM Deluxe Port Adapter and Cellbus Controller ASIC for internal connections to the backplane Cellbus. A number of port adaptors (back cards) can be configured with the RPM front card (FDDI, Ethernet, Fast Ethernet).
  - 4E Adapter
  - FE Adapter (UTP, MMF)
  - FDDI Adapter (full duplex, half duplex, SMF, MMF)

MGX 8220 Hardware Not Supported on Release 1.1.25 of the MGX 8850

The following cards are not supported in Release 1.1.25:

- AX-SRM-T1E1
- AX-SMB-8E1
- AX-R-SMD-8E1
- AX-RJ48-8E1
- AX-R-RJ48-8E1

MGX 8220 Hardware that has been superseded on the MGX 8850 by MGX 8850-specific Hardware

- AX-SRM-3T3-A and AX-BNC-3T3 card set

  The MGX-SRM-3T3-C front card replaces the original AX-SRM-3T3-A front card and the MGX-BNC-3T3 back card replaces the original AX-BNC-3T3 back card. This change allows the use of slots 9, 10, 25, and 26 for 1:n redundancy and BERT in the MGX 8850 chassis. Both the AX-SRM-3T3-A/AX-BNC-3T3 card set and the MGX-SRM-3T3-C/MGX-BNC-3T3 card set are supported on the MGX 8220.

  New card should have enabled use of bulk distribution in slots 9 and 10. 1:N redundancy should have been supported in those slots with the model A card.

- AX-SCSI2-2HSSI

  Superseded by the MGX-SCSCI2-2HSSI/B, which works with the MGX-FRSM-HS2 front card. A V.35 interface is supported on the MGX-FRSM-HS1/B in this release.

- AX-IMATM

  Superseded by MGX-AUSM-8T1/B and MGX-AUSM-8E1/B

- AX-IMATM-B

  Superseded by MGX-AUSM-8T1/B and MGX-AUSM-8E1/B

MGX 8220 Hardware Not Supported on the MGX 8850

- AX-FRASM-8T1
- All four port MGX 8820 cards
- AX-AUSM-8T1
- AX-AUSM-8E1

Software Platform Features

MGX 8850 provides high speed native ATM interfaces which can be configured as ATM UNI ports or trunks

Support for 1:N and 1:1 Service Module Redundancy, as indicated in the following table:

Front Card Model #	Redundancy Supported
MGX-RPM-64M/B	No redundancy
MGX-RPM-128M/B	No redundancy
MGX-AUSM-8E1/B	1:N redundancy
MGX-AUSM-8T1/B	1:N redundancy
AX-CESM-8E1	1:N redundancy
AX-CESM-8T1	1:N redundancy
MGX-CESM-2T3E3	1:1 redundancy
AX-FRSM-8E1	1:N redundancy
AX-FRSM-8E1-C	1:N redundancy
AX-FRSM-8T1	1:N redundancy
AX-FRSM-8T1-C	1:N redundancy
MGX-FRSM-HS2	1:1 redundancy
MGX-FRSM-2CT3	1:1 redundancy
MGX-FRSM-2T3E3	1:1 redundancy
MGX-FRSM-HS1/B	No redundancy
MGX-T3E3	1:1 redundancy

Front Card Model #	Redundancy Supported
MGX-VISM-8T1	1:N redundancy (bulk mode support for T1 lines only)
MGX-VISM-8E1	1:N redundancy (bulk mode support for T1 lines only)

Support for Bulk Distribution using SRM-3T3-C card.

Service module and PXM upgrades.

Features Not Supported in this Release

- RPM 1:1 redundancy
- RPM statistics
- Layer 2 support as an autoroute routing node
- SRM T1E1
- IPX endpoints with the MGX 8850
- E1 users circuits
- T1/CAS Backhaul
- Interworking with SGCP 1.1+ compliant call agent (Bellcore CA SM1.5)
- Interworking with Cisco 3810
- G.726 and G.729 voice compression
- G729b voice activity detection
- Voice Circuit Admission Control (CAC)
- Bearer continuity testing
- Ring back tone on Ground Start
- Separate PVCs for signaling and bearer channels

Note Code for the above features may be included in the VISM code image. However, no specific mechanism has been included to prevent the use of these unsupported features. If the user attempts to use these unsupported features, there is no guarantee that the features will operate correctly.

Major Network Management Features

- CWM Connection Management
- CiscoView support for equipment management
- CLI support
- Service MIB support
- Connection Management for connections to RPM with associated CM GUI support.
- Topology subsystem enhancements to support the MGX 8850 as a stand-alone switch.

- Statistics

For more details refer to the CWM Release 9.2.07 release notes part number 78-6659-07.

Connection Limits

- Up to 4000 connections per VHS card.
- Up to 1000 connections per 8 port card (up to 898 per port with LMI enabled)
- Up to 200 connections per HS1 card
- Up to 12000 connections per shelf

SNMP MIB

The SNMP MGX 8850 MIB is being provided with the delivery of Release 1.1.24 of the MGX 8850 software on CCO. The MIB is in standard ASN.1 format and is located in the ASCII text files `MGX8800Mib.my` file which is included in the same directory within CCO. These files may be compiled with most standards-based MIB compilers. For changes in this MIB from release 1.1.23, please refer to the MIB release notes on CCO.

Notes & Cautions

CLI modification and changes in this release

dspfail <slotno>

shows all failed connections per slot basis

dspfabit <slotno>

shows all A-bit failed connections per slot basis

dsplmiloop

shows if lmi loop is present

chkslotcon <slotno>

checks database consistency per slot basis

chkportcon <slotno> <portno>

checks database consistency per slot basis

Chkcon <slot.port.vpi.vci>

checks database consistency per connection basis

dspbecnt

displays bit error count

CLI modification and changes in previous releases

- A few modifications have been made to the IP configuration commands. (cnfifip and bootChange) See CLI Change section:

- the cnfifip command has an additional option to up/down one of the ip interfaces (ethernet, slip, atm) dynamically. No reboot is required to up/down interface. Turned down interfaces are persistent across resets.
- the cnfifip command is now an active only command
- **dspifip** will now display the state of each interface and indicate if it is up or down.
- bootChange now checks the ip values set and will complain if it detects incorrect values.
- bootChange values are sent and updated on standby card automatically. Both bootlines are kept in sync.
- bootChange command is now an active only command from CLI.
- **cnfenetgw** command has been added to establish the ethernet gateway route permanently. (command is active only)
- **dspenetgw** command will display ethernet gateway address set.
- A shelf can now either have one or two ip addresses for ethernet. The shelf ip address set using cnfifip will always be the active card ip address. The bootChange ip address will be used for the standby card and backup boot if it is different than the shelf ip address. If the bootChange ip address is same as the shelf ip address then the ethernet interface on the standby card or in backup boot will be left in the down state.
- If the “255.255.255.252” netmask is used for the SLIP interface, the PXM will automatically add host route for its peer whenever the interface is turned ON
- If the FW fails to reach the CLI prompt or comes up in backup boot, the ethernet interface could be down if the shelf ip address and boot change address are the same. In this case the bootChange command could be used from the shell to set another ip address and then usrEnetEnable should be called to activate that address. (see example)
- Commands and Examples
- cnfifip:

  Syntax:

  cnfifip “Interface IPaddr [NetMask [BroadcastAddr]]”

  or cnfifip “Interface Flag”

  Interface -- 26/28/37 (26:Ethernet 28:SLIP 37:ATM)

  or Ethernet/SLIP/ATM

  IP_Addr -- <n>.<n>.<n>.<n> (<n>: integer 0..255)

  Net_Mask -- <n>.<n>.<n>.<n> (<n>: integer 0..255)

  BroadcastAddr -- <n>.<n>.<n>.<n>

  (<n>: integer 0..255)

  Flag -- a string “UP” or “DOWN”

  Example:

  > cnfifip atm 192.9.200.1 255.255.255.128

  This configures the ATM interface and brings it UP.

  > cnfifip atm up

  This will bring up the ATM interface with current information in database.

  > cnfifip atm down

This will bring down the ATM interface and preserve the information in the database.

– **delifip**

Syntax:

delifip Interface

Interface -- 26/28/37 (26:Ethernet 28:SLIP 37:ATM) or Ethernet/SLIP/ATM

Example:

> delifip 37

This will bring down the ATM interface and delete the information in the database

– **dspifip**:

Example:

```
    > dspifip
Interface         Flag  IP Address       Subnetmask       Broadcast Addr
---------------   ----  ---------------  ---------------  ---------------
Ethernet/lnPci0   UP    172.29.37.77     255.255.255.0    172.29.37.255
SLIP/sl0          DOWN  172.29.36.253    255.255.255.252  (N/A)
ATM/atm0          UP    192.9.200.1      255.255.255.128  0.0.0.0
```

This command shows the current condition of all 3 interfaces. The data shown for the SLIP interface will apply when it is turned UP with, say, “cnfifip slip on”.

– **cnfenetgw**

Syntax:

cnfenetgw IPAddr

Example:

```
    > cnfenetgw 172.29.37.1
```

This command will set the default gateway and add the appropriate routes necessary to it.

– **dspenetgw**

Example:

```
    > dspenetgw
      Enet Gateway:  172.29.37.1
```

– bootChange:

Several lines are essential for the network to function:

- boot device : lnPci

(The only Ethernet interface)

- inet on ethernet (e) : 172.29.37.40:ffffff00

(IP address and subnetmask)

- gateway inet (g) : 172.29.37.1

(Default Ethernet gateway)

The PXM will try to correct bad entries when it boots up. This information will be copied to the standby card and if different than the shelf ip address it will up the interface on the standby with the bootChange ip address. The shellconn version of this command only updates the local bootline values and is not copied to the other card.

– usrEnetEnable:

Used to bring up the Ethernet interface when CLI prompt is not there or in backup boot if it's not enabled

The following commands which are related to FRSM-2CT3 line level loopbacks.

- Remote Loopback at DS3:-

  This loopback can be configured in FRSM-2CT3 using the following commands.

  adddds3rmtloop <lineno>

  xcnfln -ds3 <lineno> -e 3 -lpb 2

- Local Loopback at DS3:-

  This loopback can be configured in FRSM-2CT3 using the following commands.

  adddds3loop <lineno>

  xcnfln -ds3 <lineno> -e 3 -lpb 3

  DS3 Loopback status will be displayed with following commands:

  dspds3ln <lineno>

  dspalm -ds3 <lineno>

  dspalms -ds3

  FEAC codes monitoring and Inband loopbacks for DS3 are not supported in FRSM-2CT3

- Remote Loopback at DS1:-

  This loopback can be configured in FRSM-2CT3 using the following commands:

  cnfbert (from PXM)

  addrmtloop <lineno>

  xcnfln -ds1 <lineno> -e 3 -lpb 2

- Local Loopback at DS1:-

  This loopback can be configured in FRSM-2CT3 using the following commands:

  cnfbert (from PXM)

  addlnloop <lineno>

  xcnfln -ds1 <lineno> -e 3 -lpb 3

  DS1 Loopback status will be displayed with following commands:

  dspln <lineno>

  dspalm -ds1 <lineno>

  dspalms -ds1

- Inband loopback for DS1 are supported only using bert diagnostics. The status of inband loopbacks are displayed with **dspalm** and **dspalms** commands. It is not displayed with **dspln** command. Before configuring the DS1 line in Inband loopback from bert diagnostics, user should use following command to enable code detection on FRSM-2CT3:

  xcnfln -ds1 <lineno> -e 3 -detect 2

- Ctrl-X has been disabled from resetting PXM on the firmware.
- This release has the fix to meet the Bellcore jitter specs. The way to fix the jitter problem is having FW to disable the force_signal_detect_enable register and let the optical receiver to control the signal-detect input. The OC3 transmit data jitter now measured is below 0.10UI.
- Due to the concerns about the too frequent message exchanging between the two PXM cards, the current command **dspbecnt** is limited by following:
  - **dspbecnt** only displays the bit error counts after the last APS switch, i.e. every APS switch will clear the counts for both working and protection line.
  - **dspbecnt** displays the active line bit error counts correctly. The bit error counts for non-active line is inaccurate and requires a state change (since the last state) in the protection line for display of any bit error counts.
  - A state change indicates a change of line status, such as from SD to SF.

Node Related

At most one BERT test can be performed per shelf at any point in time. BERT can only be activated through the CLI.

Do not execute the **restoreallcnf** command in the middle of the installation process. If you follow the following steps:

Step 1 **saveallcnf**

Step 2 **restoreallcnf**

Step 3 install

Step 4 **newrev**

The **dsplns** command will display a line as disabled, but you cannot run an **addln** command. Do not execute the **restoreallcnf** command until the install and **newrev** commands have completed.

The correct order for the restore procedure is:

Step 1 **saveallcnf**

Step 2 install

Step 3 **newrev**

Step 4 **restoreallcnf**

(for more information, refer to CSCdm57683)

Addln should be issued before issuing **addapsln**.

The following line and alarm related commands have been modified to allow slots 8, 16 and 32 as valid arguments if PXM at slot 8 is active:

- **addln**
- **delln**
- **cnfln**
- **dspln**
- **dsplns**
- **addlnloop**
- **dellnloop**
- **cnfsrmclksrc**
- **dspsrmclksrc**
- **dspalm**
- **dspalms**
- **dspalmcnt**
- **clralmcnt**
- **clralm**
- **dspalmcnf**

Full SRM redundancy requires redundant SRMs. There must be SRMs in BOTH slot 15 and 16 to ensure service module redundancy for the upper shelf AND SRMs in BOTH slot 31 and 32 to ensure service module redundancy for the lower shelf. Lack of the second SRM in either shelf may result in mismatch conditions.

For service module redundancy support, if the active service module is physically removed from the slot then a switchcc would cause the now active service module to be inaccessible. The workaround is to make sure that both the active and standby cards are physically present in their slots. If the active card indeed needs to be removed then at shellconn type: pmmStartScmPolling(slotnumber) after the switchcc.

If you are moving service modules from an existing MGX 8220 platform to the MGX 8850, the MGX 8220 service modules (AX-FRSM-8T1/E1, and AX-CESM-8T1/E1) need to have the boot flash upgraded to MGX 8220 Release 5.0.00 common boot code (1.0.01 version) before they can be plugged in to the MGX 8850 chassis. All MGX-8220 service module versions that use release 4.0.xx of boot code and earlier are not supported in the MGX 8850.

If loading of the correct common boot code image is required then it will have to be performed on an MGX 8220 chassis, and cannot be performed on an MGX 8850 chassis. Please refer to the procedure below, which is also outlined in the *Cisco MGX 8850 Installation and Configuration* publication on the documentation CD.

Step 1 Use ftp to port the Axis 5 common boot image for the service module to a workstation

Step 2 Plug in the card into the MGX 8220 shelf

Step 3 Download the proper MGX 8220 shelf release 5.0 boot image using the following commands from the workstation:

```
tftp <ip address of the MGX 8220 shelf >
bin
put <boot filename> AXIS_SM_1_<slot#>.BOOT
```

Insure that tftp downloaded the appropriate boot code by verifying the flash checksums.

Step 1 Log into the shelf.

```
cc <slot #>'
```

Step 2 Verify that the two checksums are the same.

```
chkflash'
```

If NOT, repeat the process until they are the same. If they are the same, then you can safely remove the card. At this point the service module can be used in the MGX 8850 shelf.

Caution If the checksums are not the same when you remove the service module then the service module will not boot when it is plugged in and the service module will have to be returned using the Cisco Returned Material Authorization process.

Whenever an MGX 8850 is added as a feeder to a BPX 8600, SWSW automatically programs a channel with a VPI.VCI of 3.8 for use as the IP Relay channel. IP Relay is used to send IP data between nodes via the network handler; allowing every node in the domain to be directly addressable via IP addressing and CWM workstations to communicate with every node (especially feeders) using TELNET, SNMP and CWM protocols. If the user tries to add a channel with a VPI.VCI of 3.8, the BPX 8600 does not prevent the user channel from being added, but the MGX 8850 rejects it. To delete the added channel on the BPX 8600, and to get IP relay working you need to reset the BXM card.

In addition to clearing all the configuration, **clrallcnf** clears the network IP addresses. IP addresses and netmasks stay the same (**dspifip**). However, it's recommended by engineering to reconfigure them using the cnfifip command. Network IP is gone (**dspnwip**), and must be reconfigured using the cnfifip command. Refer to the entry on cnfifip in the *Cisco MGX 8850 Command Reference* publication on the documentation CD for syntax.

- The **copychan** command does not work on the MGX 8850

A minimum of two and up to four IP addresses are needed to be configured for MGX 8850 (one or more of the following: ethernet, ATM, SLIP) and the boot IP address. The user should use “bootChange” to set up IP gateway when the PXM card is just installed. The IP default gateway should be on the same subnet as the PXM board. Use the bootChange command to set correct IP address, netmask, and default gateway.

Do not install a Y cable on the UIA CP port for PXMs. If you do both serial ports will be enabled and you will not be able to communicate at all with the shelf through the console ports. If after switchcc standby PXM loses the downlevel port then it is due to a downlevel Beta version of UIA backcard that were shipped during field-trial only. Upgrading the UIA back card to the latest version should fix this problem.

To configure the external clock source, use the interface label 7.35. Do not use 0.33 or 7.33

There are also *routeShow/routeAdd/routeDelete* commands for modifying routing tables.

You must reboot your PXM after each modification with "*bootChange*" for it to take effect. Also make sure the subnet mask is 255.255.0.2

```
. bootChange
  - Only enter the ethernet IP address, netmask and default gateway.
  - Type "." to erase incorrect entries.

    tigers.1.7.PXM.a > bootChange

    '.' = clear field;  '-' = go to previous field;  ^D = quit

    boot device          :lnPci
    processor number     :0
    host name            :C             <-- Please put "C".
    file name            :
    inet on ethernet (e) :172.29.37.40:ffff00  <-- Ethernet IP Addr/Netmask
    inet on backplane (b):
    host inet (h)        :
    gateway inet (g)     :172.29.37.1   <-- Default Gateway
    user (u)             :
    ftp password (pw) (blank = use rsh):
    flags (f)            :0x0
    target name (tn)     :
    startup script (s)   :
    other (o)            :

  - Type in reboot, after this the command "ping" will work:

    tigers.1.7.PXM.a > ping 171.71.54.53 1
    171.71.54.53 is alive
```

Configuration save and restore is only supported through the CLI (CWM does not support configuration save and restore).- Service module upgrades error handling is not provided. If the user skips any of the steps during upgrade or if a power failure happens in the middle of the upgrade, results will be unpredictable. See the Special Installation and Upgrade requirements section for service module upgrades. To recover from procedural errors contact your TAC support personnel.

The MGX 8850 supports 15 simultaneous telnet sessions and 10 tftp sessions.

You must use the following Y cables for FRSM-HS2 and FRSM-CT3 redundancy as specified in the Product Orderability Matrix (Straight Cable: 72-0710-01, Crossover Cable: 72-1265-01, Straight Y-cable: FRSM-HS2: CAB-SCSI2-Y, FRSM-CT3: CAB-T3E3-Y). Other cables are not supported.

Y cable redundancy for FRSM-HS2, FRSM-2CT3, FRSM-2T3, FRSM-2E3 is only supported for adjacent slots.

Statistics are not supported for the RPM.

There is no need to issue the **syncdisk** and **shutdisk** commands before removing the PXMs. The system quiesces the disk by detecting the removal of the PXM board and flushes the write buffers to the disk and *puts the PXM in sleep mode.* This disables any further hard disk access since it locks the actuator. *When the card is reinserted the PXM automatically comes out of sleep mode.*

Syntax of **addlink** command has changed as follows:

New Syntax:

Syntax: **addlink** <T3LineNum> <T1Slot> <NumberOfT1s> <TargetSlotNum>

<TargetSlotLineNum>

<T3LineNum> where = Slot.Line

Slot = 15,31

Line = 1 - 3

<T1Slot> where T1Slot = 1 - 28

<NumberOfT1s> where NumberOfT1s = 1-8

<TargetSlotNum> where TargetSlotNum = 1-6|11-14|17-22|27-30

<TargetSlotLineNum> where TargetSlotLineNum = 1-8

PAR command **cnfnwip** has been disabled in this release, please use "cnfifip" instead.

If you lose power, or remove the on-line PXM you lose the broadcast address. Use the "cnfifip" command to configure the broadcast address. To re-define your ATM address and IP Address that are in the same subnet, you have to change the ATM address to a temporary address not in the same subnet, then add back your IP Address with the original Broadcast address, then go back and correct your ATM address.

Cooling and Power limitations: Customer should be aware of the need for extra power supplies and fans beyond certain limitations. A single fan tray will support all configurations that draw between 1200 and 1400 watts. For power requirements, the MGX 8850 requires a minimum of one power supply per line cord to support the power requirement for 5 cards.

	0-5Cards	6-10 Cards	11 and Above
Single Line Cord (N+1):	2	3	4
Dual Line Cord (2N):	2	4	6

This is based on an estimated worst case power requirement of 190W plus margin per card slot.

CONNECTION MANAGEMENT RELATED

The name of the node cannot be changed if there are PVCs. The node name must be changed from the default value before adding connections, since it cannot be changed later. Use the **cnfname** command to change the node name.

Only one feeder trunk can be configured. No BNI trunk to MGX 8850 as a feeder is supported.

The slave end of a connection must be added first.

The slave end cannot be deleted and re-added back by itself. If you delete the slave end, the entire connection must be completely torn down and re-added back. If the slave end of the connection is deleted and re-added back by itself, then unpredictable results will happen.

For user connections, VCI 3 and VCI 4 on every VPI are reserved for VPC OAMs.

The actual number of feeder connections you can provision on the PXM is always two less than you have configured. (the **dsprscprtns** command shows max connections as 32767, but you can only use 32767 - 2 = 32765). One connection is used for LMI and another one for IP relay.

There is no error handling detection while provisioning through the CLI. Invalid endpoints and unsupported connection types (such as connections between FRSM-CESM ports or connections between structured and unstructured connections) are permitted using the CLI. The user should not configure these connections.

The sum of CIR of all channels of a port can be greater than port speed as long as CAC is disabled. However, it is not acceptable for one channel's CIR to be greater then port speed even if CAC is disabled. Two channels added up can exceed port speed. This means you cannot oversubscribe a port if only one channel is configured.

When trying to add a port on DS0 slot 32 of a CESM-8E1 line using an SNMP set or the CiscoView Equipment Manager, The SNMP agent in CESM will time out, without adding the port. The SNMP libraries treat the 32 bit DS0 slotmap (cesPortDs0ConfigBitMap) as an integer. The value for the last DS0 is treated as the sign value. This causes a corruption in the packet coming to the agent. As the agent does not receive a complete SNMP packet, it does not respond and times out. Use the command line interface to add a port on DS0 slot 32 of a CESM-8E1 line.

The **cnfport** command does not allow VPI ranges to be reduced. The **cnfport** command only allows the VPI range to expand. The correct sequence is to delete all connections on the partitions, delete the partitions, delete the port and add the port with new VPI range.

On an FRSM-2CT3, one can add 128 ports on a group of 14 T1 lines as indicated below.

lines 1 to 14 -- 128 ports (A)

lines 15 to 28 -- 128 ports (B)

lines 29 to 42 -- 128 ports (C)

lines 43 to 56 -- 128 ports (D)

So, to add 256 ports on one T3 one should add 128 ports on the first 14 T1 lines and the remaining 128 on the next 14 T1 lines.

Note that (A) and (D) are connected to 1st FREEDM and (B) and (C) are connected to the 2nd FREEDM. Each FREEDM supports only 128 ports. If 128 ports are added on one T3 as in (A), then there cannot be any more ports as in (D). The 129th port should be on lines 15 to 42 (as in B or C).

If the user adds a connection between an RPM and a PXM and then deletes the connection the RPM shows no connection but the PXM still has the connection. The MGX was designed and implemented in such a way that only the connections that have the master end show up on PXM (by **dspcons** command). Consider these three connections:

c1 - has only slave end,

c2 - has only master end,

c3 - has both master and slave end.

When using the **dspcons** command, c2 & c3 will be displayed, NOT c1. The connection will not show up once the master end (PXM) is deleted. Recommendation: When adding a connection, if one end of the connection is PXM, always configure the PXM side to be the slave. Thus when deleting the RPM side, which is the master, the connection will not show up on the PXM. However keep in mind that the slave end (PXM) still exists. This also provides a side benefit. When a connection exists with only the slave side, no bandwidth is occupied. The bandwidth is reserved only if the master end exists (with or without the slave).

The MGX-FRSM-HS1/B is capable of supporting a total throughput (card-level) of 16 Mbps. However, it is possible to configure 4 lines each supporting up to 8 Mbps, thus oversubscribing the card. This has been raised in bug #CSCdm71476 and a restriction/warning will be added in a future release.

Addlnloop on an FRSM-HS1/B line works only when there is a (valid) cable plugged in to the backcard on that line. This is a hardware limitation on the backcard and has been mentioned in the Release-notes in bug# CSCdm44993

RPM Related

The RPM is a NPE-150 based router card capable of sustaining 150,000 pps. With RPM versions earlier than 12.O.7T1, some limitations in Inter-Process Communication between the can cause the PXM to declare that the RPM has Failed, when the RPM is at high loads. To avoid this, with RPM software releases earlier than 12.0.7T1, throughput is limited to 62,000 pps, and it is recommended that MPLS configurations are limited to 100 interfaces.

With RPM software releases from 12.0.7T1, those limitations are removed.

In a separate limitation, the number of directly-connected OSPF networks supported by an RPM is currently limited to 27. This means that any or all of the 700 subinterfaces supported by the RPM can run OSPF, but the number of distinct OSPF networks supported is limited to 27. (A work-around is available and is discussed below.) The limit of 27 arises because of the overheads of supporting separate link-state databases for separate networks. In an application where the RPM is a Provider Edge Router in an MPLS Virtual Private Network service, a much better solution in any case is to use a distance-vector routing protocol between the customer routers and the RPM. A distance-vector routing protocol provides exactly the information required for this application: reachability information, and not link-state information. The distance-vector routing protocols supported by the RPM are BGP, RIP v1 and RIP v2, as well as static routing. With RPM software releases from 12.0.7T1, distance-vector routing protocols can be used with as many different networks as subinterfaces. Currently, the RPM supports 700 subinterfaces, and hence 700 networks with BGP, RIP or static routing.

Note that if the RPM is acting as a Provider Edge Router in an MPLS Virtual Private Network service, and even if OSPF is running in a customer network, it is not necessary to run OSPF between the customer router and the RPM. If the customer edge devices run Cisco IOS, they can redistribute OSPF routing information into RIP using the IOS commands redistribute rip in the OSPF configuration, and redistribute ospf in the RIP configuration. Similar configurations are possible for BGP. Using such configurations, the RPM with IOS software release 12.0.7T1 supports 700 customer networks which use OSPF internally. (For more information on readvertisement, see the “Configuring IP Routing Protocol-Independent Features” chapter in the “Cisco IOS Release 12.0 Network Protocols Configuration Guide, Part 1”.) Redistribution is not unique to Cisco CPE, and other vendors' equipment also supports redistribution.

Recommendations for Booting:

The current implementation provides the following options:

From PXM Disk

NetBoot (TFTP server)

Booting from PXM Disk is faster than NetBoot.

Recommendations for saving RPM configuration

The current implementation provides the following options:

a. Save on flash / boot-flash.

b. Save on PXM Disk.

c. Save on network (TFTP server)

d. Save on RPM NVRAM (comes up faster; only for limited configuration size)

It is recommended to save the configuration on flash and on the PXM Disk, as well as on the network server. This ensures that the configuration can be restored; even in the case of multiple failures.

For example if an RPM card has problems, one can copy the configuration from either the PXM disk or from the network to new RPM card. In case of multiple hardware failures (both RPM and PXM cards have problems) one can copy the configuration from the network server.

Replacing the existing RPM with a new card or a card with old configuration in flash:

The existing configuration (of the old card) can be restored on the newly inserted card by following the instructions given below:

Step 1 Insert the new card into an unreserved empty slot. A previously used slot can be unreserved by giving the **clrsmcnf** command.

Step 2 Copy the old RPM's configuration (from the PXM disk or the network server) to the new card's bootflash (For example copying from PXM disk: "copy c: <image name> bootflash:").

Step 3 Configure the new card to use the configuration in its bootflash using the "boot config bootflash: <config-file-name>" command.

Step 4 Save the changes using "write mem" command.

Step 5 Insert the new card into the old slot.

Please note that in RPM context the "config save/restore" feature of the PXM only restores the PXM part of the RPM configuration/connections. The RPM part of the configuration should also be saved from RPM CLI through copy command (For example: "copy run c: <config-filename>" for saving to PXM Disk) for future restoration.

RPM Connection Resynchronization:

The RPM Connection Re-sync process is supported in the 12.04T and higher releases. This feature checks for consistency between the RPM and PXM connection databases.

Limitations

restoreallcnf

Do not execute the **restoreallcnf** command in the middle of the installation process. If you do, the **dsplns** command will display a line as disabled, but you cannot run an **addln** command. Do not execute the **restoreallcnf** command until the install and **newrev** commands have completed.

The correct order for the restore procedure is:

Step 1 Execute the **saveallcnf** command.

Step 2 Execute the **install** command.

Step 3 Execute the **newrev** command.

Step 4 Execute the **restoreallcnf** command

.(for more information, refer to CSCdm57683)

The Service MIB does not support resource partitions.

LIP is supported on the maintenance port, but there is no PPP support on the maintenance port.

BIS messages are constantly being sent from BPX to various nodes. This affects the frequency of TFTP updates, which may affect CWM performance and/or CWM database consistency.

Unable to provision virtual trunks in SWSW 9.1.10.

clrsmcnf

As a speedy way to wipe out all configuration on an SM, you can use **clrsmcnf**. This command works in the following scenarios:

- 1.1 SM not in slot
- 1.2 SM in slot and in active (good) state
- 1.3 SM in slot but in failed state or boot state or whatever state.

To be able to use an SM of a different type from the current one in a slot you can also use **clrsmcnf**. For example, if there is a FRSM8t1e1 in the slot with some configuration and the customer wants to use this slot for an AUSM8t1e1 card.

clrsmcnf cannot delete a port or channel due to corruption or error locally on the SM. It is able to delete the port/channel from within the PXM, but it cannot delete a port or channel due to corruption/error on the PXM itself. You can save an SM configuration and restore it back to the same slot on the same node. If the SM configuration is corrupted on disk, but the run-time image is okay and the file contented is corrupted, this is supported.

The following are NOT supported on the MGX 8850:

- Saving a configuration of an SM from one shelf and restoring it to the same slot on another shelf.
- Saving a configuration of an SM in a slot and restoring it to another slot of the same card type.
- If the SM configuration is corrupted on disk, but the run-time image is okay and the FAT is corrupted.

If you have more than 500 connections on a service module, before issuing **clrsmcnf** you need to change the session timeout default value.

Use CLI command timeout 0 (no timeout)

clrsmcnf

after it is done

Use CLI command timeout 600 (to set the timeout value back to the default)

Note **clrsmcnf** does not work with the VISM card.

Core Dump Mask

There are no system performance implication unless you take a core dump, currently the default error mask to take core dump is attached, you can change the mask or take it manually.

Set the core dump mask to its default value. If you enable core dumps with power on reset and shell reset core dumps enabled you will end up with a PXM that continuously dumps the core and resets. The only way out is to use a download boot that does not have the core dump feature.

```
Default setting 0x262ee

OFF 0001 Power ON Reset
ON  0002 DRAM Parity Error
ON  0004 WatchDog Timeout Reset
ON  0008 Resource Overflow
OFF 0010 Clear All Configuration
ON  0020 Missing Task
ON  0040 Reset because of PXM Low Voltage
ON  0080 Reset By Event Log Task
OFF 0100 Reset from Shell
ON  0200 Unknown
OFF 0400 Reset from PXM
OFF 0800 Reset System
OFF 1000 Switch Core Card
ON  2000 Secondary Cache Error
ON  4000 Software Error Reset
OFF 8000 S/W reset due to upgrade
OFF 10000 Restore All Configuration
ON  20000 Device Driver Error


NODENAME.1.8.PXM.a > core hot-dump
Do you want to proceed (Yes/No)? y
Dumping PXM Core Image[0]:
................................................................................
.....................................


Done.


NODENAME.1.7.PXM.s > core save 2 core.zip

Creating core.zip
..............................

Core dump basics.

There are two steps to save a core dump.

1. The system will store a raw core dump image on the disk (this image is
on a portion of the disk that is not used for the filesystem).
2. After the raw core dump image is saved on the disk, use the cli command
"core" to zip the image and save it in a file on the disk.


Use the "core mask" command to display and to set the mask which determines
which conditions will cause an autmatic core dump.


NODENAME.1.7.PXM.s > core mask
Automatic Core Dumping is enabled..
```

```
The Current Core slot is 0

The Current Core mask is 0x4004

OFF 0001 Power ON Reset
OFF 0002 DRAM Parity Error
ON  0004 WatchDog Timeout Reset
OFF 0008 Resource Overflow
OFF 0010 Clear All Configuration
OFF 0020 Missing Task
OFF 0040 Reset because of PXM Low Voltage
OFF 0080 Reset By Event Log Task
OFF 0100 Reset from Shell
OFF 0200 Unknown
OFF 0400 Reset from PXM
OFF 0800 Reset System
OFF 1000 Switch Core Card
OFF 2000 Secondary Cache Error
ON  4000 Software Error Reset
OFF 8000 S/W reset due to upgrade
OFF 10000 Restore All Configuration
OFF 20000 Device Driver Error

NODENAME.1.7.PXM.s > core mask 0x2e2ee
Automatic Core Dumping is enabled..

The Current Core slot is 0

The Current Core mask is 0x2e2ee

OFF 0001 Power ON Reset
ON  0002 DRAM Parity Error
ON  0004 WatchDog Timeout Reset
ON  0008 Resource Overflow
OFF 0010 Clear All Configuration
ON  0020 Missing Task
ON  0040 Reset because of PXM Low Voltage
ON  0080 Reset By Event Log Task
OFF 0100 Reset from Shell
ON  0200 Unknown
OFF 0400 Reset from PXM
OFF 0800 Reset System
OFF 1000 Switch Core Card
ON  2000 Secondary Cache Error
ON  4000 Software Error Reset
ON  8000 S/W reset due to upgrade
OFF 10000 Restore All Configuration
ON  20000 Device Driver Error

NODENAME.1.7.PXM.s >


Use the "core mask default" command to set the mask back to the default.


NODENAME.1.7.PXM.s > core mask default
Automatic Core Dumping is enabled..

The Current Core slot is 0

The Current Core mask is 0x262ee

OFF 0001 Power ON Reset
ON  0002 DRAM Parity Error
```

```
ON  0004 WatchDog Timeout Reset
ON  0008 Resource Overflow
OFF 0010 Clear All Configuration
ON  0020 Missing Task
ON  0040 Reset because of PXM Low Voltage
ON  0080 Reset By Event Log Task
OFF 0100 Reset from Shell
ON  0200 Unknown
OFF 0400 Reset from PXM
OFF 0800 Reset System
OFF 1000 Switch Core Card
ON  2000 Secondary Cache Error
ON  4000 Software Error Reset
OFF 8000 S/W reset due to upgrade
OFF 10000 Restore All Configuration
ON  20000 Device Driver Error

NODENAME.1.7.PXM.s >


Use the "core enable" command to enable autmatic core dumps.

NODENAME.1.7.PXM.s > core enable
Automatic Core Dumping is enabled..

NODENAME.1.7.PXM.s >


Use the "core disable" command to disable automatic core dumps.

NODENAME.1.7.PXM.s > core disable
Automatic Core Dumping is disabled..

NODENAME.1.7.PXM.s >


Use the "core hot-dump" to dump the raw image to the disk.


NODENAME.1.7.PXM.s > core hot-dump
Do you want to proceed (Yes/No)? y
Dumping PXM Core Image[0]:
.....................................................................................
.....................................

Done.

NODENAME.1.7.PXM.s >

Use the "core" command to list the current list of raw core dumps save on
the disk.

NODENAME.1.7.PXM.s > core
Saved Core Images:
Slot         Reset Reason                  Dump Time
-------------------------------------------------------------
0    Unknown   WED DEC 29 09:38:30 1999

1    WatchDog Timeout Reset   FRI DEC 10 08:51:52 1999

2    WatchDog Timeout Reset   TUE DEC 14 08:01:39 1999

3    WatchDog Timeout Reset   TUE DEC 14 12:38:01 1999
```

```
4    Reset from Shell   TUE DEC 14 14:45:30 1999

5    WatchDog Timeout Reset   WED DEC 22 08:20:26 1999

Automatic Core Dumping is enabled.
The Current Core slot is 0


NODENAME.1.7.PXM.s >


Use the "core save" command to save the specified raw image to the
specified zip file.

NODENAME.1.7.PXM.s > core save 0 ccc

Creating ccc
..............................
NODENAME.1.7.PXM.s >


To upload the zip file, you must use FTP (TFTP has a limit of 16 MBytes
for file size).

Enter shellconn:

NODENAME.1.7.PXM.s > shellConn

->


Set the and enable the user name:

-> setLogin
setLogin

  User Name
  =========
  cisco
value = 0 = 0x0
->


The user name is "cisco" and the password is "ciscoinc".
Now you can FTP the image. Be sure to use binary mode.

After the image has been uploaded, disable the user name:

-> clrLogin
clrLogin

  User Name
  =========
value = 0 = 0x0
->
```

Problems Fixed in Release 1.1.25

Bug ID	Description
CSCdr19456	Symptom: The CLI of the AUSM card hangs and then the AUSM card reboots when a number of ILMI (**atmfVpcVpi**) requests are received by the card. Condition: The time gap between two ILMI (**atmfVpcVpi**) requests arriving at the card is too small (the rate at which the ILMI requests arriving is high). Workaround: The rate at which the ILMI (**atmfVpcVpi**) requests to be received by the card should be less than 2 requests per second.
CSCdr42989	Symptom: The AUSM card generates excessive traps. Condition: PLPP, port, and IMA link traps are generated in excess for small bit errors on the line. Workaround: None.
CSCdr45128	If the primary clock is configured as inband, the **dspclkinfo** hardware status may shows the clock as internal even though it is inband.
CSCdr61335	Symptom: The card gets reset. Conditions: The card gets reset when a continuous getnext operation on the atmfVccEntry MIB group is done via the ILMI protocol from the CPE side. Workaround: None. Further Problem Description: This is happening because one of the semaphores was not being released.Another thing was that the maxilmicells was changed from 100 to 6. This was done in order to prevent the ILMI task from hogging the CPU.

Bug ID	Description
CSCdr63753	Symptom: The Stratacom Axis Shelf correctly translates Q.933 PDUs from ATM to FR. The Axis shelf correctly translates an X.25 PDU ATM to FR to pass. X.25 PDUs with I Frame values of '0x03 0x08' FR to ATM are incorrectly translated to Q.933 PDUs. The Axis Shelf discards all X.25 1490 PDUs with and I-Frame not equal to '0x03 0x08'. When PDUs are discarded, Stratacom View (9.0.03.SOL.Patch1) does show PDUs were received/transmitted but fails to show that they were discarded. Using the CLI command **dspchancnt**, the statistics 'Frames Discarded:' and 'RcvFramesUnknownProtocols/XmtFramesUnknownProtocols' were pegged on the Axis Shelf. Conditions: Workaround:
CSCdr72788	Symptom: When an ATM port is added with different line and port numbers, the ATM cell delineation alarm never clears. Condition: This occurs when the ATM port is added with different line and port numbers. Workaround: Use the same number for both the line and port numbers. This has been corrected in the fix.
CSCdr82101	Symptoms: On an ABR.1 connection (ABR with ForeSight disabled), the PCR(0+1) was changed (after adding the connection to something lower than the value it currently holds), further operations on this channel (via CLI or **snmpset**) fail. Conditions: On an ABR.1 connection (ABR with ForeSight disabled), the PCR(0+1) was changed after adding the connection to something lower than the value it currently holds, further operations on this channel (via CLI or **snmpset**) would fail. This is because the PCR(0+1) change would change the values of ForeSightPIR and ForeSightQIR, but leave the value of ForeSightMIRunchanged. ForeSightMIR used to have a higher value than ForeSightPIR & ForeSightQIR (after the **snmpset**) thereby causing further commands on this channel to fail. Workaround: This problem has been corrected. When PCR(0+1) is changed, it will be reflected in all 3 values (ForeSightPIR, ForeSightQIR, and ForeSightMIR).

Bug ID	Description
CSCdr82560	Symptom: When FRSM-2CT3 and FRSM-8 are connected on the line side and CLLM is enabled between them, FRSM-8 drops the CLLM messages sent by FRSM-CT3. Also FRSM-2CT3 cannot support CLLM timers as low as 40ms. Conditions: The CLLM messages FRSM-8 drops do not carry congestion information. Hence it does not affect any thing. But if the FRSM-8 is sending in CLLM messages at 100ms then FRSM-2CT3 starts dropping LMI/CLLM messages as the queue for both is common. This may lead to port alarm transitions. Workaround: For the first issue of FRSM-8 dropping the CLLM messages there is no workaround but this problem is fixed in 1.30 For the case where FRSM-2CT3 cannot handle CLLM messages at 100ms, the CLLM timer has to be set at least 250ms as 2CT3 cannot support anything less.
CSCdr86692	The PXM is stuck in the initialized state due to a bad back card and a PXM7cold solder problem. Workaround: None.
CSCdr89759	Symptom: Traps are sent with reversed VPI and VCI values. Conditions: This occurs when a VCC is setup or deleted. Workaround: None. This has been fixed.
CSCdr89898	Symptom: Card gets reset during connection provisioning using SNMP. Conditions: Back-to-back SNMP connection ADD requests will cause a reset to the FRSM-2CT3. Workaround: There is no concrete workaround. Introduce enough delay in the SNMP connection provisioning script.
CSCdr90170	This only happens when data flow is required between rpm and pxm over IPC channels, such as dir c: file transfer type of activities. This error message posts a warning due to IPC master and slave but does not impact IPC operations. The message appears on the console but not on the PXM syslog.

Bug ID	Description
CSCdr92751	Symptom: The card gets reset. Conditions: In case of softswitch. Workaround: None. Further Problem Description: We are ignoring the config change trap when the card is not active. Also, the **addimagrp** trap is not sent during any card rest /softswitch. Note that statistic requests are only processed after the card is active.
CSCds01770	During a manual **switchCC**, as the standby PXM is active, a few non reentrant APIs are called by tasks that were waiting to go ACTIVE on standby pxm. SnmpFeRx is an example. This task calls system_initialize(). During this period, if an SNMP request is made by NMS for the MIB-2 SYstem group, the request calls the same API. As the API is non reenterant, it causes an exception and the snmpAgent task is suspended which causes PXM to reset. Workaround: None.
CSCds02301	Symptoms: None Workaround: A new feature to provide SNMP set switchCoreCard. This feature was backported from the 1.1.30 release to the 1.1.25 so that the PXM image can be built successfully.
CSCds16745	GR253 standards are not adhered to in APS unidirection mode mismatch conditions. Workaround: None
CSCds24088	Symptom: Memory leaks on the hotstandby card leads to the resetting of the standby. Conditions: Channel row status is CHAN_ADD and a connection resync starts on active. Workaround: 1. Before you run out of memory, use a channel modify to change the chanRowStatus from CHAN_ADD to CHAN_MOD. This should be done immediately after adding the connection. 2. If you are already out of memory or have very low memory, then do a softswitch and switchback.

Problems Fixed in Release 1.1.24

Bug ID	Description
CSCdp55281	Symptom: Missing RPM resource partition (**rpmrscprtn**) line in configuration file. Conditions: When trying to add PVCs to an RPM module, you may be prevented from doing so. This is caused by a missing **rpmrscprtn** line in the configuration file running the configuration. This problem can occur if the PXM is busy when it receives an **rpmrscprtn** command update from the PXM. If the RPM times out after a request to the PXM, the **rpmrscprtn** configuration line will be missing from the running configuration file. This problem does not affect traffic or the addition of new connections. Workaround: Ensure that the **rpmrscprtn** configuration line is present in the running configuration file before resetting the RPM card, then save the running configuration file to the startup configuration. This will avoid the confusion of this line not being present in the running configuration. This command can be reexecuted on the RPM if it is missing. Please ensure that the parameters match with the PXM side. This can be checked by displaying the resource partition view on the PAR.

CSCdr05630	Symptom:
	MGX 8850 Switch shelf resets with an TlbLoadException error from tDispatch as follows:
	`Tlb Load Exception`
	`Exception Program Counter: 0x80127fac`
	`Status Register: 0x3000ff01`
	`Cause Register: 0x00000008`
	`Access Address : 0xc8787854`
	`Task: 0x82a485b0 "tDispatch"`
	Conditions:
	The shelf resets when the RPM is stressed; specifically, 3000-byte UDP packets loaded at -9.8 MB on e1/4 and approximately 170 kbps worth of pings on e1/1.
	Workaround:
	None.

Bug ID	Description
CSCdr19633	Symptom: On an AUSM-8T1e1, the IMA group name matched to an individual line forces the group to go down. Conditions: When a line is configured with the IMA group name, then the entire IMA group goes down if the line goes down. Workaround: Do not use the same name for the IMA group as the name given to the lines used. Evaluation: For AUSM card, when a line goes down, if there is a port(s) within the line, AUSM always send a porttrap to PXM. If the line is one of the links in an IMA GROUP, there is no porttrap except if the available number of links is less than the configured minimum. This means that when PXM receives linetrap, for AUSM card, it does not need to generate porttrap. And that will fix the problem.
CSCdr34252	Symptom: Management PVC between the MGX8850 and remote equipment fails after softswitch of AUSM cards. Conditions: After softswitch is performed the PVC that passes management traffic between devices stops passing through the PXM. Workaround: None. Further Problem Description: Management IP connections added from service modules to 7.34 fail to pass data after a switch over occurs from the primary to the secondary.
CSCdr35117	Symptom: The PXM shelf resets when the RPM is under stress. Condition: This problem occurs when the RPM is loaded with an enclosed configuration and traffic is generated toward CARed interfaces with CBWFQ. Workaround: None. Further Problem Description: The IOS IPC code on PXM was not handling NAK messages from RPM correctly. The code was not checking to see if the port (polling port) the NAK is received for still exists or not (checking for NULL pointer). This cause access to invalid address and eventually shelf reset.

Bug ID	Description
CSCdr38391	Symptom: Running the **clrsmcnf** command on a CESM and resetting the standby PXM causes the card to come up in cardinit state. Workaround: None. The code has been modified to pass LCN index zero instead of **firstdatalcn**.
CSCdr42987	Symptom: End-to-end OAM cells are dropped by the AUSM-8T1E1 card. Conditions: As of release 5.0.11, AUSM-8T1E1 dropped end-to-end loopback cells other than AIS, RDI and Loopback function types in Fault Management OAM cell type. This problem is now corrected so that the end-to-end OAM cells pass through the AUSM-8T1E1 card though the card does not monitor all of them. Workaround: None.
CSCdr49478	Symptom: After a sequence of adding and deleting service module redundancy and issuing the **clrsmcnf** command, and connection deletion/addition, the command **tstcon** does not pass on certain connections. Conditions: This problem occurs when a 1:1 redundancy is configured between VHS cards in slot 1 and slot 2. Card 1 is active, and card 2 is standby. Connections are added from 1 to 5. Then, redundancy deleted and connections deleted both on slot 1 and on slot5 using the **clrsmcnf** command. Redundancy was then added between slots 1 and 5, and subsequently deleted. Note that the connection addition was done in an environment wherein no connections existed either on slot 5, slot 1 or slot 2. Workaround: 1. Use CWM or the CLI to delete connections on both slots when a service module is configured with redundancy. 2. Then issue the command **clrsmcnf** to clear the port/line configuration.
CSCdr51248	Symptom: A mismatch is reported due to a MIB corruption since the new versions of VISMs need larger allocation of memory for the MIB. Workaround: None.

Bug ID	Description
CSCdr55023	Symptom: ARP translation doesn't work on FRSM-2CT3. Both the destination and the source IP addresses get corrupted in the ARP reply. Conditions: This problem occurs when ARP request is initiated from he ATM side. This problem does not occur if ARP request is initiated from the FR CPE side. Workaround: One of the following: 1. Use a static IP address instead of ARP. 2. Initiate ARP request from FR CPE.
CSCdr61548	Symptom: The card resets/fails when more than 600 connections are added when LMI is configured on the port. Condition: LMI packets gets corrupted after 600 connections, and subsequently, leads to problems during the ESE-SAR handshake. This causes ESE to stop. Workaround: No workaround for more than 600 connections.
CSCdr62285	Symptom: The CESM module generates a general error. Conditions: When the command **cnfbert** is issued, the causes the CESM module to generate the error. Workaround: None.

Problems Fixed in Release 1.1.23

Bug ID	Description
CSCdp20616	Cell-loss on pxm-uni conn on switchover caused by srm-back card removal
CSCdr11405	PVC alarms on FRSM-2CT3 cleared by softswitch
CSCdr15904	Frames drop on FR-ATM PVCs
CSCdr12167	Pulling active SRM causes IMA PVC to lose traffic w/o alarm
CSCdp50541	pxm-trunk-clocking goes bad on pxm-switchover,Periodic cellloss on fdr-conns
CSCdp51846	INCS1.5 - Slot failure on SRM brings down voice services CSCdp52180 MGX SRM fail/switchover outage time is unacceptable. CSCdp53887 Feeder connections could not be added via snmp on AUSM

Bug ID	Description
CSCdp58707	**dspbecnt** command does not work correctly for the non-active line currently.
CSCdp65557/ CSCdp75117	Softswitch on ausm causes 29 sec channel outage. When you perform a softswitch from Primary AUSM to Secondary AUSM in non-bulk mode, if system is very busy, the remote equipment may notice LOF or LOS. It is intermittent.
CSCdp69416	Removal of backcard on active aps line causes trunk and conn failure
CSCdp70976	Arbitrary number of voice calls are dropped due to switchcc on PXM
CSCdp82888	PXM reset/switchcc causes the ausm port to fail
CSCdp84773	Symptom: The resource partition does not get registered on the PXM card. Conditions: The resource partitioning of the AUSM card on the PXM is registered as zero instead of a value of three. This process takes place automatically with the AUSM card. On the VISM, it is done by issuing the command **addrscprtn**.
CSCdp88526	FRSM-2CT3 cards fail when script run to add close to 4000 conns.
CSCdp88046	Slow tftp GET and corrupted CF file checksum for SM with 3920 active chans
CSCdp99561	Cannot disable policing on the FRSM-2CT3 if Bc & Be set to max
CSCdp92627	Cannot add redundancy from primary ausm slot 19 to 30.
CSCdp99581	FRSM-CT3 egress queue build up causing the ingress Vc q to start discard even though traffic was being generated at PIR, with no other VCs active.
CSCdr07429	**restoresmcnf** not completely working
CSCdr08552	Not able to delete connections from SM after switchcc.In case of UNI connections able to delete connections but **dspcons** still shows the connections.
CSCdr09310	VxWorks Ping hangs on receiving ICMP unreachable message from NMS
CSCdm12468	PXM CLI cannot read nvram data for UI back card and trunk back card
CSCdm73868	New IMA link failure trap 50251 is generated.
CSCdm82756	The MGX 8850 stores user passwords in clear text. Any person with IP connectivity to the MGX 8850 can TFTP the userPassword.dat file from the MGX 8850 and view all the passwords. Password are encrypted before saving in the database.
CSCdm83076	IMA Group failure status is Ne start up, whereas Ne is operational.
CSCdp12290	when deleting port, no trap should be sent if rsc partition diskupdate fails. Return value for resource partition deletion diskupdate message, as part of port deletion, is not checked before sending out the subsequent resource partition config change trap. Also, when one of the resource partition diskupdate fails, the port deletion process should stop.
CSCdp14073	**dspabit** type command on Popeye

Bug ID	Description
CSCdp43334	The Bert on the FRSM-VHS require the **xcnfln** which has misleading parameters for the FRSM-T3 and FRSM-E3 service module. Although some parameters like-ds3enb (dsx3LineBERTEnable) also appear under the **xcnfln** for the FRSM-E3 card but bert could not be started with this parameter and it require a different parameter -ds3ben(dsx3LineBERTEnable). Some other times when Bert is enabled on one line, you could not delete the bert from this line using deldsx3bert and hence forth Bert cannot be enabled on any other line.
CSCdp46146	Can not delete RPM-RPM connection from the PXM
CSCdp47079	Policing defaulted to off on certain PXM connection (VBR and ABR)
CSCdp54765	Cannot add a port to a slot until card reset on FRSM-8T1E1
CSCdp57974	Need varbind for Configured Links in certain IMA traps.
CSCdp62456	database integrity commands do not catch incomplete master cons
CSCdp62652	No updated information about IMA Rx grp ID on AUSM
CSCdp63757	FunctionModuleFailed Trap 50006 keeps repeating twice
CSCdp65370	The port on the CESM-T3/E3 is in active state but the line is in RcvLOS alarm. When a T3 or E3 line indicates an alarm condition, the corresponding port state is not updated correctly. Port State is still displayed as active instead of failed due to line
CSCdp65651	Need to support a new VSI force Del passthru to handle connection timeout. During the connection addition, if the timeout occurs in VSI slave, SPM will clean up all the resources allocated for the connection. It then sends HD Update Fail message to the SM. Both SM & SPM do not have the connection anymore but PAR still has the connection in its database. If the user try to read the connection, PAR will reject the request. The user can not delete the connection either since there is none in the SM.
CSCdp69367	Need to disable CLI session timeout when issuing **clrsmcnf**. The fix involves disabling the session timeout before **clrsmcnf** or **restoresmcnf** commands are carried out and re-enabling the session timeout period when complete.
CSCdp80104	**dspapsln** shows both lines in R_AM after alarm on one line was cleared
CSCdp77244	support port rate modification without deleting connections
CSCdp76372	FRSM-2CT3 **dspchancnt** does not have KbpsAIR field
CSCdp75879	Signalling bits toggle in case of voltage disturbance on T1 input lea
CSCdp75844	LMI timeout values specified via the **cnflmitimer** value not correct. Prior to this fix LMI timers had to be configured (using **cnflmitimer** command) to double the desired value of LMI timeout.
CSCdp75827	values specified via **cnflmitimer** not preserved after switchcc/**resetsy**
CSCdp80130	**dspapsln** shows both aps lines to be OK when alarm exists
CSCdr15904	Frames are getting dropped on FR-ATM PVC, reason is not shown
CSCdr07460	**addlnloop** on the PXM causes a bidirectional loop
CSCdp99795	**k:dspservrate** does not show correct values
CSCdp96495	FRSM-2E3 does not support G.751 clearchannel format

Bug ID	Description
CSCdp91587	dsx3LineXmtClockSrc cannot be set to localClk on PXM T3
CSCdp87088	CESM-8t1e1Clock change to async mode on line causes bit errors on another line
CSCdp84676	When the service module tries to do graceful upgrade PXM crashes
CSCdp81859	Introduce **dspfail** command to display failed connections
CSCdp81205	When Protection Line was unplugged, it went into P_B state
CSCdp80154	**dspapsln** shows one line in R_AM when both are
CSCdr25595	/vob/psm/switchmgm/rmeptsm.c In func rmRebindLcnEpt(), modified the code not to init the pEptBlk->state, pEptBlk->lmiStatus, pEptBlk->lmiChangeFlag if EptBlk already exists.

Problems Fixed in Release 1.1.22

Bug ID	Description
CSCdm67177	Requirement to perform save/restore configuration on an individual SM basis, rather than restoring configuration of the entire shelf in the event of database corruption of a single SM.
CSCdm79604	CBR connection from cesm-8t1 in slot 30 to ausm-8t1 in slot 19 is first established.Only 21 time-slots on each T1 lines of CESM are utilized for the cbr connections.Then all the 8 lines on AUSM are linked to srm which in turn has a metallic loopback. A brief hit on the srm lines is caused by a pulling out the active card and the secondary core-cards takeover but from then on there is continuos LOP for CESM-AUSM cbr connections as noticed in the cerjac and also the ausm-line 1 remains in RcvLOF alarm state.
CSCdm81358	The alarm propagation from Port to Connection manager has been delayed for 1.5 seconds, and in turn it has reduced the channel alarm period at the other end.
CSCdp17292	Softswitch on AUSM causes remote end in and out of alarm
CSCdp23375	When doing resync from CWM station, the resync becomes partial because config upload fails for slot 12 (VHS-2T3 card).
CSCdp23536	Scenario: After switchover, some connections got deleted. Symptom: These connections' data structure have linkage problem. The linkage between the lcn block and endpoint block are not linked properly. The traffic may not go through. Workaround: These data structure must be manually removed to delete all the connections. **resetsys** might be necessary afterward. The sequence of the manual removal can not be predetermined. It depends on each individual problem. This steps are done via shellconn. Once the deletion is successful, the connections can be readded.

Bug ID	Description
CSCdp28768	Unable to add cesm-pxm-uni connections on some ports between cesm-8t1 in slot2 and pxm -port 4 . cesm-8t1 in slot 2 had 1:n redundancy with redundant card being in slot11.The secondary card in slot11 was active. While connections went through for some ports for some other ports ex: port2 in cesm it gives error message failed to update disk and with debug option turned on one sees the message no more lcn's available. The cesm-card initially had 4 -pxm-uni connections to pxm in slot-4/on line4 which in turn had a metallic loopback and the other 4 ports on cesm were connected to ausm-ima ports.All the connections in cesm were deleted and pxm-uni connections were re-added which give error in addition of uni connections on some ports.
CSCdp29829	Vhs in slot-17 & slot-27 were configured for Hot-Standby redundancy. Vhs in slot-17 initially had a different slot-specific -fw with different Mib-version & VHS in slot27 had generic VHS firmware dated 10.0.06_29Oct99_2. Card-17 was active & card-27 CT3 card was standby but not Hotstandby due to Mib-version discrepancy. At this step removed slot-specific vhs-firmware and reset card -17. which made VHS in slot-17 to come up in Hot-standby (took one more reset to come back in Hot-Standby) and Card 27 was active. At this step a VHS switchover was initiated which sent the Card-17 to Mismatch and Card-27 came -back active.There was also a feature set discrepancy observed.
CSCdp34030	Ram Sync State:Dbm Sync Fail Dbid:0x1030e (plfm:rm_archdb) PXM standby. This problem occurs when you downgrade PXM code from 1.1.12Ko to 1.1.12 if the rx cable is pulled during the downgrade
CSCdp34441	Channels on AUSM automatically deleted
CSCdp35989	Symptom: flood of invalid LMI frames overruns the LMI queue causing random LMI failures on other ports. Conditions: flooding LMI frames on one port. Workaround: stop the flood of invalid LMI messages.
CSCdp36936	Inconsistency between connections reported by PXM and RPM
CSCdp38919	Active AUSM with conns went to mismatch after the **resetcd** & never came a
CSCdp39955	Deleted chans on FRSM reappearing after the card is reset
CSCdp41926	PVCs in alarm for about 14 sec after YEL + switchcc.
CSCdp41980	Symptom: There is 1-N redundancy between ausm-8t1 in slot 5,6, & 13 with the ausm in slot5 & slot6 being the primary cards and slot-13 being the secondary card. when the cards in slot 5 & 13 are inserted and if 13 becomes the active card then, there is continuous cell-loss on the feeder connections associated with slot-6. The ausm-8t1 in slot-6 comes up in standby state and cc to logical active <slot-6> fails. Workaround: Do not try to make the secondary card to become active first.
CSCdp42721	AUSM shelves generating excessive 50131s
CSCdp44521	**cnfapsln** causes system to reboot and lockup

Bug ID	Description
CSCdp46093	Ausm-8T1 in slot 18 went into failed state. Earlier there was one vhs-swithchover between slot 19 & slot 30 and after the vhs in slot-19 was active and vhs in slot-30 was in hot-standby a pxm-switchover was initiated. There were a lot of SCM-sequence mismatches observed in the log as well as in the SCM-Card show command output. SRM in slots 15,31 & 32 were having a lot of Invalid GLCn counts & unknown SCM-Type counts. ausm in slot-18 had cbr connections to cesm in slot-2 and the ausm was linked to srm.
CSCdp46161	Symptom: Some of the end-to-end OAM loopback cells sent by CPE were blocked by AUSM-8P. Further Problem Description: OAM loopback cells have a field called Correlation Tag(4 octets) that is used to correlate the transmitted and received loopback cells. 16th bit of this field is used to identify StrataCom RTD cells (stratacom proprietary). RTD cells are not expected from Port side, but the firmware used to check for RTD cells from Port side. Every 16th bit set loopback cell was identified as an RTD cell and hence blocked.
CSCdp47025	FRSM-VHS cards failed upon connection deletion
CSCdp47059	FRSM-8T1 stuck in standby (tRootTask fails). Duplicate of CSCdp39955
CSCdp49478	Telnet connectivity lost during connection deletion
CSCdp51642	None of the ima commands work on AUSM card on POPEYE shelf under shellConn. So on serial port also it will not work. So none of the scripts can be executed. This is a ULIB Problem. Please refer to CSCdm54403 and CSCdm50366. These are the bugs logged on AXIS for similar problem. It has been fixed in uicnf.c. Similar fix has to be ported (if applicable) to POPEYE. This would impact all service modules and has to be done carefully. Currently, none of the IMA commands with string arguments would work in shellConn/serial Port.
CSCdp52062	A **resetsys** was done on the ipfrnj40 node. after **resetsys** all pvc on RPM slot 10 did not come back. on PXM all the chans were still there and in alarm state. Somehow the RPM resource partition statement was removed from slot 10 running config. the startup config in nvram still haD the statement. The log on RPM in slot 10 logged some RPC failed message and had not logged any other entry since then.
CSCdp53220	BCC switchcc on BPX caused connections on 8850 to generate alarm.
CSCdp54922	AUSMs stuck in standby after 1.1.21Lc upgrade.
CSCdp56297	aps line switches back even though non-revertive.
CSCdp56447	Last user request always shows clear after a manual aps switch.
CSCdp56827	aps switch causes ALM or Sig_F conditions.
CSCdp58709	After upgrading to 1.1.21Le on IPFRMT40, RPMs in slots 1-4 and 9-10 remain in FAILED state and cannot reboot. RPM in shows status “not responding”.
CSCdp60513	**delapsln/switchcc** on 8850 results in LOS/yellow alarm conditions.
CSCdp60546	Removal of aps backcard on active aps line, did cause an aps switch, however re-installation of aps backcard did not clear the backcard missing indication on the **dspapsln** display.

Bug ID	Description
CSCdp60551	**resetsys** caused 3000 connections to be deleted from an FRSM-2CT3 and connections on another FRSM_2CT3 to report as failed, whereas the PXM showed those same connections to be ok.
CSCdp60568	1121Le-**dspapsln** does not show an LOS condition
CSCdp62517	Support the commands for configuration and display of LMI timers: **cnflmitimer** and **dsplmitimer**.
CSCdp63038	**cnfapsln** with threshold=9 caused node lockup, interface/port loss & connections to be auto-deleted.
CSCdp63851	Manual switch allowed to W_Line in ALM condition.
CSCdm17963	Description The number of messages that the card can process is only 50. When there are 50 messages to log and if there is a task failure, it could cause a card reset. Symptoms 1. Watchdog timeout reset 2. Power reset If identify is caused by this bug, look at the log just before the card reset if there are many logs from the card that got reset, then it is mostly likely because of the log message queue becoming full. Workaround None.
CSCdm33570	The FRSM-2CT3 does not pause its **dsptotals** display prior to the Port Channel Table. This was specifically altered on the FRSM-8T1 to prevent the data scrolling off the screen.
CSCdm33677	Symptom: Unable to add ABR1 connection from PXMUNI to PXMUNI (3-segment) whenever the **fdrtrunk** has some of its bandwidth used-up due to other connections. Scenario: Using SV+ to add ABR1 connection. The SCR field is default to the maximum port bandwidth and not editable (**greyout**). If there is at least one other connection already added, the available bandwidth will be less than that of the port speed. The new connection addition will fail. Workaround: Use CLI to add connection (**addcon**) then modify the SCR to the desired value (within what is available) via **cnfupcabr** (another CLI command).
CSCdm33972	Error Log for Slot 7 shows A process that is not the owner is attempting
CSCdm47299	Cannot clear service module configuration, only if there are ports and connections in the configuration file. However, if there are none, we don't have to have the card in the slot.
CSCdm60296	When the wrong M value is used between AUSM and Kentrox, AUSM responds by generating an IMA port failure trap 50250.

Bug ID	Description
CSCdm60448	Symptom: x-bit setting after detecting line failure is not compliant with Bell core standards, i.e. one second. Condition: line failure (either LOS or LOF) Workaround: Currently there is no work-around to this problem.
CSCdm60455	Symptom: Unable to modify SRM line alarm configuration parameters Workaround: None.
CSCdm61185	Synopsis: One user changing directory causes all other users on that shelf to be in that new directory. Description: When one user changes his/her directory (from CLI), it causes all other users to be in the new directory. MGXSM 8850 CLI **cd** command is based on underlying vxWorks **cd** command. Unless the code for underlying **cd** command is changed (by WindRiver), the functionality of **cd** command on MGXSM-8850 cannot be altered. Workaround: None.
CSCdm73863	Customer would like the command line enhanced to force the IMA group into startup.
CSCdm73868	There are certain IMA only related failures that need to be mentioned when an IMA link fails and a 50251 trap is generated. For example, if differential delay is the cause of the link removal, it must be mentioned as the cause. There is currently no mechanism in axis that mentions this. There also needs to be a log message written to the axis log with the same reason code info. I envision a varbind called axisImaLinkFailureReason. It should include all applicable link failure reasons (e.g. diff delay exceeded, Phys Layer Problem, NE blocked, FE blocked...etc).
CSCdm73870	When the wrong M value is used between AUSM and Kentrox, AUSM responds by generating an IMA port failure trap 50250. The trap has a field called axisImaGroupFailureStatus. One of the options for this is “Invalid M value Far End”. When I simulate this condition, however, the 50250 trap populates this field with (8) “Insufficient Links NE.”
CSCdm73874	When a T1 line is restored on an AUSM card, we get a trap 50100. The definition of this trap in the MIB implies that it is obsolete in AXIS4 and that it is part of the bnm card....not the AUSM card. The firmware has to match the MIB or the MIB definition has to change to match the firmware.

Bug ID	Description
CSCdm73876	When removing a T1 from the far-end (i.e. CPE), a trap is generated labelled 50901 - bnmLineAlarm. This is inconsistent with the MIB definition. This trap should NOT be generated, for 2 reasons. One it is in the bnm category (and this is an AUSM card) and two it was supposedly obsoleted from AXIS4. Either that or the MIB definition must be changed.
CSCdm83469	T1 lines on an enabled T3 line on the FRSM-2CT3 card show up as disabled.
CSCdp07803	inbert not properly indicated when BERT test running on the port of a CESM-8T1.
CSCdp07834	Description The number of messages that the card can process is only 50. When there are 50 messages to log and if there is a task failure, it could cause a card reset. Symptoms 1. Watchdog timeout reset 2. Power reset If identify is caused by this bug, look at the log just before the card reset, and if there are many logs from the card that got reset, then it is probably because of the log message queue becoming full. Workaround None.
CSCdp10567	The ausm ima group remains in insufficient links, when it should return to operational state.
CSCdp14073	Need **dspabit** type command on Popeye
CSCdp20130	Telnet sessions fail after download of a private image.
CSCdp27035	When a slave connection is added in AUSM-8 without specifying the mastership flag as 2 (1- master, 2 - slave), and without specifying the remote connection ID, the connection addition goes through (taking the connection as Slave by default). At the same time, if the mastership flag is specified as 2 without specifying the remote connection ID, the connection addition fails and returns an error “Destination Unknown”. The connection addition should go through in this case too w/o having to specify the remote connection ID as this is a slave connection.
CSCdp27247	Reset of standby PXM which had the active aps line caused aps failures.
CSCdp32748	The traps 50102/50103 sent on loopback and loopback recovery is not in sync with MIB.They are meant for DS3 and not T1/E1. AUSM should send separate traps.
CSCdp32924	SYSTEM ERROR 21134 0 0 -1564757288 1 after **switchaps** s 1 after **cnfclksrc**
CSCdp33629	RPM card does not send func module insert trap after becoming active. while loading RPM image, which involves a reset of RPM. After some time emc removed the RPM card (popeye7.12) from card table. But did not repopulate it when the card came back and became active.
CSCdp34450	Traps not generated upon auto-deletion of PVCs. Connections on an AUSM were automatically deleted. There needs to be a TRAP generated by the PXM whenever an auto-delete occurs.
CSCdp34541	On **newrev** of popfmt42 (executed on slot 8) following upgrade to 1.1.12Km, the console received the following message many, many times on slot 7: spm: rmResyncEptBlk() ERROR - pPortBlk is NULL

Bug ID	Description
CSCdp34590	When adding 1:1 or 1:N redundancy, the check must be performed to make sure that there is no existing connections on the SM to be provisioned as redundant SM.
CSCdp34914	The ausm ima group remains in insufficient links, when it should return to operational state.
CSCdp35045	After a whole night running the script to **switchcc**, we found the channels are alarms. Par declares “local interface failure” for all connections even though some cards having data continuity well. From PXM the connections are indicated failed.
CSCdp35453	E1 clock with 120 ohms external clock does not sync up
CSCdp36477	switchcc on 8850 causes a Sig_F aps line switch on BPX
CSCdp36541	Manual aps switch results in log entries and traps
CSCdp37509	Failure of manual aps switch does not generate error messages
CSCdp37523	When a manual aps switch is executed (from w-->p or p-->w), trap # 50607 is sent out, however the reason associated with this trap is aps lockout.
CSCdp37538	Last user request affects aps switching. If **switchyred** is executed on the attached BPX, then aps switch will occur on the 8850 from one line to the other (known problem), if last-user-request=clear If last-user-request is not clear then 8850 will execute the last user request when a **switchyred** is performed on the BPX.
CSCdp38848	There should be 7 parameters for the CLI command **cnfchanpol**. But when we type **cnfchanpol**, the Syntax only gives us 6 parameters, missing one **egrat**. The correct syntax: **cnfchanpol** “Port.DLCI/chan_num cir bc be ibs detag egrat”
CSCdp38873	There are several traps that use a varbind called “listLinksPresentInImaGroup”. This varbind only lists the ACTIVE links in the IMA group. Need varbind for “ConfiguredLinks” in relevant axis traps.
CSCdp38986	FRPM-FRSM-2CT3:Frames leaving CT3 lines are not ok
CSCdp39867	Typographical error in sub net mask in bootchange command causes PXM to get stuck in reset loop.
CSCdp39978	VISM image needs to support 64 MB memory
CSCdp41865	**delln** will not work if aps configured on line, yet user is allowed to issue **delln**, and no warning is issued.
CSCdp42415	PAR changes for **clrsmcnf/restoresmcnf** functionality.
CSCdp42530	**switchyred** on BPX caused aps oscillation
CSCdp42644	Currently the slave end of an established connection can be deleted and re-added back without deleting the master end. This created two problems: 1. if the slave end is on a SM, then the CBC's RAM will not be reprogrammed correctly and as a result, traffic won't pass after slave re-add. 2. If the slave end is on PXM UNI, the RCMP will not be properly reprogrammed after the slave re-add.

Bug ID	Description
CSCdp43711	Problem: When adding a DAX connection between AUSM and PXM, the connection goes into alarm, although there are no line or port alarms. Symptoms: This problem has been observed when the AUSM end of the connection is added as a slave first, followed by adding the BBchan end on the PXM as master. We tried to duplicate this problem in the lab with 1.1.20 and made the following observations. 1. This problem occurred with AUSM, but not with CESM or FRSM-VHS 2. This problem only happened when the AUSM end was added as slave first. Workaround: 1. Add the PXM UNI end of the connection first, as master, followed by the AUSM end as slave. 2. Add the PXM UNI end of the connection first, as slave, followed by the AUSM end as master.
CSCdp43981	Allow SAR service rate change for VBR-RT and High Priority connections
CSCdp45202	Channels on AUSM automatically deleted require a trap to be sent
CSCdp45402	AUSM8 resets if you give line number greater than 8 in **upport/addport** command. There doesn't appear to be any error checking on the line number for upping/adding a port on the AUSM8 card. If I enter “upport 1 1 9” (or anything other than 1-8...) the card resets.
CSCdp48649	Symptom: Not able to add ABR1 connection from PXMUNI to PXMUNI (3-segment) whenever the **fdrtrunk** has some of its bandwidth used-up due to other conns. Scenario: Using SV+ to add ABR1 connection. The SCR field is default to the maximum port bandwidth and not editable (greyout). If there is at least one other connection already added, the available bandwidth will be less than that of the port speed. The new connection addition will fail. Workaround: Use CLI to add connection (**addcon**) then modify the SCR to the desired value (within what is available) via **cnfupcabr** (another CLI command).
CSCdp48888	Hot removal of the MGX-FAN assembly may cause fan monitoring circuitry components on the PXM1 to fail. This problem is observed 20% of the time when the MGX-FAN assembly is removed while the shelf is powered up. DSPSHELALM will show normal fan operation when in fact there is a fan failure.
CSCdp50661	When a **switchapsln** is executed, the line that the switch takes place from, reports a Sig_D condition. **dspbecnt** reports an error burst on both lines.
CSCdp54033	**restoresmcnf** allows user to not specify BRAM version causing slot corruption
CSCdp54784	The traps 50102/50103 sent on loopback and loopback recovery is not in sync with MIB.They are meant for DS3 and not T1/E1. AUSM should send separate traps.
CSCdp55190	When a back to back (DTE and DCE) cables connected, it shows LOS DCD and CTS are OFF for the port configured as DTE, for the DCE port it reports as RTS is OFF.
CSCdp55318	Inconsistencies are occurring when an **imagrp** is configured and a softswitch is performed. Re-starting the **imagrp** results in no change as well.

Bug ID	Description
CSCdp55390	CESM-T3/E3 Port failed even when the loop back is present.
CSCdp56075	**clrsmcnf** did not clear configuration from card with 3000+ connections.
CSCdp56099	**restoresmcnf** did not restore PXM end of feeder connections to FRSM-2CT3.
CSCdp56148	TFTP memory leaks over time
CSCdp56238	PAR needs to return proper error code in case of VPI_VCI_IN_USE
CSCdp56265	MGX switchcc, and BPX **switchyred** causes line failures and alarm reporting inconsistencies.
CSCdp56281	**sswitchyred** on BPX causes MGX aps lines to alternately go into Sig_D mode
CSCdp57534	CLI commands such as **dspclksrc/dsplmiloop** not available on a system w/ 1.1.21Lc
CSCdp58787	Manual **switchapsln** caused R_AM to be reported under status, though BPX does not show any alarms.
CSCdp58800	DI_MIS reported under APS_ST after 1.1.21Le upgrade.
CSCdp58811	When **clrsmcnf** executed on an empty slot, the slot shows reserved status instead of empty.
CSCdp59449	ESE (Egress service Engine) fails with variable frame-length traffic.
CSCdp60056	Symptom: Unable to modify NWIP. NWIP no longer matches cnfifip 37 and no **cnfnwip** command exists. Conditions: Occurs in releases > 1.1.11 Workaround: Downgrade to release 1.1.11 and change the **nwip** then upgrade back up.
CSCdp62227	Event log contains incorrect information about line numbers when manual aps switch is blocked due to line failure.
CSCdp62482	SM downloads fail intermittently.
CSCdp66005	Symptoms: PXM UNI connections added on a port which is in alarm remain in alarm even after the port alarm is cleared. Conditions: This problem is reproducible. If connections already existing on a clear port are put in alarm by causing a port alarm, the alarms get cleared on clearing the port alarm. Only connections added on a port in alarm remain in alarm state even after clearing the port alarm. This problem was first seen in image 1.1.21Lc. Workaround: Before adding UNI connections originating from any SM, make sure that the ports at the two endpoints are clear of any alarms. Alarms on a connection can also be cleared by doing an SM reset.
CSCdp65652	Event log and aps error count display incorrect when errors injected on one aps line.

Bug ID	Description
CSCdp65827	SD fixing should be done also by oc12
CSCdm81344	If you cannot overwrite on an existing RPM config file on PXM disk and are getting "%error opening c: filename (bad file number)" message then delete (rm <filename>) the existing file and then copy the new file.
CSCdp65808	During addition of line loopback, both pxms rebooted and partitioned. Lost configuration.
CSCdp65596	Symptom: bbChanConnDesc not set properly in PXM cards. When user does snmp query on this object.., valid information is not returned. Conditions: Always Workaround: None
CSCdp68360	Softswitch command should always be used per Cisco DE's, therefore customer is requesting that the switchback cli command be disabled.
CSCdp68343	Cannot do snmp walk on MGX for RPM connections on some slots.
CSCdp65673	**clrsmcnf** executed on non-red FRSM-2CT3 returned card to standby.
CSCdp50536	Failed trap needs to be sent out on heartbeat failure.
CSCdp58709	RPMs on IPFRMT40 failed from 1-4 and 9-10.
CSCdp04883	The extended ping command through a “cc” channel is not recommended for use as a “traffic generator.” This command oveloads the IPC channel with “!” to be printed out through the PXM. The IPC channel bandwidth is limited and without any means of traffic classification. Hence, if the channel is fully loaded it is expected that the other cc sessions will fall back to the PXM. From 1.1.21, there will also be an indication when this happens. This command can be used through the console port.
CSCdp52180	During FTP testing, with PVCs going from an AXIS endpoint to an MGX endpoint, the customer was observing the daily measurement, and found that the MGX is taking much longer to recover from an SRM failure. On an SRM switchover, hot standby needs to be implemented on SRM. The total switchover time in the current setup is greater than 2.5 seconds, which causes the T1 lines of the service module to go into alarm, and then the recovery time is also added. Hence the traffic loss. Workaround: If we increase the line integration time on T1 lines on the service module to 5 seconds from a default time of 2.5 seconds, lines don’t go into alarm.
CSCdp65557	Symptom: When you perform a softswitch from Primary AUSM to Secondary AUSM in non-bulk mode, if the system is very busy, the remote equipment may notice LOF or LOS. It is intermittent. Workaround: None.

Bug ID	Description
CSCdp65019	Symptom: If you “cc” to new active card after softswitch for AUSM-8T1/E1 cards in 1:N redundancy, you may observe some delay or telnet session may fall back. Workaround: Wait a minute and execute “cc” again.
CSCdp54765	Symptom: Unable to add port on an existing FRSM. Conditions: ASC and FRSM running 4.0.17 and 4.0.19 respectively. Workaround: Reset FRSM card in slot that experienced the problem.
CSCdm29969	Symptom: Some of the lines are going into alarm condition during the graceful upgrade of FRSM-8P card. Conditions: This problem is happening only when the VHS back cards are present on the shelf. Workaround: None.
CSCdp02900	Symptom: Customer indicates that DSPCHANS shows non-existing PVC's. Workaround: None.
CSCdp54781	Symptom: Loss of traffic for UBR connections on the AUSM card even when UPC is disabled. Conditions: For UBR connections on the AUSM card when UPC is disabled but CLP tagging option is enabled, cells are discarded (cells that are already tagged CLP1). Workaround: Disabling the CLP tagging option at this point causes data to start flowing.

Bug ID	Description
CSCdp51646	Symptom: Active line physically connected to deleted line is out of alarm. Conditions: On an AUSM shelf, connect line 1 to line 8. Then **addln** 1 and **addln** 8, and **delln** 8. Then reset the card. When the card becomes active, line 1 is out of alarm. Line 1 goes to alarm when the cable to line 8 is removed and recovers upon reattaching. Workaround: None.
CSCdp47079	Symptom: Policing, by default is turned off on certain PXM connections (VBR and ABR). Conditions: There is no specific environment that creates this problem. The problem was observed in the 1.1.20 release. VBR-rt conns. could not be added in this release. However, default policing on VBR-rt conns. was off in the 1.1.11Ja image. Workaround: The only solution as of now is to explicitly turn the policing on connections for which it is off by default.
CSCdm83319	Symptom: Command not available. Description: This is a CLI enhancement not a bug. Workaround: None.
CSCdk65545	Symptom: Secondary card fails to cover primary in 1:N redundancy when using 8-port back-cards and the primary is physically removed from the chassis. Workaround: Issue a soft reset via the **resetcd** command to switch between primary and secondary service modules.
CSCdp50541	Symptom: This problem might result in occasional slips seen on cesm connections. Workaround: Reconfigure the clock on the PXM if the PXM has Inband clock. Internal clock configuration does not affect the cesm connections.

Bug ID	Description
CSCdm54916	Symptoms: cesm-t1 with uni connections start showing ais-oam cell incrementing. This can be seen using dspchancnt. However, no traffic loss has been observed because of these ais cell increment. Conditions: This problem is intermittent. Workaround: There is currently no Workaround for this.
CSCdp60418	Workaround: This needs further investigation and currently does not have any impact on the functionality. There is no known workaround for this.
CSCdp63737	Workaround: This does not have any workaround. This needs further investigation and currently does not have any impact on the functionality.
CSCdp41488	Workaround: This does not have any workaround. This needs further investigation and currently does not have any impact on the functionality. This is a negative test condition.
CSCdm48519	Symptom: 140 second data hit when a FRSM-2CT3 gets reset. Condition: When non redundant card having more number of channels is reset, it takes more than two minutes for traffic continuity to work. Workaround: None.
CSCdm28951	Symptom: PXM having wrong A-bit status. Conditions: Unknown. Workaround: None.

Bug ID	Description
CSCdm44173	Symptom: Negative test failure. Changing the DC type results in connection being lost. Conditions: Changing the daughtercard type (e.g. oc3 to t3 or vice-versa) results in the PXM connections to be lost. This is due to the restore failure on a different physical interface type. Once the type of the daughtercard is changed, the line driver will not add the line due to a different card type. However, the higher modules (PAR, VSI), etc. must have a mechanism in case of a restore failure and should not result in connection deletion. Workaround: None.
CSCdm46394	Symptom: SYSTEM ERROR 20208 occurred during SM images upgrading to 10.0.02_01June99_1. Condition: This is a one-time occurrence. The following is observed: ############################ ###### SYSTEM ERROR 20208 1 1179649 ############################ Description: The above error indicates that PAR is receiving bulk interface trap before the interfaces known to PAR, so PAR is logging the bad interface system error. This is a rare race condition. Subsequently when the individual port trap comes, the interface will be created in PAR properly. Workaround: None. This error is not causing any problem as the port state will be updated correctly subsequently by the individual port trap.
CSCdp31887	Symptom: Protection APS line, when active, does not go into Sig_fail state when threshold is reached, and goes into P_B state when working line is made to go into Signal_Degrade
CSCdm79651	Symptom: Losing telnet session Condition: When dspcons is execution and there are around 1000 connections and the PAGEMODE is “OFF” Workaround: Avoid turning off PAGEMODE

Bug ID	Description
CSCdp03133	Symptom: ABCD bits are being corrupted through a CAS-to-CAS connection after the CESM has been reset. Workaround: Delete the MGX 8220 channels and re-add them.
CSCdp41924	Symptom: Could not access system due to task spawn failures
CSCdp20457	Symptom: **xnmbrowser** when used to perform snmp sets, gets and walks accepts any string for the community name, as long as the lengths of the correct name and the supplied name are the same and the first characters of the two names match. As a result, any name that matches the above described pattern will be accepted by the browser. The problem has been fixed and the fix will reflect in Rel 1.1.22.
CSCdp38636	Symptom: **dspcds** shows both primary and secondary sms as active even though one of the cards failed. Condition: pulling the function module during switch over Workaround: User has to pull out the front-card and insert it back. Currently there is no work-around for this.
CSCdp44377	Symptom: Egress Service Engine (ESE) fails while it's sending 244 bytes LMI Full status message. Condition: Annex-A or Annex-D should be enabled on at least one port with 46 connections. Workaround: User should disable LMI before adding 46th connection, add one more dummy connection to avoid 244 bytes packet and enabled LMI again.
CSCdp41980	Symptom: There is 1-N redundancy between ausm-8t1 in slot 5,6, & 13 with the ausm in slot5 & slot6 being the primary cards and slot-13 being the secondary card. when the cards in slot 5 & 13 are inserted and if 13 becomes the active card then, there is continuous cell-loss on the feeder connections associated with slot-6. The ausm-8t1 in slot-6 comes up in standby state and cc to logical active <slot-6> fails. Workaround: Do not try to make the secondary card to become active first.

Bug ID	Description
CSCdm05358	Symptom: When modifying a particular protected memory address on CESM8p which causes CESM HW watchdog reset, PXM got reset or lost SAR functionality. Description: When this happens, CESM sent a huge amount of traffic onto the management connection which is supposed to be used for intercard communication activities such as polling. This traffic causes the SAR to spend all its resources on doing the cleaning/flushing in ISR (interrupt service). This address should never be modified using the shellConn 'modify' command. It was used unknowingly in debug/test process. Workaround: Don't try to modify this protected address in shellConn (m 0xb300060) (0xb300060 is ATMizer CPU address for SAR on CESM8P). As a general guideline, shellConn commands like 'modify memory' should not be used by the customer.
CSCdm10722	Symptom/Condition: The install, newrev and commit commands for service module upgrade (there is no concept of downgrade here, as there exits only one valid, service module image on the disk at a time), do not follow, the same state machine as PXM commands in the current release. Hence, it is mandatory, that for service modules, these commands are given in the documented order, which is: (1) install (2) newrev (3) commit WARNING: If these, commands are not given in the above specified order, we can be in a situation where we can have two different images running on the primary/secondary combination. However, on the disk, there is only one valid image for the service modules. Workaround: Assuming, that these commands were given out of order, and now we have two different images, running, on primary / secondary combination. f1 - Old image version f2 - Newly downloaded image (1) Reset the secondary card, so that it comes up, with f2. (2) Do a softswitch between the two cards, so that secondary takes over and becomes active. At the same time, primary is reset, and comes up with f2. (3) If you may, you can now, do a softswitch, to revert back to the original primary, to restore normal state.

Bug ID	Description
CSCdp17253	This is related to an earlier bug CSCdm42508. Marketing requirement stated that the IMA feature should always be enabled on the card. And therefore any IMA operation on the card will go through irrespective of whether the IMA feature bit is ON or OFF. The change in CLI was left out in this earlier fix that was made in regards to this issue. Since the PXM reads the actual feature bits for **dspsmcnf**, and maybe since one of the cards had actually the IMA feature bit off, there was a mismatch between the PXM feature bits and those of the SMs (SM ignores the IMA feature bit). This caused the SMs to go into mismatch. A solution to avoid this problem is to make sure before switchover, that both the primary and secondary cards in the AUSM 1:N red group have the same “feature bits” enabled. i.e. If any of the feature bits is ON in either card, it should be ON on the other too. And even though the IMA feature bit is displayed ON, it will be safer to execute **dspfeature** 420 97/0 to turn the bit ON/OFF, so that the PXM sees a consistent view. This way, the cards won't go into mismatch state when they are swapped.
CSCdp65370	Symptom: When a T3 or E3 line indicates an alarm condition, the corresponding port state is not updated correctly. Port State is still displayed as active instead of “failed due to line”. Conditions: This happens whenever the line is in LOS alarm. This does not affect normal ATM side traffic flow or the Egress TDM traffic. Workaround: None.

Problems Fixed in Release 1.1.21

Bug ID	Description
CSCdp39955	Symptom Deleted channels on FRSM reappearing after the card is reset. Condition: When **delchan** was issued on the FRSM, FRSM did not send a disk update message to the PXM. this seems to be a FRSM-related issue.
CSCdp35989	Symptom: A flood of invalid LMI frames overruns the LMI queue causing random LMI failures on other ports. Condition: Flooding LMI frames on one port. Workaround: Stop the flood of invalid LMI messages.

Problems Fixed in Release 1.1.20

Bug ID	Description
CSCdk63920	Symptom Adding connection on PXM interface with VPI value larger than 255 will be successful, but the data will not flow. Condition On PXM BBIF (broadband interface), HW supports VPI range of 0-4095. However, there is a FW restriction which limits the VPI range to 0-255. The result of this further limit that a feeder connection originated from a service module (SM) can have a VPI value no larger than 255 on the feeder trunk; and a connection between a SM and PXM UNI can have a VPI value on the PXM UNI interface of no more than 255. Example 1: SM - PXM feeder trunk - bpx - bpx - PXM feeder trunk - SM VPI value [0-255] [0-255] [0-255] [0-255] Example 2: SM --- PXM UNI VPI range [0-255] [0-255] For all other DAX conns this is not an issue, since SMs only support VPI up to 255. Workaround: Use VPI 0 - 255 when adding connections.
CSCdm00200	Symptom: PCI errors cause VISM to reboot without displaying/logging error source!
CSCdm14439	Symptom: Cannot stop an UPLOAD data capture session once it begins.
CSCdm21316	Symptom: Can not do clrsmcnf for a VISM card
CSCdm33635	Conditions: During switchback, dspcds shows neither card as active. Symptoms: During switchback processing for a 1:1 redundant FRSM-2CT3, neither card is shown active; there is also no redundancy indication. Workaround: There is currently no Workaround for this.

Bug ID	Description
CSCdm33996	Symptom: Error log shows an invalid SSI_MQID of 0xFFFFFFFF has been passed as an argument to SSI calls by the **tSmterd** task. Conditions: This may occur if the user tries to "cc" to a standby PXM immediately after it becomes "standby". Workaround: The "cc" session with the above error will fail. The user can try again in 30 seconds after the CPU is free from the busy-burst right after the board turns "standby".
CSCdm35462	Symptom: Unable to add SRM lines from PXM in slot 8 Workaround: The Line and alarm related commands are modified to allow Slots 8, 16 and 32 as valid arguments if PXM at slot 8 is active. The following commands are affected: **addln** **delln** **cnfln** **dspln** **dsplns** **addlnloop** **dellnloop** **cnfsrmclksrc** **dspsrmclksrc** **dspalm** **dspalms** **dspalmcnt** **clralmcnt** **clralm** **dspalmcnf**
CSCdm38278	Symptom: CiscoView enables SRM line automatically if other parameters are altered. Conditions: Do a Line....config on any T3 line on an active SRM card. Verify if the line is disabled Try altering any of the parameters in the "Physical Line Config(dsx3)" menu. For example, change the line loopback from dsx3NoLoop to dsx3remotelineloop. The "Line Enable" parameter also automatically gets toggled and the line gets enabled.

Bug ID	Description
CSCdm40113	Symptom: It takes over 20 minutes for the FRSM-2CT3 cards to go active after a clrallcnf command has been issued. Conditions: Occurs when there are several FRSM-2CT3s in the shelf along with other service modules. Workaround: None. Wait for cards to go active. Further Problem Description: Creation of default service module config takes a long time and is processed one service module at a time. Subsequently, all the other SM wait to go active until the default config upload for all the service modules are done.
CSCdm45217	Symptom: SM shows misleading Reset reason
CSCdm45565	Symptom: Cannot add ATM-ATM connection due to wrong UPC values
CSCdm49847	Symptom: dsplns returns undefined symbol dsplns on FRSM-VHS2E3
CSCdm57910	Symptom: An Address load Exception occurred on the ACTIVE PXM.
CSCdm60448	Symptom: SRM-3T3 X-bits not in compliance with standards
CScdm61211, CSCdm61376	Symptom: dsptrkload does not show any information about trunk load.
CSCdm63240	Symptom: IMA ports on AUSM cards connected back to back via bulk distribution through SRM are disabled for 15 seconds on switchcc.
CSCdm64109	Symptom: AUSM does not report an LOS when link is deleted from SRM
CSCdm66841	Symptom: 0 Slot ID sent from Atmizer to CB Slave
CSCdm68837	Symptom: Softswitch on the FRSM-2CT3 cards takes 2 minutes per 100 connections to execute.
CSCdm68952	Symptom: **runslftstno** 5 run on AUSM shows Disk Data Corruption even though test passes
CSCdm73833	Symptom: **Dspchancnt** on AUSM should show current ingress queue length

Bug ID	Description
CSCdm73841	Symptom: Missing IMA link counters in AUSM CLI.
CSCdm74358	Symptom: k_chanCntGrp has not been implemented in VISM 1.0
CSCdm75342	Symptom: After resetcd, all configuration for HS2 card is lost
CSCdm76573	Symptom: dsx3LineLength setting is not working for FRSM-2T3/E3
CSCdm77618	Symptom: PXM Core Redundancy is lost if the right/bottom latch is opened and closed
CSCdm78193	Symptom: Traffic generation functionality does not work in FRSM 8E1
CSCdm78448	Symptom: FRSM-2CT3 card displays 'temporarily out of buffers' when scrolling through a dspcons display.
CSCdm80527	Symptom: Cannot set dsx3PlcpPayloadScramble from SNMP.
CSCdm80773	Symptom: clralm/clralms command does not provide help syntax
CSCdm81358	Symptom: Softswitch on AUSM causes remote end to go in and out of alarm. Condition When a softswitch is done, the DS1 lines are through the distribution bus (SRM) and the SRM now has to send the data to a different card (Redundant card), this causes a glitch (errors) in the DS1 lines. The AIM Group goes into failed state because of these errors. When the AIM Group goes into failed state the channels go into alarm and so the remote end of the channel also goes into alarm. When the AIM Group recovers, the channels come out of alarm. Workaround: Do not report the port alarm immediately to the connection manager. Integrate the port alarm for 't' seconds. If the alarm persists even after time 't', inform connection manager. Else, connection manager need not know about alarm at all. The main disadvantage of connections going into alarm at all. The main disadvantage of connections going into alarm, is that recovery time is in seconds. So delay in data transfer is going to be more. This is avoided by masking the port alarm to connection manager.
CSCdm81375	Symptom: Phantom channels on cards that don’t have lines or ports enabled
CSCdm84845, CSCdm84850	Symptom: Card Information field (Card Reset Reason) is not consistent with the CLI.

Bug ID	Description
CSCdm86362	Symptom: Comfort Noise is not turned ON when VAD is turn ON.
CSCdm88721	Symptom: In a shelf with core card redundancy, both PXMs got reset while executing switchcc.
CSCdm90248	Symptom: All the channels do not come out of alarm after a hot standby switchback Description: The active card and the standby card can have different configurations if the line is in clear state, because no line clear trap would be sent after the active trap. Resolution: The system now clears the port state after receiving functionModuleActive trap.
CSCdm90295	Symptom: Remote loops put up are not displayed by dspln command
CSCdm91925	Symptom: Some commands execute after entering only one letter. Description: The 3 commands actually correspond to: f = format s = saveallcnf b = bootChange The first one “f” is the most harmful. this could format the PXM hard-disk. The next two are not harmful though. It appears that these three commands appear first among all the commands that begin with these letters. This is also found to be true on the Popeye shelf. This is not found with all letters. The CLI Command Parser searches for the closest match if it cannot find the exact match.Sometimes there is only one command beginning with certain characters; like there is only one command beginning with “f” i.e. format disk. Hence that command is executed when only one alphabet is typed.In this case to let the user know what command is executed, the executed command name is displayed.

Bug ID	Description
CSCdm92288	Symptom: On removal of the active back-card, redundancy switchover fails in hot-stdby Condition: Resetting the standby card while it is being configured to be a hot standby. In this case, Primary (17) is active and Secondary(19) is in HotStandby. The backcard of 17 was removed and NOT reinserted. This causes switchover to 19, which becomes active. The PXM now tries to make 17 to be a Hot Standby and to do so downloads the PRI file to 17. While the PRI download is in progress, the backcard of 17 is reinserted, causing 17 to reset and the PRI download to fail. Workaround: Remember that both inserting and removal of backcards cause VHS cards to reset. Allow standby cards to become hotstandby by waiting for a few minutes before resetting them. You can find out if the card is in hot standby by executing the **dsphotstandby** command on the PXM.
CSCdm92305	Symptom: **dspcds**, **dspred** & **dsphotstandby** commands display inconsistent card states
CSCdm93789	Symptom: Memory leak causes SM to mismatch after running resetcd.
CSCdm93970	Symptom: Image mismatch when downloading firmware to standby PXM in backup boot.
CSCdm94630	Symptom: Multiple traps generated due to reset of standby PXM.
CSCdp00721	Symptom: Redundant active CT3 card comes up in mismatch & standby doesn't take over
CSCdp00894	Symptom: tftp put command creates the wrong file name when option POPEYE@PXM.FW used
CSCdp00909	Symptom: Customer needs a way to identify node via CLI as SES
CSCdp00911	Symptom: APS lost track of which PXM is active and won't allow commands on active PXM
CSCdp02813	Symptom: FRSM-VHS - tstcon/tstdelay to UXM UNI port cons fail nearly every time
CSCdp04258	Symptom: PXM drops incremental updates while SM goes to HotStandby

Bug ID	Description
CSCdp04475	Symptom: Rounding off errors occur when CWM and the CLI are used together to configure a ForeSight connection. Conditions: Refer to Eng-Note for the details. Workaround: Since the CLI takes any value greater than the CIR converted to CPS (with rounding off errors. e.g 1333cps for a 512k connection), to avoid the problem user should do the rounding off manually and give it in the CLI.
CSCdp05115	Symptom: Cell-loss on CESM-feeder connections after new-rev command execution
CSCdp07010, CSCdm57910	Symptom: Could not configure i/f as trunk initially until background check failed
CSCdp08034	Symptom: Timezone gets reset back to GMT after PXM FW upgrade.
CSCdp08186	Symptom: PXM went into a constant reboot state after a resetsys was issued. Conditions: The contents of the hard disk is corrupted on two rpm connections: vpi/vci 0/97 and vpi/vci 0/320. 0/97 has illegal port number 96. 0/320 has illegal port number 319. Both of these cause exception when trying to access the port block structure, thus result in reset. The prevention to skip the access to illegal port block is already in 1.1.12. However the root cause of the corruption is still under investigation. Workaround: Due to the corruption in the hard disk, when the PXM is going through a reset, it will be trapped in this reset loop. In some occasion, with redundant PXMs, the reset loop stops after 3-5 iterations. If it does not breakout of the loop by itself, the following command must be entered at the shellConn prompt after VxWorks banner appears: dbmClrAllCnf <ctrl> <x> (to reset the card) The system will come up with empty database, except nodename and ip address. The configuration has to be added. Since the saved configuration has the corrupted contents from the hard disk, performing “restoreallcnf -f filename.zip” will encounter this exception again during the channel mib parsing. This result in reset loop.
CSCdp11717	Symptom: Security risk with hard coded community strings for SNMP access Workaround: None.

Bug ID	Description
CSCdp11982	Symptom: OC3 jitter higher than the normal standards specs
CSCdp12285	Symptom: FRSM-2CT3 card failed during data transfer
CSCdp12705	Symptom: Standby VHS card not taking over when the ACTIVE VHS card is reset.
CSCdp14439	Symptom: clrallcnf fixed so that it does not default the netmask.
CSCdp15333, CSCdp15346	Symptom: EIR MIB Implementation for 0 CIR connections
CSCdp15490	Symptom: dspcd got wrong backcard NVRAM info

CSCdp16649	Symptom:
	System reset caused during upgrade to 1.1.11Jd
	Conditions:
	Upgrade was being performed from 1.1.11Ja to 1.1.11Jd.
	The **install 1.1.11Jd** command was executed on slot 8; slot 7 came up in hold state The **newrev 1.1.11Jd** command was executed on slot 8, at which point the shelf reset. After the reset, Slot 7 (1.1.11Jd) came up active, slot 8 was in hold (1.1.11Ja). When the **dsplog** command was executed, it could not read the last file. This file was manually transferred over, its contents are as follows:
	dsplog
	`^M10/08/1999-12:02:19 08 tTnCmdTsk01INST-7-COMMAND1 install 1.1.11jD`
	`^M10/08/1999-12:02:25 08 tTnCmdTsk01INST-7-COMMAND1 install 1.1.11Jd`
	`^M10/08/1999-12:02:27 07 tPMM PMM-7-RST_REQ Reset request: , 1`
	Workaround:
	None.

Bug ID	Description
CSCdp17156	Symptom: Removal of active PXM backcard, caused APS switch as expected, but clocking reverted to internal oscillator Conditions: XM=1.1.11Jd System is configured for APS. Primary clock source is set to derive from uplink trunk. When the line module backcard was removed from the active PXM, APS switch took place to the protection line as expected. However the clock source (as viewed from **dspcurclk**) reverted to the internal oscillator, instead of continuing to derive from the protection line. It stayed on the internal oscillator until the backcard was re-installed on the active PXM - the aps line continued to stay on protection because aps was configured as non-revertive. Workaround: Do not remove back card.
CSCdp17292	Symptom: FRSM-2CT3 card fails after multiple softswitch
CSCdp18806	Symptom: Disk cache not updated when boot fails
CSCdp26382	Symptom: Protection APS line, when active, does not go into Sig_fail state when threshold is reached, and goes into P_B state when working line is made to go into Signal_Degrade.
CSCdp26521	Symptom: Secondary card went into FAILED state while upgrading from 1.1.12Kh to Kj.
CSCdp27483	Symptom: SPM null pointer fixes
CSCdp28741	Symptom: dsptrkload does not show any information about trunk load
CSCdp29095	Symptom: PXM1-OC12 config upload file incorrect

Bug ID	Description
CSCdp29275	Symptom: System error msgs 21205, 21202, 20617 & 20420 Condition: The delay is due to the creation time of the FRSM-VHS database on the disk. This delay is only introduced the first time the card is inserted or after clrallcnf. Workaround: Wait for card to go active. The Hot Standby Feature has been introduced for VHS to mitigate this problem. With a hot standby the switchover happens in less than one second.
CSCdp29597	Symptom: Software Exception: Vector 2 EPC:0x8003580c ADR:0x0e1d2ea0
CSCdp29775	Symptom: Several FRSM-8T1 &VHS Service Modules were in failed/stdby after upgrade and **resetsys** Condition: The upgrade procedure went through fine but after executing the **resetsys** command the FRSM-8T1 & VHS service modules which had redundancy came up in failed state. Workaround: None.
CSCdp35045	Symptom: All the connections declared failed after switchcc Condition: After switchcc, channels are in alarm. PAR declares “local interface failure” for all connections even though some cards still have data continuity. From PXM the connections indicate “failed”.
CSCdp41514	Symptom: Some conns goes to FAILED (with error Local I/F failure) even though I/F is UP Workaround: When the connection state is seen to be incorrect immediately after provisioning as described in this bug report (e.g. FAILED when it should have been OK), following is a workaround to rectify the status: Delete Master End and Slave End Provision Slave End and Master End Check that connection Status is OK (assuming there are no other genuine reasons for the connection status to be failed - like interface failure, alarm due to AIS).
CSCdm83469, CSCdp08711	Symptom: Lines on FRSM get disabled

Problems Fixed in Release 1.1.01

One of the slots on the node had a CESM-8E1 card with some connections. The connections, ports and lines on the CESM were deleted and it was replaced with an AUSM-8T1 card.The AUSM card went to mismatch state. On trying to execute the **clrsmcnf** command the following error message was seen: flyers4.1.7.PXM.a > **clrsmcnf** 20, Do you want to proceed (Yes/No)? Yes Command Failed: Resources exist on card (CSCdm29289).

Happens on an MGX 8850 switch with two PXMs (Core Redundancy). If the Active PXM while synchronizing the databases to Standby, resets, then the Standby PXM goes to Fail State. The reset PXM comes up as Active and will show the other PXM slot as Empty (CSCdm30193)

ShelfIntegrated alarm becoming Major or Minor either after switchcc or **resetsys**. (CSCdm33756)

One connection, CESM-PXM UNI ended up deleted in CESM, but SPM still has some incomplete data structure. Since there is only one connection per port for the CESM, and the connection is in such state that can not be removed or re-added, the port and its bandwidth become unusable (CSCdm33289)

Configuring the DS3 framing format on an FRSM-2CT3 to M13 does not permit the card to operate correctly with other devices using that framing format. (CSCdm35575

When modifying a particular protected memory address on CESM8p which causes CESM HW watchdog reset, PXM got reset or lost SAR functionality. (CSCdm15367)

Adding or modifying a connection to an RPM fails if the RPM enable password differs from the password that Conn MGR has cached. Example: A connection to an RPM is configured, then the enable password is changed on the RPM -- any subsequent connection adds or changes fail because of a bad enable password. (CSCdm34114)

When modifying the bandwidth allocation (usually from a smaller percentage to a much bigger one) of a port with **cnfport** command, it is not always possible to create more connections under that port. (CSCdm32894)

The standby PXM console is not enabled for use. Downlevel PXM board (CSCdm34030)

Adding connections through a conn proxy script. Card went to failed state after adding around 700 connections. (CSCdm32773)

SMs are shown in failed state though physically they are active. This was observed for FRSM8p and FRSM-VHS in slot 5 and 6 and 1. (CSCdm21684)

While using a script to do stress switchcc test, there is a one time occurrence where it was found that the original active card did not come back as standby, but went to fail state. (CSCdm35298)

The problem is related to the PVC's traffic parameters. We are still investigating what the PCR, average, and burst values should be set to for VBR connection. This values are related to nature of the traffic which is sent to the RPM. (CSCdm35352)

When the connection is deleted, the trap does not go to SV+. (CSCdm27489)

Major differences when add vbr.2 connections on PXM by CLI and CWM (CSCdm28075)

If **cnfcon** command is given with the CIR value of less than 8 and greater than zero then the command is never completed and later on one cannot do any modifications, display, etc. (CSCdm34047)

Restoreallcnf does not restore the saved config. Occurs when restoring a configuration taken from another physical shelf. The card the **restoreallcnf** was done on will not become active but the other card will which contains the previous configuration. (CSCdm37114)

AUSM Connection addition fails for VP connection from CWM. (CSCdm36674)

At low frequencies, the jitter characteristics does not fully comply with the standards. (CSCdm38833)

Problems Fixed in Release 1.1.00

Stand-alone Statistics collection does not work if the PXM is in slot 8 (CSCdm20017).

There is no need to issue the **syncdisk** and **shutdisk** commands before removing the PXMs. The **system** quiesces the disk by detecting the removal of the PXM board and flushes the write buffers to the disk and **puts the PXM in sleep mode**. This disables any further hard disk access since it locks the acctuator. **When the card is reinserted the PXM automatically comes out of sleep mode.**

In Release 1.0.00 Configuration Save and Restore works only for the same firmware image even if there are no database changes from one version to the other version. In Release 1.1.00 Configuration Save and Restore can be done on different firmware images if the firmware images have compatible databases.

VPI range was limited to 0 to 255 on PXM UNI and NNI on the feeder ports in Release 1.0.00. There is no VPI range limit in Release 1.1.00. (CSCdk63920)

A flood of SNMP requests can cause SNMP and CLI to be unavailable for some time (CSCdm13663).

After a user adds PXM UNI channel, VCC with VCI=0, user cannot add any more VCCs with same (CSCdm14123)

Was unable to delete a VP connection for PXM UNI channels using CWM (CSCdm15120)

While executing “cc” command to a Service Module (SM) on a telnet session, the telnet session hangs, and the console of the active PXM card has Tlb load exception message. (CSCdm15150

Telnet session gets cut off without any error messages or obvious network problem (CSCdm15166)

When adding connections using scripts utilizing Conn-Proxy, without delay between two connection additions, and when there are line alarms at either endpoint, there is a probability that the CESM card may reboot. (CSCdk12363)

FRSM-2CT3 is dropping frames due to frame aborts detected by HDLC controller. (CSCdm13123)

Traffic on connection on FRSM-8T1E1 stopped after removal and insertion (CSCdm18521)

Cannot have more than one session on FRSM-VHS (CSCdk77924)

A channel is shown in alarm even though there is no line alarm and port alarm locally on the FRSM8p service module, and there is no remote alarm on the far end of the connection. (CSCdm14383)

Port statuses at service module site might be different with those at PXM and VSI controller site.(CSCdm15183)

A port was seen that had no alarm on FRSM8p, but **dspparifs** on PXM CLI shows the interface of this port in fail state. (CSCdm15620)

Attempt to configure the external clock source using the label 0.33 does not work. (CSCdm15669)

Some FRSM-8T1E1s don’t come up when the MGX8850 is power cycled. (CSCdm16401)

Using script to add ports on FRSM8P Service Module card, in case a port addition fails, FRSM8 is not backing off properly and leave the port still added locally on the card even though the port is not added on PXM side and PAR (the interface corresponding to this port will not show up in **dspparifs** CLI on PXM, but **dspports** on SM shows the port added). (CSCdm03268)

Connections in alarm while lines are OK. (CSCdm10735)

Service module & the PXM reserve different bandwidth for the same connection.(CSCdk92115)

The card, after power recycle does not come up. It gets stuck in standby. (CSCdm10416)

When removing a service module or removing a line, VSI controller prints out “swerr 20208" sometimes. (CSCdm16902)

When an MGX 8850 shelf with CESM-8T1E1s is left running for over a day with Configuration Uploads going continuously, there is a possibility of allocated large buffers not getting released. (CSCdm17868)

The interface state (port state) is inconsistent between the VSI controller and the platform as well as that at service module. (CSCdm16033)

A tftp download of backboot displays an S-objlib_OBJ_UNAVAILABLE error (CSCdm16295)

While RPM is reloading after a card reset or as a result of card removal, PXM gets reset intermittently. (CSCdm15040)

CLI commands on a PXM hang after aborting a command using Ctrl-C. (CSCdm16726)

PXM reset when OC12 trunk back card was inserted. (CSCdm20010)

Broad band connection statistics fail when the PXM is in slot 8 and statistics are enabled (CSCdm20017)

Problems Fixed for RPM in 12.0.5T1

These anomalies are fixed in IOS 12.0.5T1. For generic IOS issues, refer to the 12.0.5T1 release notes.

- CPUHOG and Traceback error during connection synch-up. (CSCdm56618)
- RPM performance degrades when two RPMs are side-by-side (CSCdk93628)
- c75 int tunnel <num> shortcut fails create when num is slot number (CSCdm26198)
- Executing show diag 3 resets RPM (CSCdm64903)
- Copy RPM config to c: drive overlay problem (CSCdm63212)
- Connection only on RPM and not on PXM shown as mismatch (CSCdm47650)
- RPM interface name changes are inconsistent (CSCdm49834)
- Dynamic VCD stored on the PXM disk cause connection mismatch (CSCdm72383)
- Spurious memory access while inserting FE card (CSCdm51327)

Problems Fixed for RPM in 12.0.4T

These anomalies are fixed in IOS 12.0.4T. For generic IOS issues, refer to the 12.0.4T release notes.

- RPM in adjacent slots share single OC3 cell-bus bandwidth, which cause a 30% drop in throughput at line speed. It is recommended not to use RPM in adjacent slots at high input rate configurations (CSCdk93626).
- Only VCI zero is supported for VPI greater than zero, therefore VP connections are limited to one VC.
- Under certain unknown condition RPM may not get the MAC addresses from the PXM. The occurrence of this conditions is quite low. It is recommended to set up the MAC address manually when such condition is detected. (CSCdk53731).
- IPC buffers exhaust after executing CC command around 70 times. This requires a reload of RPM to re-establish IPC connectivity to PXM. This condition does not cause any interruption of traffic (CSCdk89950).

- Running an extended ping from an IPC console connection may overload the IPC channel (CSCdk76558)
- Virtual template is not supported through SNMP MIB.
- The **tstcon** command to RPM is not supported in this version (CSCdm00845)
- SNMP over IPC channel is not supported in this version, therefore CV application is not supported (CSCdk47301).
- Reported CRC error counts may not be correct in this version (CSCdk70267)
- **Tstcon** option on CMGUI for PXM-FR connection is not displayed (CSCdk71714)

Compatibility Notes

1. MGX 8850 Software Interoperability with other products

MGX 8850 Platform Software:	PXM 1.1.25
MGX 8220 Firmware:	Rev: 4.1.09 or 5.0.15(Refer to the MGX 8220 Release Notes)
Compatible Switch Software:	Switch software 9.1 release and switch software 9.2 (9.2.34) release for BPX and BXM firmware—MFE (Refer to the Switch Software Release Notes)
Network Management Software:	CWM 9.2.09 (Refer to the CWM 9.2.09 Release Notes. CWM 9.2.09 is conditionally available June 30, 2000.)
CiscoView:	CV 4.2 (2.09) Refer to the CWM 9.2.09 Release Notes.

2. Software Boot and Runtime Firmware Requirements:

Board Pair	Latest Boot Code Version	Minimum Boot Code Version	Firmware	Latest Firmware Version	Minimum Firmware Version
PXM1	pxm_bkup_1.1.25.fw	1.1.24	pxm_1.1.25w	1.1.25	1.1.25
PXM1-2-T3E3	pxm_bkup_1.1.25.fw	1.1.24	pxm_1.1.25.fw	1.1.25	1.1.25
PXM1-4-155	pxm_bkup_1.1.25.fw	1.1.24	pxm_1.1.25.fw	1.1.25	1.1.25
PXM1-1-622	pxm_bkup_1.1.25.fw	1.1.24	pxm_1.1.25.fw	1.1.25	1.1.25
AX-CESM-8E1	cesm_8t1e1_CE8_BT_1.0.02.fw	10.0.02	cesm_8t1e1_10.0.13.fw	10.0.13	10.0.12
AX-CESM-8T1	cesm_8t1e1_CE8_BT_1.0.02.fw	10.0.02	cesm_8t1e1_10.0.13.fw	10.0.13	10.0.12
MGX-AUSM-8E1/B	cesm_t3e3_CE8_BT_1.0.02.fw	10.0.02	ausm_8t1e1_10.0.13.fw	10.0.13	10.0.12
MGX-AUSM-8T1/B	cesm_t3e3_CE8_BT_1.0.02.fw	10.0.02	ausm_8t1e1_10.0.13.fw	10.0.13	10.0.12
AX-FRSM-8E1	frsm_8t1e1_FR8_BT_1.0.02.fw	10.0.02	frsm_8t1e1_10.0.13.fw	10.0.13	10.0.12
AX-FRSM-8E1-C	frsm_8t1e1_FR8_BT_1.0.02.fw	10.0.02	frsm_8t1e1_10.0.13.fw	10.0.13	10.0.12
AX-FRSM-8T1	frsm_8t1e1_FR8_BT_1.0.02.fw	10.0.02	frsm_8t1e1_10.0.13.fw	10.0.13	10.0.12
AX-FRSM-8T1-C	frsm_8t1e1_FR8_BT_1.0.02.fw	10.0.02	frsm_8t1e1_10.0.13.fw	10.0.13	10.0.12
MGX-FRSM-HS2	frsm_vhs_VHS_BT_1.0.02.fw	10.0.02	frsm_vhs_10.0.13.fw	10.0.13	10.0.12
MGX-FRSM-2CT3	frsm_vhs_VHS_BT_1.0.02.fw	10.0.02	frsm_vhs_10.0.13.fw	10.0.13	10.0.12
MGX-FRSM-2T3E3	frsm_vhs_VHS_BT_1.0.02.fw	10.0.02	frsm_vhs_10.0.13.fw	10.0.13	10.0.12
MGX-FRSM-HS1/B	frsm_hs1_HS1_BT_1.0.02.fw	10.0.02	frsm_hs1_10.0.13.fw	10.0.13	10.0.12
MGX-CESM-T3E3	cesm_t3e3_CE8_BT_1.0.02.fw	10.0.02	cesm_t3e3_10.0.13.fw	10.0.13	10.0.12
MGX-VISM-8T1	vism_8t1e_VI8_BT_1.0.02.fw	1.0.02	vism_8t1e1_VI8_1.5.05.fw	1.5.05	1.5.04
MGX-VISM-8E1	vism_8t1e_VI8_BT_1.0.02.fw	1.0.02	vism_8t1e1_VI8_15.05.fw	1.5.05	1.5.04

1. RPM Boot and IOS Image.

Board Pair	Latest Boot Code Version	Minimum Boot Code Version	Firmware	Latest Firmware Version	Minimum Firmware Version
MGX-RPM-64M/B	rpm-boot.mz.121-1.T	rpm-boot.mz.120-7.T	rpm-js-mz.121-3.T	12.1(3)T	12.0(7)T
MGX-RPM-128M/B	rpm-boot.mz.121-3.T	rpm-boot.mz.120-7.T	rpm-js-mz.121-3.T	12.1(3)T	12.0(7)T

F/W Image(1.1.25)	File Size
ausm_8t1e1_10.0.13.fw	1162600
cesm_8t1e1_10.0.13.fw	674624
cesm_t3e3_10.0.13.fw	605200
frsm_8t1e1_10.0.13.fw	799596
frsm_hs1_10.0.13.fw	761192
frsm_vhs_10.0.13.fw	934932
pxm_1.1.25.fw	2184508
pxm_bkup_1.1.25.fw	1274260
pxm_sc_1.1.25.fw	2182628

Boot Image(1.1.25 and 1.1.30)	File Size
ausm_8t1e1_AU8_BT_1.0.02.fw	377836
cesm_8t1e1_CE8_BT_1.0.02.fw	264592
cesm_t3e3_CE8_BT_1.0.02.fw	303936
frsm_8t1e1_FR8_BT_1.0.02.fw	297988
frsm_hs1_HS1_BT_1.0.02.fw	293052
frsm_vhs_VHS_BT_1.0.02.fw	467156

Note 1.1.22 platform image is co-required with the specia120-5.XT image.

Compatibility Matrix

This multiservice gateway comparison matrix is designed to identify capabilities supported in the MGX 8220, 8230, 8250 and 8850 platforms.

Card Slot Capacity	**8220**	**8230**	**8250**	**8850, PXM1**
Slots for Processor cards	2 single height	2 double height	2 double height	2 double height
Slots for Service modules	10 single height	8 single height or 4 double height	24 single height/ 12 double height combination	24 single height/ 12 double height combination
Slots for SRM (Service resource module) cards	2 single height	2 single height	4 single height or 2 double height	4 single height or 2 double height
Total number of Slots	16 single height (2 slots reserved for BNM)	14 single height or 7 double height	32 single height or 16 double height	32 single height or 16 double height
Physical Attributes	**8220**	**8230**	**8250**	**8850**
Height (in inches)	8.75	12.25	29.75	29.75
Width	17.45	17.72	17.72	17.72
Services	**8220**	**8230**	**8250**	**8850**
IP VPNs		Future		
Voice		Future		
ATM				
Frame Relay				
PPP Access		Future		
Frame Relay-to-ATM network interworking				
Frame Relay-to-ATM service interworking				
Circuit emulation				
Local Switching	**8220**	**8230**	**8250**	**8850**
	No	Yes	Yes	Yes
PNNI Routing	**8220**	**8230**	**8250**	**8850**
	No	Future—will require Upgrade	Future—will require Upgrade	Future on PXM1
BPX Feeder	**8220**	**8230**	**8250**	**8850**
	Yes	Yes	Yes	Yes
Automatic Protection Switching (APS 1+1)	**8220**	**8230**	**8250**	**8850**
	No	Yes	Yes	Yes
Switching Capacity	**8220**	**8230**	**8250**	**8850**
	320Mbps	1.2Gbps	1.2Gbps	1.2Gbps
Trunk Interfaces	**8220**	**8230**	**8250**	**8850**
T3/E3	1	2	2	2
OC-3c/STM-1	1	4	4	4

Card Slot Capacity	8220	8230	8250	8850, PXM1
OC-12c/STM-4		1	1	1
n x T1/E1				
Front Cards	**8220**	**8230**	**8250**	**8850**
AX-FRSM-8T1				
AX-FRSM-8E1				
AX-FRSM-8T1-C				
AX-FRSM-8E1-C				
MGX-FRSM-HS2				
AX-FRSM-HS1				
MGX-FRSM-HS1/B				
MGX-FRSM-2T3/E3				
MGX-FRSM-2CT3				
AX-AUSM-8T1				
MGX-AUSM-8T1/B				
AX-AUSM-8E1				
MGX-AUSM-8E1/B				
AX-IMATM-8T1/B				
AX-IMATM-8E1/B				
AX-CESM-8T1				
AX-CESM-8E1				
MGX-CESM-T3E3				
AX-SRM-T1E1/B				
AX-SRM-3T3				
MGX-SRM-3T3/B		Future		
MGX-VISM-8T1		Future		
MGX-VISM-8E1		Future		
MGX-RPM-128M		Future		
MGX-RPM-400M-256		Future		
MGX-RPM-400-512		Future		
MGX-SRM-3T3/C		Future		
Backcards	**8220**	**8230**	**8250**	**8850**
AX-SMB-8E1				
AX-RJ48-8E1				
AX-RJ48-8T1				
AX-R-SMB-8E1				
AX-R-RJ48-8E1				
AX-R-RJ48-8T1				

Card Slot Capacity	8220	8230	8250	8850, PXM1
MGX-12IN1-4S				
MGX-BNC-2T3				
MGX-BNC-2E3				
MGX-BNC-2E3A				

Special Installation and Upgrade Requirements

Existing customers should use the upgrade procedure on page 92 to upgrade from 1.1.12/1.1.21/1.1.22/1.1.23/1.1.24 to 1.1.25. For new customers the image will be pre-installed as 1.1.24 and they need to use the PXM installation procedure to upgrade to future maintenance releases.

No graceful downgrade is supported from 1.1.25 or any higher version to any down level version of software below 1.1.22 because of MIB changes. This also implies that if you have to abort after newrev command (and the commit command), you have to do an ungraceful downgrade.

An upgrade from 1.1.25 to 1.1.30 for 8230 nodes is (not generally available as of October 2, 2000) not available due to a software problem. The solution to this software problem will be available in a 1.1.3x Release.

Note Direct upgrade from 1.1.12 to 1.1.25 is not supported. If you must upgrade from 1.1.12 to 1.1.25, first upgrade from 1.1.12 to 1.1.22 and then from 1.1.22 to 1.1.25.

Below is the procedure for ungraceful downgrade:

Step 1 If they have a saved configuration then do:

abort

reload old firmware code (boot code can stay at 1.1.23)

restoreallcnf

Step 2 If they don't have a saved configuration then do:

abort

reload the old code

goto shellConn

setPXMPrimary on both boards

issue **clrallcnf** on the active

Single PXM Installation Procedure

Step 1 Save you current configuration.

```
Saveallcnf
```

Step 2 Get the filename by listing the CNF directory:

```
node-prompt> ll "C:/CNF"
  size          date       time       name
--------       ------     ------    --------
     512    APR-08-1999  08:16:18   .                 <DIR>
     512    APR-08-1999  08:16:18   ..                <DIR>
     512    APR-09-1999  05:26:42   TMP               <DIR>
   45433    APR-09-1999  05:28:42   NODENAME_0409990528.zip
   45433    APR-09-1999  05:28:42   NODENAME.zip
In the file system :
    total space :  819200 K bytes
    free  space :  787787 K bytes
```

Step 3 On the workstation, upload the saved configuration to the workstation:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tftp> get CNF/NODENAME_0409990528.zip
Received 45433 bytes in 0.4 seconds
```

Step 4 Download the 1.1.25 PXM runtime image to the PXM.

```
tftp <node_name or IP address>
bin
put 1.1.23.fw POPEYE@PXM.FW
quit
```

Step 5 Download the `ComMat.dat` file to the `C:/fw` directory of the Active PXM. Use the tftp **put** command:

```
tftp <node_name or IP address>
bin
put ComMat.dat
quit
```

Step 6 On the PXM type the following when the transfer is done:

```
copy ComMat.dat /FW/ComMat.dat
```

Step 7 Execute the **install 1.1.25** command.

Step 8 Answer **Yes** to the question the install command will ask.

Installation Procedure For Redundant PXMs:

This section applies to upgrades from 1.1.10 to 1.1.11 or 1.1.12 or 1.1.21 or 1.1.22 or 1.1.23.

Caution Do not remove old firmware until the upgrade is done.

During graceful upgrade procedure, if after the **newrev** command, the non-active card enters the "MISMATCH" state, do the normal commit command. You will get a warning message:

other card not found,

do you still want to complete the commit operation

Answer yes and then reset the non-active card.

If you get the MISMATCH during the upgrade process, after you finish, you will also get the MISMATCH. To correct the mismatch, you must check your backcards, they must be identical.

Note First you must ensure that the shelf IP address and the PXM IP address are set. The PXM must have its own unique IP address and there must be a another unique IP address for the shelf.

To set the PXM address, use the bootChange command:

```
node-prompt> bootChange
'.' = clear field;  '-' = go to previous field;  ^D = quit
boot device          : lnPci
processor number     : 0
host name            :
file name            :
inet on ethernet (e) : 172.29.37.220:ffff00
inet on backplane (b):
host inet (h)        :
gateway inet (g)     : 172.29.37.1
user (u)             :
ftp password (pw) (blank = use rsh):
flags (f)            : 0x0
target name (tn)     :
startup script (s)   :
other (o)            :
```

Set the “inet on ethernet (e) :" field with the first part of the entry (before the :) as the IP address, and the second part as the subnet mask.

Set the “gateway inet (g) :" with the gateway address.

This must be done on both PXMs. This can also be done in backup boot from the VxWorks prompt “->”.

To set the shelf IP address:

```
node-prompt> cnfifip 26 shelf.ip.address subnet.mask broadcast.address
```

The second argument is the shelf IP address.

The third argument is the subnet mask.

The fourth argument is the broadcast address.

Step 1 Save your current configuration.

```
saveallcnf
```

Step 2 Get the filename by listing the CNF directory:

```
node-prompt> ll "C:/CNF"
  size          date       time       name
--------       ------     ------    --------
     512    APR-08-1999  08:16:18   .                 <DIR>
     512    APR-08-1999  08:16:18   ..                <DIR>
     512    APR-09-1999  05:26:42   TMP               <DIR>
   45433    APR-09-1999  05:28:42   NODENAME_0409990528.zip
   45433    APR-09-1999  05:28:42   NODENAME.zip
In the file system :
    total space :  819200 K bytes
    free  space :  787787 K bytes
```

Step 3 On the workstation, upload the saved configuration to the workstation:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tftp> get CNF/NODENAME_0409990528.zip
Received 45433 bytes in 0.4 seconds
```

Step 4 Verify that one PXM is Active and the other Standby.

Step 5 On the workstation, download the PXM FW:

```
unix-prompt> tftp pxm.ip.address
tftp> bin
tftp> put pxm_1.1.23.fw POPEYE@PXM.FW
Sent 1982672 bytes in 18.3 seconds
```

Make sure that the transfer is successful, by looking at the message displayed on the PXM console after the transfer:

```
Program length = 1982672
Calculated checksum = 0xd9779bc6 stored checksum = 0xd9779bc6
Fw checksum passed
```

Step 6 Download the `ComMat.dat` file to the `C:/fw` directory of the Active PXM. Use the tftp **put** command:

```
tftp <node_name or IP address>
bin
cd fw
put ComMat.dat
copy ComMat.dat to FW directory on the PXM.
quit
```

Step 7 Restart the standby PXM. Wait until it is in standby state before preceeding.

Step 8 After the transfer is done, type the following on the PXM:

```
copy ComMat.dat /FW/ComMat.date
```

Ensure that the ComMat.dat is copied to both PXMs.

Step 9 On the Active PXM, do “install 1.1.24".

The Standby card will reset at this point, and go to hold state.

Step 10 After the Standby card is reset and successfully enters the hold state, on the Active PXM, do “**newrev** 1.1.24.”

The Active card will be reset and go to hold state.

After the **newrev** the firmware should now show the new revision on **dspcd**.

Step 11 After the Active PXM is reset and successfully enters the hold state, on the new Active PXM, do “commit 1.1.24".

PXM Flash Download Procedure

Step 1 Download the new bootcode:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tftp> put pxm_bkup_1.1.22fw POPEYE@PXM.BT
Sent 642232 bytes in 6.3 seconds
```

The byte count above is just an example. It will be different for different images. Make sure that the boot is successfully downloaded. You should see a message like the following on the console:

```
Program length = 642230
Calculated checksum = 0x2a5a41f2 stored checksum = 0x2a5a41f2
Fw checksum passed
```

Step 2 Issue install bt "revision".

Service Module Firmware Download Procedure

Step 1 Download the selected revision of service module firmware into the service module in the selected slot.

```
tftp <node_name or IP address>
bin
put <backup boot> POPEYE@SM_1_<slot#>.BOOT
quit
tftp <node_name or IP address>
put <FW file> POPEYE@SM_1_0.FW
quit
```

You cannot do two puts in the same tftp session.

Step 2 Install bt SM slot version.

Step 3 Answer **Yes** to the question the **install** command will ask.

Note Please consult your Support Representative before performing any software upgrade.

Service Module Installation/Upgrade and Flashdownload Requirements.

Caution Service Module downgrade from 1.1.25 to any downlevel version is not supported.

If you are moving service modules from an existing MGX 8220 platform to the MGX 8850, the MGX 8220 service modules (AX-FRSM-8T1/E1, and AX-CESM-8T1/E1) need to have the boot flash upgraded to MGX 8220 Release 5.0.00 common boot code (1.0.01 version) before they can be plugged in the MGX 8850 chassis. All MGX-8220 service module versions that use Release 4.0.xx of boot code and earlier are not supported in the MGX 8850.

SPARE DEPOT - Customers receiving a replacement service module via the TAC (through the RMA process) will have the common boot code image that works for MGX 8220 Release 4.x, 5,x and MGX 8850 installed on legacy service modules. (Spare service modules received directly from manufacturing through the normal ordering process will have the correct boot code image already loaded.)

If loading of the correct common boot code image is required then it will have to be performed on an MGX 8220 chassis, and cannot be performed on an MGX 8850 chassis. Please refer to the procedure below, which is also outlined in the *Cisco MGX 8850 Installation and Configuration Guide* on the documentation CD.

Use ftp to port the Axis 5 common boot image for the service module to a workstation

Plug in the card into the MGX 8220 shelf

Download the proper MGX 8220 shelf Release 5.0 boot image using the following commands from the workstation:

```
tftp <ip address of the MGX 8220 shelf >
bin
put <boot filename> AXIS_SM_1_<slot#>.BOOT
```

Now you must insure that tftp downloaded the appropriate boot code by verifying the flash checksums.

Login to the shelf.

```
cc <slot #>'
chkflash'
```

Verify that the two checksums are the same.

If NOT, repeat the process until they are the same. If they are the same, then you can safely remove the card. At this point the service module can be used in the MGX 8850 shelf.

Service Module Upgrades

The following steps need to be followed for service module upgrade. Service module firmware images cannot be downloaded as specific versions in MGX 8850 Release 1.1.24 because only one image can be present on the disk at one instance. Hence the user cannot revert back during the installation process.

Step 1 Download the service module firmware to the shelf:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tptp>put frsm_8t1e1_10.0.01.fw POPEYE@SM_1_0.FW
Sent 1982672 bytes in 18.3 seconds
```

Make sure that the transfer is successful, by looking at the message displayed on the PXM console after the transfer:

```
Program length = 1982672
Calculated checksum = 0xd9779bc6 stored checksum = 0xd9779bc6
Fw checksum passed
```

Repeat for each service module type and for each slot independent firmware.

For a slot-specific image (in this example the service module is tied to slot 1),

```
tftp <ip address of the MGX 8850 shelf >
bin
put frsm_<version>.fw POPEYE@SM_1_1.fw
```

for a slot-dependent image,

Note If the checksums are not the same when you remove the service module then the service module will not boot when it is plugged in and the service module will have to be RMA'ed.

- MGX 8850 MGX-FRSM-HS2, MGX-FRSM-2CT3, MGX-FRSM-2T3E3 need to have Release 10.0.01 firmware for the runtime image and Release 10.0.01 firmware for the backup boot image.
- If you need to upgrade both flash and runtime image of MGX 8220 Release 4.0.xx service modules to Release 10.0.01 to operate within the MGX 8850 chassis please follow the procedure below, which is also outlined in the *Cisco MGX 8850 Installation and Configuration* publication on the documentation CD.

Step 2 For non-graceful upgrades, just reset the card and the service module will come up with the new image.

Step 3 For graceful upgrades, a secondary card should be backing up the service module that needs to be upgraded. Configure the redundancy and issue the command:

```
install sm <slot> <version>
```

where <slot> is the service module that is being upgraded

and <version> is the service module image on the disk.

Note The concept of version is redundant here, since there is only one service module image on the disk. However we do check that the version given by the user matches the image on the disk to make it consistent with PXM upgrade/downgrade.

```
newrev sm <slot> <version>
```

where <slot> is the service module that is being upgraded

and <version> is the service module image on the disk.

```
commit sm <slot> <version>
```

where <slot> is the service module that is being upgraded

and <version> is the service module image on the disk.

Note There is no abort command for service module upgrade.

Known Anomalies for Platform Software and Service Module Firmware

The following is the list of known anomalies in the MGX 8850, Release 1.1.25 delivery. Included with each is a brief discussion of the problem. A more in depth discussion is available in the release note enclosure of the problem record in Bug Navigator

Bug ID	Description
CSCdk54268	Symptom: When sending cells with VPI=0, VCI=0 and CLP=1 on a UNI port, **dspportcnt** reports the cells as being discarded due to VpiVciErr and the cellrate also gets updated. However, CLP=0 cells are discarded gracefully and no port stats reported. Conditions: The local port is an ATM port. The other end is configured as IMA port. Workaround: Configure the other end of the port as an ATM port.
CSCdk71643	Symptom/Condition: This is suppose to be an added feature that gives robust end to end connectivity with full recovery in cases of error. But unfortunately, with the current design it will take some extra effort and time to provide this. It will be part of future enhancement and may be available in the next release. Just a little note about why, any Traps sent to PAR are directed by LCN number which is not available without a complete end to end connection, which currently limits the generation of Traps for incomplete connections (after a stipulated timeout period). For now, due to absence of these traps a little more responsibility goes to the end user who is creating end to end connections. It is important that if and when a connection is added or removed both Master and Slave end of the connection should be added or removed respectively. Only one side of a connection should not be removed to create a new connection with the other side. Hence creating and deleting connections under any circumstance is complete only with the creation and deletion of both end of the connections. Failure to do this can result in unneeded dangling connections.

Bug ID	Description
CSCdk82484	Symptom: The RPM incorrectly identifies the physical slot position when it is placed in an 8230 or other SweetPea node. This causes communication with the PXM to fail. Conditions: PXM and/or RPM software is running on an 8230 or other SweetPea node. Workaround: PXM and RPM software should be upgraded to versions that support the 8230 slot numbering scheme. The minimum level of software should be 1.1.30 on the PXM and Cisco IOS Release 121-4.1(T).
CSCdk86638	Symptom: When using CWM to add connections, if the connection addition request times out, subsequent addition of the same connection may fail as well, complaining that the connection already exists (even though it timed out). Description: This is caused by two factors: 1. CWM assumes that when time out, connections are not added on the switch on which the timeout occurs, and thereby only removes other segments of the timed out connection on other involved nodes. 2. On MGX switch, when CWM reports connection timeout, it does not necessarily mean a timeout on the switch. The CWM timeout may be caused, for example, by the network delay etc. from switch and CWM. The connection may actually be provisioned on the switch. Workaround: Don’t use the same vpi/vci/dlci used by the timed out connections. This can be fixed by CWM to perform a retrieval to check if the connection is actually provisioned or not on the switch, after connection addition times out.
CSCdk94100	Symptom: When ILMI signaling and polling is enabled at one port and not enabled at the other end, the port on which signaling was configured does not go into the failed state. Condition: When address registration is also configured along with the ILMI signaling and polling at one end and the other end is not configured for any signaling. Workaround: Do not configure address registration along with ILMI signaling and polling only at one end.

Bug ID	Description
CSCdm05358	Symptom: When modifying a particular protected memory address on CESM8p which causes CESM HW watchdog reset, PXM got reset or lost SAR functionality. Description: When this happens, CESM sent a huge amount of traffic onto the management connection which is supposed to be used for intercard communication activities such as polling. This traffic causes the SAR to spend all its resources on doing the cleaning/flushing in ISR (interrupt service). This address should never be modified using the shellConn 'modify' command. It was used unknowingly in debug/test process. Workaround: Don't try to modify this protected address in shellConn (m 0xb300060) (0xb300060 is ATMizer CPU address for SAR on CESM8P). As a general guideline, shellConn commands like 'modify memory' should not be used by the customer.

CSCdm06097	Symptom:
	When the service module is in a mismatch state, and switchcc occurs, the log file gets filled.
	Condition:
	When switchcc occurs and the service module goes into mismatch state, SM logs the same message more than once to the PXM. An example of this message follows.Message which gets logged is like this:
	`02/01/1999-14:28:42 12 cmm FRSM-6-4167`
	`ASC sent slot number to SM : Old S.N.= 12 New S.N.=12`
	`02/01/1999-14:28:41 11 cmm FRSM-6-4167`
	`ASC sent slot number to SM : Old S.N.= 11 New S.N.=11`
	`02/01/1999-14:28:41 12 cmm FRSM-6-4167`
	`ASC sent slot number to SM : Old S.N.= 12 New S.N.=12`
	Workaround:
	This log file is not going to affect the functionality or performance of the card or any. This log message simply can be ignored, as it only is useful for debug purposes.

Bug ID	Description
CSCdm10722	Symptom/Condition: The install, newrev and commit commands for service module upgrade (there is no concept of downgrade here, as there exits only one valid, service module image on the disk at a time), do not follow, the same state machine as PXM commands in the current release. Hence, it is mandatory, that for service modules, these commands are given in the documented order, which is: (1) install (2) newrev (3) commit WARNING: If these, commands are not given in the above specified order, we can be in a situation where we can have two different images running on the primary/secondary combination. However, on the disk, there is only one valid image for the service modules. Workaround: Assuming, that these commands were given out of order, and now we have two different images, running, on primary / secondary combination. f1 - Old image version f2 - Newly downloaded image (1) Reset the secondary card, so that it comes up, with f2. (2) Do a softswitch between the two cards, so that secondary takes over and becomes active. At the same time, primary is reset, and comes up with f2. (3) If you may, you can now, do a softswitch, to revert back to the original primary, to restore normal state.
CSCdm11410	Symptom: When listing a directory, some filenames contain either illegal characters or a timestamp for the name instead of a standard dos file name. These file entries will fail to be removed when passed to the remove command. Conditions: No specific known conditions are responsible for this problem. Workaround: Tools are available to clean condition up on the disk. Contact Cisco engineering.

Bug ID	Description
CSCdm20583	Symptom: When the **dspcd** command gets executed on the active PXM, with a standby SRM card number or vice versa, the error message is confusing: Invalid value of slot number. This actually indicates that the slot is not accessible. See further problem description below. Condition: When the **dspcd** command is executed with the other SRM slot numbers. Workaround: No Workaround is available. This is just an unclear error message problem. No logical errors. Further Problem Description: When the **dspcd** command gets executed on the active PXM and when the argument for the command is the standby SRMs slot number, the above error message is displayed. That is because from slot 7 PXM only slot 15 and 31 SRMs are accessible. Similarly for slot 8 PXM, only 16 and 32 are accessible.
CSCdm22510	Symptom: Connection traps are not sent out when receiving A bit update from CPE. Conditions: The end result of this is that CWM will not be notified about the channel status change (failure or normal), neither will PXM/PAR. The remote end is notified via in band OAM. This applies to all service modules. Workaround: No Workaround For more information on this bug, refer to CSCdm22510, page 146.
CSCdm31437	Conditions: SV+ needs a trap when a line is added or deleted. Symptoms: In a Feeder case, SV+ is informed of a line addition through Inband communication. However, in case of stand-alone configuration SV+ needs a trap to determine addition or deletion of lines. Workaround: There is currently no Workaround for this.

Bug ID	Description
CSCdm31793	Symptom: When you configure a BERT on any line, all the channels on the local as well as the remote MGX88xx are going into alarm. However, connections on the PXM on both ends do not indicate any alarm. Conditions: Configure BERT on any line which is having some connections. Workaround: None.
CSCdm33351	Symptom/Condition: For VISM. When an endpoint is added to a line that is already in an alarm condition, an Endpoint Added Trap message and an Endpoint is Active message are sent to the manager from VISM. However, the Endpoint Failed Indication Trap message is not sent. Workaround: None.
CSCdm33605	Symptom/Condition: For VISM. When a switchover to a redundant VISM card takes place due to a reset/failure of the active VISM card, the display on CWM is not correct. Workaround: None
CSCdm33638	Symptom/Condition: For VISM. When a switchover to a redundant VISM card takes place due to a reset/failure of the active VISM card, the switchover takes place but the display of active lines is not consistent between the shelf and CiscoView. Workaround: None.
CSCdm41079	Symptom: When you configure CESM T1 D4/AMI line code and framing, the line will not come up. The card is not generating a T1 signal. Conditions When configuring CESM T1 D4/AMI line. Workaround: None other than use ESF/B8ZS.

Bug ID	Description
CSCdm42849	Symptom: An execution of the **dlmi** command to display LMI messages results in a system reboot. Conditions: Enable lmitrace using **lmitrace** command in order to start capturing LMI messages. **dlmi** results in system reboot. Workaround: **dlmi** is a debug command which should not be used when large number of connection are present in the system. This problem is only seen with large number of connections.
CSCdm43053	Symptom: Connection addition fails. Conditions: 200 connections are already provisioned in the FRSM-HS1. Workaround: None. Further Problem Description: FRSM-HS1 card only supports a maximum of 200 connections on Popeye1. Memory limitations in HS1 SRAM and DRAM place an upper limit on the number of Popeye connection data structures which can be stored in memory.
CSCdm48639	Symptom: Better error checking needs to be provided for SM boot and firmware download. It's possible to download the boot image as firmware and vice versa. Workaround: The boot images must be downloaded with the .BOOT extension and the firmware with the .FW extension.
CSCdm53758	Symptom: Channel alarms do not get propagated to the middle segment if NNI signaling is enabled. Conditions: This happens when the channel level traps are disabled. This will be fixed once a bulk trap mechanism is implemented to indicate channel alarms. Workaround: None.

Bug ID	Description
CSCdm55480	Symptom: While “downloadflash” is executing on the PXM or while the TFTP of the flash image to the service module is in progress, in circumstances when the PXM or the respective service module is reset, it leaves the flash in an unknown state. The card that was reset will not bootup the next time. Conditions: The problem will happen when the PXM or the respective SM is reset using the **resetcd** or **switchcc** commands while the flash is being written Workaround: None. Make sure that the flash is intact before executing the **resetcd** or **switchcc** commands, or any other command which will result in the reset of the card. Further Problem Description: If the card is reset when the flash is being written, it leaves the flash in the corrupted state. Therefore, the card does not boot up. All the soft reset commands, such as **switchcc**, **resetcd**, or **addred**, do not check if any flash write is going on before resetting the card.
CSCdm56094	Symptom The far end device can not be put into a loopback using the “Far End Inband Loopback” or the “Far End ESF Loopback” options under the “DEVICE TO LOOP” menu in the “cnfbert” command. If these options are chosen as part of a BERT pattern test, then the test will not be configured as it will fail to sync the pattern. Condition The inband and ESF loopbacks are activated/de-activated by transmitting the loopback codes for the minimum number of seconds specified by the ANSI T1.403 specification. However, due to variations in the way time is measured by the AUSM and the far-end devices, some devices do not detect the code for the desired number of seconds and hence they do not activate/deactivate the loopback. Workaround This problem may not be seen on all (far-end) devices. If it is seen, then there is no workaround other than trying to repeat the test configuration till it is successful.
CSCdm69318	Symptom: FRSM-2CT3 is stuck in boot state. Conditions: If a switchcc is issued at the same time that an FRSM-2CT3 is going through a reboot, the FRSM gets stuck in boot state. Workaround: Do switchcc only after FRSM-CT3 is comes up

Bug ID	Description
CSCdm84982	Symptom: The CLI command **tstdelay** displays time in microseconds instead of milliseconds. Condition: CLI shows the delay in microseconds, while the GUI shows the delay in milliseconds. However, the values are almost same. Workaround: Convert the displayed time using this formula: <Time in milliseconds> = (Time displayed + 1000 - 1) / 1000. This formula converts the time in milliseconds with round off. After converting the time, consider the time in milliseconds.
CSCdm85931	Symptom: There are display errors for FRSM-HS1 card for **dspchancnt** 17. Condition: Unknown. This happens very rarely. Workaround: None.
CSCdm91930	The LED status in CWM are different for lines in same status in Active card and hotstandby.
CSCdm92345	Symptom/Condition: The VHS SM have either DAX or FEEDER connections on the logical port which is simulated with some kind of signalling. Now if simulate line in logical (diagnostic) loopback the CWM shows connections Failed but after deleting the diagnostic loopback from line connections do not come back in OK state event although traffic runs well through the connections. CLI shows the correct status of the connections but CWM does not show the correct status of the connections ones connections go to the Fail state. Workaround: None.
CSCdp00912	Core redundancy should be allowed in mismatch state Workaround: None
CSCdp03640	Details on this anomaly is not available at this time.
CSCdp11502	Symptom: AUSM UBR1 connections modified though proxy fail with error message “Wrong Egress Service.” Enter the Fix description: The lower bound in the v function has been changed from 0 to 1 in order to take care of UBR connections. Initially, the lower bound was 1 so it used to give an error for UBR connections since the default value for Egress Service Rate is 0. An additional check has been added in the k function so that the non-UBR connections have their lower bound as 1.

Bug ID	Description
CSCdp11859	Symptom: The ABCD bits that are produced on the egress of a CCS-to-CAS connection seem to have a random/unpredictable pattern. As this also applies to the MFA signal, attached devices might go OOMF. Workaround: There is currently no Workaround for this.
CSCdp15496	Symptom: Does not ask for the password to protect platform feature. (**clicmd**: **dspfeature**) Description: This is a CLI enhancement not a bug. Condition: Not applicable. Workaround: None
CSCdp17122	Symptom: Softswitch and switchback commands accept invalid slot numbers. Condition: Workaround: None. Before executing the softswitch or switchback commands make sure that the slot numbers are valid by executing the **dspred** command and verifying the slot numbers and their states. Further Problem Description: The softswitch and switchback commands do not check for valid sot numbers before executing the command. Therefore, the slot might get reset even though the slot is not the primary of the redundancy group or the secondary of the redundancy group for the switchback command.
CSCdp23328	Symptom: Inconsistency in the syntax used for command **dsplns** versus the commands **addln**, **delln**, and **dspln**. Condition: The commands that are used to configure the PXM physical interfaces have inconsistency in their syntax. Some commands require a '-' sign before the line type parameter. The others do not. Workaround: Check the help text for the commands, or refer to the command help in the manual before using the command. Further Problem Description: Some commands expect the '-' sign before the line type parameter. Other commands don’t require the '-' sign. After the fix, all commands should have a consistent parameter syntax.

Bug ID	Description
CSCdp30538	Symptom: When the **memShow** command is issued, it displays the detailed memory statistics on all partitions. The PXM hangs when <ctrl>C is pressed in the middle of the display. Conditions: This symptom occurs when executing the **memShow** command with a non-zero argument; for example, **memShow** 1, from the CLI prompt. The command **memShow** without any argument works fine, but displays only the summary information on the memory blocks. The detailed display can be executed only with a non-zero argument. Also, while recreating the problem, it was observed that when PAGEMODE is OFF, the user more likely to experience this problem. Workaround: Do not execute **memShow** with arguments from the CLI prompt. From the VxWorks shell, the command works fine. Also, do not execute the command with arguments when the PAGEMODE is OFF. Further Problem Description: When **memShow** with arguments is issued, either the process which is handling the output or the **memShow** routine infinitely waits. The reason for this infinite wait is currently unknown. After the problem occurs, the shelf cannot be pinged or telneted into. The Active PXM has to be rebooted by pulling out the card.
CSCdp31043	Symptom: Issuing the command **dspalm** on FRSM-HSSI card requires the x21 as the interface type for HSSI interface. Condition: The alarms for the FRSM-HSSI card for the line require x.21 in stead of HSSI as the interface type for the **dspalm** command. The CLI command **dspalm** should accept option -hssi on the card FRSM-HSSI, but instead, only accepts the x.21 option. Workaround: The -x.21 option can be used for HSSI interface. This is only for user level but, after taking the option it has been taken care to use appropriate MIB object to display the required info for the CLI command **dspalm**.
CSCdp32043	Sv+ node sync always failed because of timeout, dut to tftp very low. This condition was caused by manually issuing multiple **switchccs** on the active PXM during config uploads from a SM to CWM. This condition happens when at least three such uploads to a SM is terminated by the **swithchccs**. Hitting this window is extremely rare as config uploads start and finish with in a very short duration. The recovery from this condition is to reboot the SM. The chances of happening this in the field is very remote. Engineering has a solution for this problem, which would be thoroughly tested before it is released.

Bug ID	Description
CSCdp34543	Install backup boot fails when it tries to program the flash on the standby card.This problem is with the database manager and the file transfer code. If an active PXM gets reset while the database manager is copying files to the standby, the new active card database manager will be left in a state where it cannot mirror files to the standby. Workaround Before trying the install command, use the shellconn **dbmFileShow** command on the active. If it shows any file in the state of being copied, you will have the problem. Do a switchcc to clear the problem.
CSCdp35123	Symptom: On an MGX 8850 shelf, the user addition limit is 50. If the 50th user is added under any user group, then the user addition goes through successfully, but subsequently disappears after a few minutes. This is verified via the **dspusers** command in on the PXM. Workaround: The user should log in as user under group1-3, then do an **adduser** with a user ID which will disappear after a few minutes without giving a warning. If any additional user is added, then it will erase the previous user added under anyuser without a warning.
CSCdp35772	Not enough information to find the cause. As the cause is unknown, there is no workaround. This should not affect the normal running of the system as the background memory check checks for memory corruption and leaks.
CSCdp36477	Symptom: switchcc on 8850 causes a Sig_F aps line switch on BPX Conditions: This happens rarely on our shelves. Workaround: None
CSCdp37528	Will be fixed in 1.1.30 Symptom: At softswitch for FRSM-VHS cards (**hotStandby** case) two traps are seen: primary to secondary trap number is 50045, secondary to primary trap number is 50046. Duplicate 50045 traps are sent when softswitch is executed on FRSM-2CT3 Conditions: softswitch “from” “to” Workaround: None. Further Problem Description: If switchover occurs due to fault condition, there is only one trap sent out, which is correct functionality. Only when softswitch is done manually through CLI or SNMP will traps 50045 or 50046 will be sent twice.

Bug ID	Description
CSCdp38293	Symptom: When the command **dspcd** is issued on an SRM, the display shows the 800 number from the back card in the FrontC. Condition: Workaround: None. Corrected the information on the **dspcd** command. Earlier **dspcd** command used to show b/c 's 800 fab number as SRM front card fab number. This problem is now fixed.
CSCdp39894	The software error is logged as a result of an attempt to refer to a transaction that is already complete. Such an attempt is due to a retry resulting from a timeout. Since the transaction is already complete, the error is logged only for information and has no serious implication in this case.
CSCdp39900	The software error is logged when trying to allocate a msg buffer to send VSI commit for a connection. Buffer allocation problem was fixed by bug CSCdp29728. Retest the problem with the fix for bug CSCdp29278. If the problem doesn't exist, we can close the bug.
CSCdp41488	Symptom: The secLineModuleMismatchTrap is not generated. Conditions: When 2 half-height back cards are inserted, the full height front card doesn’t support this configuration; for example, when the PXM (full height) card is inserted with 2 FRSM-8T1 back cards (half height). Workaround: This does not have any workaround. This needs further investigation and currently does not have any impact on the functionality. This is a negative test condition.
CSCdp42349	Symptom: A PXM1-155 alarm is issued. Conditions: This problem occurs under the following scenario: Port3 Rx <----> Port4 Tx Port3 Tx <----> Port4 Rx When Port3 Rx is removed, and the command **dsplog** is issued, the log does not indicate the correct alarm status. Note that when the **dspcds** command is issued, the shelf integrated alarm field is clear.

Bug ID	Description
CSCdp42525	Symptom: When the command **dspfwrevs** is issued, it does not display the boot code versions Conditions: Happens always. Workaround: None. Problem is fixed. Changed function **dsprevs**() in file tftpCommon.c to include check for SM boot files (extension.bt) in addition to firmware file (extension.fw) while displaying firmware revisions in **dspfwrevs**. PXM boot files are already being displayed in current versions.
CSCdp43643	Symptom: Cannot add any configuration, and the PXM does not show any the card or even slot to be present through **dspcds**. Conditions: After pulling out the PRM slot and if a half height card (SM) is inserted into the bottom half of that slot, it comes up. Workaround: None. Has been fixed in 1.1.30
CSCdp44837	Symptom: When deleting a large number of connections using a script, it was found that for some connections, the resources were not properly freed. Workaround: Do switchcc.
CSCdp45431	Details on this anomaly is not available at this time.
CSCdp46345	When the active PXM card is pulled, there is APS protection and standby back card takes over. However, this is available only for SONET interfaces. Hence intelligence needs to be put in, so that for T3 / E3 back cards or if there is no APS protection, we cause a switchover on back card removal.
CSCdp46927	Symptoms: VISM card in alarm after **addcid** Conditions: This problem occurs when the **addcon** command is issued on a line in alarm. Workaround: Reset the VISM card.
CSCdp48790	This problem has not been reproducible. It was primarily a display issue observed on a one time occurrence.

Bug ID	Description
CSCdp50045	Symptom: During boot time, vc create failed message will be displayed Conditions: This message appears when there is vc configuration in the configuration file. Workaround: There is no impact on the functionality.
CSCdp50317	Problem: Information displayed using the **dsphotstandby** command is not consistent. Symptoms: When one of the cards in a 1:1 Hotstandby pair is pulled, the **dsphotstandby** command displays out, it displays “Slot XX: SM not in Hot Standby state.” If you never inserted an SM with Hotstandby following the last shelf reset, it displays a slightly different message. “Slot XX :SM linked by 1:1 Redundancy. HSB not supported.” Workaround: None required. If there is no SM in the slot, both the messages indicated that there is no Hotstandby in this slot.
CSCdp51707	Removing a Service Module, then inserting an RPM in the same slot causes the RPM to go to Active State instead of Mismatch. Workaround: Issuing the command **resetcd** will sometimes correct this problem. However, it’s better to issue a **clrsmcnf** command for the RPM slot.
CSCdp51956	Symptom: No online diagnostics are available to check the health of PXMs and SRMs in the system. Conditions: Any. Workaround: None.
CSCdp52549	This software error has been a one time occurrence when deleting a connection. The cause of the software error is a retry attempt to delete a connection which is already in the process of deletion. The error is just a warning and has no side effect on the connection which is deleted.
CSCdp52776	Symptom: New CLI command to **delportrscprtn** for the AUSM and the FRSM. Conditions New command to delete the port resource partition to be implemented on AUSM and FRSM. Workaround: None.

Bug ID	Description
CSCdp53347	Symptom/Condition If 2 different HS1 SM have too many master and slave connections, deleting some 15 slaves first f None.
CSCdp57090	E1 external clock config reverts to T1 after **resetsys**
CSCdp57673	Symptom: The RPM removal trap will show incorrect information for functionModuleState (ACTIVE). Condition: Occurs when the RPM is removed. Workaround: None.
CSCdp59851	Customer is currently BLOCKED. 2 channels have deleted automatically. Per the log messages, PAR failed, followed by PVC deletion.
CSCdp60418	Symptom: Invalid response accepted by CLI when burning bootcode. Condition: When burning the PXM boot code, an invalid response provided to the “Do you want to proceed (Yes/No)?” statement generated by the CLI will be ignored, and the download will proceed. Workaround: This needs further investigation and currently does not have any impact on the functionality. There is no known workaround for this.
CSCdp60443	Symptom: A data outage occurs on the FRSM-2CT3, up to 15 seconds in length. Conditions: This problem is observed during a switchover induced by removing the back card of the standby card. Workaround: User has to do either a softswitch or issue the **resetcd** command and remove the back card of the standby card.
CSCdp63530	Symptom: FRSM-2T3 fails after upgrading causing switchover to secondary Condition: If two FRSM-2T3 cards are set for 1:1 redundancy and a graceful upgrades occurs on PXM, then the Primary FRSM card goes into a fail state and switch over occurs. This always happens in the above scenario. Workaround: None.

Bug ID	Description
CSCdp63922	Connections could not be added successfully from a SM, with a particular port/DLCI combo that did not seem to be used.
CSCdp63924	SYSTEM ERROR 20102 (PV_DB_RMV_ERR) is reported when we try to refer a completed transaction. This is duplicate of the bug CSCdp39894
CSCdp65639	This is needed in cases of abnormalities such as excessive error logging which are more prevalent when the product is in development in engineering environment. Conditions such as these are not expected to occur in released software. Existence of any such problem that can lead to time out scenario described in the bug report would be the one to be addressed as the root cause. There are no known outstanding issues of such nature at this time in released software.
CSCdp65652	The ImaGroupRxImaId is not updating properly on the AUSM when the TxImaGroupId parameter is manually changed via the Kentrox CPE.
CSCdp66005	Symptoms: The PXM UNI connections added on a port which is in alarm remain in alarm even after the port alarm is cleared. Conditions: This problem is reproducible. If connections already existing on a clear port are put in alarm by causing a port alarm, the alarms get cleared on clearing the port alarm. Only connections added on a port in alarm remain in alarm state even after clearing the port alarm. This problem was first seen in image 1.1.21Lc. Workaround: Before adding UNI connections originating from any SM, make sure that the ports at the two endpoints are clear of any alarms. Alarms on a connection can also be cleared by doing an SM reset. PXM UNI connections added on a port which is in alarm remain in alarm even after the port alarm is cleared.
CSCdp69136	Symptom: Access Violation errors are reported during tftp of ComMat.dat file
CSCdp69188	Symptom: snmp query “get” on “mibVersionNumber” returns incorrect value. Invalid response issued when an snmp query is performed on the 8850. Workaround: Obtain the MIB version number for the platform firmware by using the **cli** command version. Cisco CCO has details of which MIB version goes with which firmware version.
CSCdp70729	Symptom: None. Conditions: A new feature to provide SNMP set switchCoreCard. This feature was added to the (POP1PRET5) 1.1.30 release. Workaround: None.

Bug ID	Description
CSCdp71073	Symptom: After a softswitch is executed, the wrong slot number is used for some log messages. Conditions: This symptom is observed after doing a softswitch or a normal reset of the card. Workaround: None. Further Problem Description: Issuing the **dsplog** command shows the wrong slot number for some of the log messages. This is because, at this point, the slot number has not been updated from the PXM.
CSCdp71408	No information is available about this anomaly at this time.
CSCdp75846	Problem description: In the AAL1 cells generated by CESM for a Structured T1 CAS connection, the AAL1 pointer may not be pointing to the first 125 us frame of the multiframe. Symptom. Analog modem calls which are transported over the Structured T1 CAS CESM connections may experience may more bit corruptions than on a normal TDM link. This may even exceed the tolerable Signal to Noise Ratio (SNR) for some modems and might result in modem calls getting dropped. Workaround. Use unstructured CESM connections if analog modems drop calls due to excessive bit corruption.
CSCdp77451	Inserting standby PXM can cause the telnet to be lost on the active PXM Workaround: 1) On active card issue bootchange command and change the Ethernet IP address to something different than the one displayed by **dspifip** for the ethernet interface. This can be any spare IP address on that network. 2) Insert new standby card and wait for it to become standby. 3) On active card change bootchange IP address back to original IP address of shelf.If this process is not followed than the newly inserted standby card could end up bringing up the ethernet interface with the same IP address as the active and broadcast its mac address so that all ethernet connectivity is lost on the active card. To correct this situation if it occurs, do the following: 1) Telnet and log into the console on the active card. 2) Reset the standby card by using **resetcd** or reinsert the card. 3) Go into shellConn 4) Enter arpEnetUpdate at shellconn prompt. Ethernet connectivity via telnet and tftp to the active card should be restored.

Bug ID	Description
CSCdp77492	Symptom: There is an inconsistency in the behavior of port status reporting when local loops are put up on the line. In one case, the port came out of alarm and stayed that way even when the loop is removed. In another, the port stayed in alarm when the loop put up. Workaround: None.
CSCdp81287	**clrsmcnf** says unsupported SM for CESM-8E1
CSCdp84145	When add a connection from CWM using local and remote nodename which is different from the one configured on the node (because CWM is not synced with Popeye 1) , the **addcon** request erroneously passes and the connection gets added.This is because of the fact that the some service modules are not doing the checking for the Local Nodename. It just passes the Local Nodename without checking whether it is valid or not. When the **addcon** request comes to PAR, we check whether the local and remote NSAP match or not, in case they match we allow the **addcon** to go through. PAR assumes the Local nodename to be correctly passed from Platform. The error is not seen when we try to add a connection from CLI with incorrect remote nodename. In case of CLI, we don't have to specify the Local Nodename, it is extracted from the database by the respective Service Module. This problem is only seen when we use CWM (to reproduce the problem one can use SNMP set as well). We need make sure that Service Modules are doing the validity check for Local Nodename before sending the Hard Disk Update to Platform or not.
CSCdp84773	It has been found out that the Resource Partitioning of an AUSM card on the PXM is registered as zero instead of a value of three. This process takes place automatically with the AUSM card, and on the VISM it is done with a command of **addrscprtn**.
CSCdp86479	Symptom: PVCs shown as UP on RPM even when they are deleted remotely. Conditions: PXM ver: 1.1.0 RPM ver: 12.1(0.7)PI PVCs are added between two RPMs through a ls1010 (ATM Switch) Workaround: None.
CSCdp89717	In some cases, when RPM fails, it is not declared as failed on PXM.And any attempt to **cc** to this FAILED card fails, even though it is showing ACTIVE on PXM. So this is not a **cc** problem, but the card state should be changed from ACTIVE to FAILED. Workaround: Check the console of RPM and if it has failed, reset the card either from console (using **reload** command) or from PXM (using **resetcd <slotno>** command).

Bug ID	Description
CSCdp91401	Symptom: Customer cannot execute a BERT test on an AUSM card that has an IMA port defined on it. Only after the port is deleted can a BERT test take place. There are physical T3 loopbacks placed on the SRM cards and all links are defined. Conditions: Configure BERT test on any line with IMA port defined on it. Workaround: None.
CSCdp92736	Symptom: The line, port, channel counters are reset to zero, and start counting from 0, after a **switchcc**. Conditions: This is always the case, even in the case of a sm switchover. Workaround: CWM maintains a copy of the counters, in 15 minute bucket intervals, after the switchcc, the previous values can be retained from CWM DB
CSCdp93004	When a connection fails, the a-bit status displayed on the connection manager for the particular connection always stays as “ok”. The PXM does not send the A-bit information to the connection manager. So the A-bit information does not reach the connection manager and the channel status is not reflected in the CWM. It is displayed as “ok” even if the channel is in failed state.
CSCdp94060	Receiving user connection modification traps 25015 for no reason
CSCdp96632	Symptom: The table rpm_port parameter will have -1 value, even if the port is in the active state. Workaround: Table rpm_port parameter will have -1 value even the port is in active state. rpm_port parameter table is having wrong value because the status given by RPM does not match with the values expected by MIB defination.As a result this the retrieved values show wrong status.
CSCdp97387	Symptom: When the **dspegrqs** command is issued to display the egress ports of the FRSM-2T3 slot on an MGX node, the system displays the following: This command is valid only when egress service type is Weighted Fair Queueing Workaround: None.

Bug ID	Description
CSCdp99436	Symptom: On the FRSM-VHS2T3 ? shows **dspportstats** as command but there is no such command. Condition: Always. Workaround: Do not use the **cli dspportstats** for FRSM-VHS2T3 and FRSM-VHSHS2 cards.
CSCdp99496	Symptom: When the help command (?) is issued in the following manner: FRSM-VHS2T3? The return display shows that **dspportstats** is a command. However, no such command exists. Condition: Happens always on a FRSM-VHS2T3. Workaround: Do not use the CLI **dspportstats** for FRSM-VHS2T3 and FRSM-VHSHS2 cards.
CSCdr00016	Symptom/Condition: This problem was encountered sometimes when deleting more than 500 connections using a single **delchans** command. Workaround: It is recommended not group such a large number of connections in each **delchans** command. Restricting to 50 or 100 connections per **delchans** would help workaround this problem.
CSCdr01410	PXM resets if holding down the return key while cc'ed to a service module. Workaround: Don't hold the return key.
CSCdr01426	Symptom: Error logs overwritten and no core dump. Information is not retained on reset. Condition: One time occurrence.
CSCdr02667	When IMA ports are configured on AUSM via SRM (BULK distribution), execution of **switchcc** causes IMA port failure. Workaround None.
CSCdr04154	Customer has come upon a failed PXM in there shelf and would like to have EFA done on it to determine the root cause of the failure.

Bug ID	Description
CSCdr05045	Symptom: Trap varbinds are missing in ChanOAMLpbkStatus Trap 50311. As per the MIB, trap 50311is defined with 16 varbinds but received trap shows only 14 varbinds. The two varbinds functionModuleType and generic TimeStamp are missing. Workaround: None.
CSCdr05471	Softswitch caused FRSM-CT3 cards to goto failed state. ed map in the PXM had the same slot number for both the entries.
CSCdr06052	**dspcd** in PXM would show the FAB number as 800-XXX which is actually the PCB Number. Workaround: The **dspnovram** command would help in reading the FAB Number.
CSCdr08987	This problem is observed when no line is added on the BPX side and APS is added on the MGX side. Also the sigD threshold has to be of the order of 8 or 9. SigD levels of 7 or under does not result in this problem. Workarounds: None
CSCdr09138	Symptom: PortState declares Active when the line failed with yellow alarm. Workaround: None. Further Problem Description: Customer sent a yellow alarm signal to fail the line. The line failed with alarm but when the command **dspports** is issued, the display shows that the AUSM-8T1is in an Active state. Bring down the line into RCV_RAIS state. The line should have one or more ports configured on it.
CSCdr09927	Symptom: An AUSM configured with an IMA port sends the trap 50231 on softswitch. The trap contains the varbind imaPortState.0 (Integer): failedDueToImaSigFailure. The description for 50231 says “Indicates that IMA group is active” that contradicts with the value of the varbind imaPortState seen in the trap. Conditions: AUSM is in 1:N redundancy and it has an IMA port configured. Workaround: None. Further Problem Description: 50231 is sent when an IMA port is added. But the description for 50231 “Indicates that IMA group is active” leads to misinterpretation by the user. On the softswitch, the secondary AUSM downloads the configuration and adds the lines, ports, IMA groups, etc. Hence, this trap is sent.

Bug ID	Description
CSCdr10332	Upon switchcc AUSM in bulk mode receives wrong vpi-vci cells. The setup includes AUSM to AUSM DAX connection. An ATM tester is connected to one AUSM and traffic is pumped through it. The other AUSM is configured in bulk mode. Traffic is being pumped on 4 ports of the card. When a switchcc is done some ports of AUSM get cells with wrong vpi-vci. Some recover and some not.this was observed more frequently when a back card was inserted in the AUSM slot configured in bulk mode. This was also observed when the back card was not present.
CSCdr11454	PVC alarm status was not reported correctly after a softswitch was executed on fRSM-2cT3.
CSCdr12555	Symptom: Required support for ZERO CIR connections on FRSM-HS1. Condition: Present HS1 SM does not support Zero CIR connections and does not provide to configure Service rate and EIR of the zero CIR connections. Workaround: None.
CSCdr14672	Standby FRSM shows not available under redundancy and hot standby table. Happened once. User was performing a lot of operations such as softswitch, switchcc, **delapsln**, **addapsln**, **switchapsln**, **dspred** and **dsphotstandby** command outputs however, show one slot to be empty and second one available as hotstandby respectively. It is not possible to softswitch from one to the other since one is not available as a standby.
CSCdr15526	Symptom: On FRSM-2T3E3 cards, the xcnfdsx3bert command displays illegal/inconsistent options. Workaround: None. Problem is fixed. Changed the help string to reflect the correct options for xcnfdsx3bert.
CSCdr15892	addlnloop on the PXM causes SONET line alarms, which sometimes do not clear when the loop is removed.
CSCdr16499	Details on this anomaly is not available at this time.

Bug ID	Description
CSCdr16720	Problem Description: Softswitch caused the standby FRSM-VHS to Failed state. (Though softswitch succeeded according to the CLI it really didn't occur. Setup: FRSM-2T3 cards in Slots 1 & 2, configured for 1:1 redundancy with Y cable and connected to ADC-Kentrok DSU. Traffic was pumped from Tekelec tester to the cards. FRSM-2T3 in Slot 1 was in Active and FRSM-2T3 in Slot 2 was in Standby. Steps involved: With the traffic present, configured cnflnsubrate on FRSM-2T3 on the Active card i.e Slot 1. The configuration went fine. Now did a softswitch. The softswitch cli got executed and the dspcds cli executed immediately after the softswitch, showed the Slot 1 as still active and Slot 2 as standby, but the redundancy column was giving the message covering Slot 1. The next **dspcds** after sometime, showed the card in Slot 2 as Failed (It was supposed to have come to Active and the card in Slot 1 should have gone to Standby).The card in Slot 1 never got reset and the traffic continuity was perfect.
CSCdr17560	Symptom: Shelf reset while executing a switchcc command or if executing an SNMP get. This was due to (the creation of) a null pointer in the SNMP system data structure. Conditions: When running the PXM image from the 1.1.22Ll or 1.1.22Lo (internal) Releases. Workaround: A fix for CSCdr17560 was checked in to both 1.1.23 and 1.1.30 Releases. This fix provides the check of the return code of the function querying the shelf model number and thus allows the correct data to be registered for use later on. The SNMP system data structure is then initialized based on the model number found. The defaults are provided just in case if an error occurs during the query of the system model number.
CSCdr17959	AUSM card hangs if 2 to 3 ILMI requests are sent on a port. It reboots if 5 ILMI requests are sent. Workaround: Disable ILMI.
CSCdr18819	Symptom: PXM prompt gets misaligned after adding a connection. Workaround: Entering one more return key would get the prompt aligned back.

Bug ID	Description
CSCdr19336	Symptom: Not able to configure **cnfchansrvrate** after **cnflnsubrate** for zero CIR. Condition: When the line rate (~portSpeed) is changed using the command **cnflnsubrate**, per connection policing parameters are not adjusted according to the new portSpeed. The card has to be rebooted to program the policing parameters with the new portSpeed, but rebooting doesn't modify EIR for zero CIR connections, this has to done using the command **cnfchaneir**. Workaround: None.
CSCdr19456	Symptom: Sending five ILMI requests to an AUSM card makes the directly connected AUSM card reboot. Setting up an HP test set to a directly connected AUSM card. Created a connection to another AUSM card with a loopback plug on that port. After sending only two ILMI requests, the directly connected AUSM card locks up. After sending five ILMI requests the directly connected AUSM, the card reboots. Workaround: None.
CSCdr20239	Symptom: When the command **tstcon** is issued, it clears the alarm status of connection when connection is failed due to remote A-bit failure. Conditions: This problem occurs on with a feeder connection. This problem is not consistent. Workaround: None. Resetting the card may produce the correct alarm status.
CSCdr21154	Symptom: The time on the FRSM-8 card shows the day as 00. Conditions: In the year 2000, on the last day of every month, the day will show up as 0. Workaround: None. The date will get corrected the next day.

Bug ID	Description
CSCdr21393	Symptom: The AUSM-AUSM loopback connections go into alarm. Conditions: This happens when CCS connections are added between VISM and AUSM. Workaround: None. Further Problem Description: This problem occurs when there are CCS connections added between VISM and AUSM. Only the loopback connections are going into alarm.
CSCdr22345	Symptom/Condition: Voice call gets dropped, line alarm is seen on SM after a PXM switchover Happens only when the SRM has link to the SM, the secondary SM is Active and there is an SRM/PXM switchover.HotStandby SRM's link points to the Primary SM until the new SRM becomes Active Workaround: Switchback the SM so that the Primary SM is Active, before doing the PXM switchover
CSCdr22375	Symptom/Condition: **added** between SMs fails reporting a feature mismatch but **dspsmcnf** shows identical feature bitmaps for the 2 SMs. Happens only when a graceful PXM upgrade is done to 1.1.23, and no SM upgrade/reset is done after the PXM upgrade and an **addred** is attempted. The IMA feature has been made standard instead of optional in 1.1.23 PXM firmware. Hence a SM which booted while the PXM ran pre-1.1.23 firmware, will maintain its old feature bitmap. But a SM which booted while the PXM ran 1.1.23 firmware (or greater), will show a new feature bitmap. **Addred** will thus fail between two such SMs. Workaround: After the PXM upgrade, reset all the SMs for which **addred** needs to be done, and then do **addred**
CSCdr22910	Customer is concerned that the **dspfst** text does not match the **cnffst** text exactly. The **dspfst** output is missing the word "interval" after RTD.
CSCdr23908	Symptom: Connections go in and out of alarm on the FRSM-2CT3, but do not get recorded in the system log. Workaround: None. Problem is fixed. Enabled the variable that is blocking the event log for connection alarms.

Bug ID	Description
CSCdr23964	Symptom: The 50012 trap is sent twice. Conditions: This occurs when the DC power supply is on. Workaround: None. Further Problem Description: The moduleTrapAlarmSeverity is “0” in the first one and "major(2)” in the second one.
CSCdr25038	Symptom: There are times when we are not able to send the cc frame to the RPM card and as such not able to do a cc. Workaround: cc is successful the second time.
CSCdr25083	Symptom: Mod Conn fails with error “Wrong OID or problem with Varbind” for FRSM-VHS endpoint connections. Both DAX/NONDAX. Condition: Unknown. This happens with some versions of switch only. Workaround: Upgrade the switch version from 1.1.22 to 1.1.23 will solve the problem.
CSCdr25163	Details on this anomaly is not available at this time.
CSCdr26529	Details on this anomaly is not available at this time.
CSCdr28177	Symptoms: During a switchcc, VISM lines go into yellow alarm for a very short interval. Workaround: None.
CSCdr35833	Symptom: Both active and standby AUSM cards in a 1:n red configuration reset after a softswitch Conditions: Statistics collection should be enabled. Workaround: Try softswitch once again, if it fails again disable statistics and do softswitch.

Bug ID	Description
CSCdr36153	Symptom: Creating an LOS condition on an APS line causes multiple event log entries and traps. Workaround: None. The problem is fixed. A log message has been added to apsFsmProcess10msTimerExpired().
CSCdr36469	Symptom: cli required to display the novram contents of all the cards in the MGX8850. Workaround: The **dspnovram** command would display the novram contents of PXM and SRM. The **dspcd** command would display the novram contents for most of the service module except FRSM-HS1 cards. For RPM. the same can be achieved using **show rpm** command.
CSCdr38808	Available as a part of 1.1.30. No workarounds.
CSCdr41616	Unable to telnet to the active FRSM card even when there only one cc session initiated to that SM. This problem has been reproduced using two different scenarios that are noted in this case.
CSCdr41646	Symptom: No traps indicating SRM in the Standby state is sent. Conditions: This occurs when the PXM is in the Standby state after a reset. Workaround: None.
CSCdr42000	Symptom: Many error messages generated after the **clrsmcnf** command is used. Condition: If there are many connections on the MGX 8850 shelf with a SM, then this problem will occur after the **clrsmcnf** command is used. Workaround: None. However, those error messages are harmless, user should ignore them.
CSCdr43004	Symptom: The IMA Group goes down as soon as a local loop is initiated Conditions: This happens when one of the lines on the side which is configured for loop timing is put into local loop. Workaround: Reset the card. Further Problem Description: This is because the loopback programming for the LIU was not being done in case of BERT.

Bug ID	Description
CSCdr43216	The stand-by PXM and all service modules go into a failed stated after 64byte packet transmitted from RPM.
CSCdr43525	Symptom: Error Messages: CAN'T decrement portLcnUsed[cntrlType], already 0, slot 7, port 0 CAN'Tdecrement port lcnUsed, already 0, slot 7, port 0 appear after **delchan** of a management conn. Conditions: Seen in 1.1.24 Workaround: None.
CSCdr44024	The MGX and BPX defaults are consistent. The solution is to explicitly configure the framing. AXSM needs to be changed.
CSCdr44337	Symptom: **aveallcnf** creates 2 identical files Workaround: The **saveallcnf** creates one file with timestamp and the same is copied to <nodeName>.zip file. **Saveallcnf** is not restricted to run only once.
CSCdr44487	Details on this anomaly is not available at this time.
CSCdr45284	Symptom: While executing the command **clrsrmcnf,** there is no check before prompting the user of the confirmation. The error checking is done later. Conditions: When the command **clrsrmcnf** is executed with the wrong SRM slot number. Workaround: Enter a valid SRM slot number. This is fixed in 1.1.30.
CSCdr46692	Symptom: Queue Engine on PXM hardware supports programmable values for min rate and max rate for the virtual interface (VI is mapped to a port) Currently, max rate's default is 100% of the line bandwidth. Conditions: This is always the case. A new parameter has to be added in CLI/MIB to make this configurable. Workaround: None

Bug ID	Description
CSCdr46699	Symptom: PXM1 has a T3 interface. One connection is added from the VHS card at a full T3 rate to the PXM1 line1. Another connection. is added from FRSM8t1 card at a full T1 rate to the PXM1 line1 when data is sent at full rate on both connections, since PXM1 line1 is congested, cells are dropped. but cells were dropped only for T3 full rate connection, all cells for T1 rate connection went through. To be fair, proportional amount of cells should get dropped from both connections. Conditions: This is always the case, for the above setup. Workaround: None. By modifying the vi, qbin, and vc thresholds, some amount of fairness can be achieved.
CSCdr47445	Symptom: The Ethernet netmask reverts back to 255.255.255.0 after a switchcc. Conditions: Happens whenever the netmask in bootChange and cnfifip are different. Workaround: Set the bootChange IP address to have same netmask by adding a colon followed by a hex netmask; for example: '172.29.36.99:ffffff80' The default netmask in the boot line is 'ffffff00' which is equivalent to 255.255.255.0.
CSCdr48918	Symptom: The PXM will not be able to clock from the T1s in the IMA group. Conditions: When configuring clock using the command **cnfclksrc** on the PXM from a line in an IMA group in AUSM, you must select the line with the same number as the label of the IMA group. If the IMA group label is not the same as one of the lines in the group, then the PXM will not be able to clock from the T1s in the IMA group. Workaround: None.
CSCdr49478	Symptom: This is a one time occurrence. After a sequence of combination of adding and deleting SM redundancy and **clrsmcnf**, and connection deletion/addition, **tstcon** is not passing on certain connections. Conditions: Occurs when there is 1:1 redundancy configured between VHS cards. Workaround: Use CWM or CLI to delete connections on both slots when SM is configured with redundancy. Then use the command **clrsmcnf** to clear the port/line configuration.

Bug ID	Description
CSCdr50184	Symptom: **clrsmcnf** on RPM resets RPM. Condition: Not applicable. Workaround: Clearing RPM config can be done in 2 steps. 1. Erase NVRAM config on RPM. 2. **clrsmcnf** for RPM.
CSCdr51915	Details on this anomaly is not available at this time.
CSCdr53807	Symptom: The LED on a card is green even though the card failed. Condition: It occasionally happens that a card fails, but the LED does not change color, and remains green. Workaround: None.
CSCdr54042	Symptom: **Addred** fails to add a card to a 1:N redundancy set. Conditions: This problem occurs when a secondary card is Active in some other 1:N redundancy set Workaround: Softswitch to make the Secondary as a Standby in the first redundancy set, then perform the **addred**.
CSCdr56159	Symptom: CWM EM may show a physical line on PXM, even if the line is deleted. Description: Physical line delete trap is not sent to CWM when the line is manually deleted by CLI or SNMP. Workaround: None.
CSCdr57422	Symptom: Channel Active or Channel Added trap was not received by CWM. Workaround: None.

Bug ID	Description
CSCdr58123	Symptom: The card gets reset. Conditions: This problem occurs when a continuous **getnext** operation on the atmfVccEntry mib group is done via the ILMI protocol from the CPE side. Workaround: None. Further Problem Description: This problem is a duplicate of CSCdr61335.
CSCdr58168	Symptom: Some of the lines in IMA group become unavailable. Conditions: After a switchcc on the PXM, the AUSM-8T1 card starts displaying Minor Alarm. Some of the lines configured as a part of the IMA group became unavailable. The respective AUSM-8T1 card is in bulk mode. Workaround: None. Further Problem Description: Note that this problem is a duplicate of CSCdr66666.
CSCdr58189	Symptom: Alarm status is inconsistent for standby PXM card Condition: When there is an alarm on the active PXM, the standby PXM state is also displayed as a minor alarm while issuing the command **dspcds**. Workaround: None. It is working as implemented.
CSCdr58663	Symptom: The CLI command **restoresmcnf** won't work after SM redundancy is deleted (in bluk mode). Condition: Same as the above description. Workaround: None, but this bug has been fixed already in release 1.1.30.

Bug ID	Description
CSCdr59398	Symptom: PVCs get deleted after the cli **cnfportrscprtn**. Conditions: This condition results from using cli **cnfportrscprtn** if the new vpi range specified is shrinked beyond the existing values of the resource partition and existing PVCs use vpi values which lie between the old and the new range. Seen in 1.1.23 Workaround: None. Provide a proper vpi range so that all PVCs lie within range.
CSCdr59813	Symptom: The FRSM T1/E1 module has an egress HDLC queue scheduler which scheduled frames onto the logical egress queue. The rate at which this runs is not aligned with the logical port speed. Workaround: Have the queue scheduler schedule traffic out onto the HDLC framer queue at a rate aligned with the logical port speed.
CSCdr60198	The Arbiter PLD on the existing 4E backcards is not compatible with the PCI rev2.1 Port Adapter bridges that are used on the RPM400. However it does work with the older PCIrev2.0 bridges used on the RPM and RPM/B. The new PLD solves the aritration problem at the expense of some performance. Workaround: Use the new RPM 4E/B with the new arbiter PLD for RPM-PR. This card is backward compatible with RPM/B.
CSCdr61309	Symptom: MGX log fills up when the Frame Relay port is in alarm This generates the following error message: 05/27/1999-19:31:38 8 tlmi 4062 MSG Number error : Port: 98
CSCdr61335	Symptom: The card gets reset. Conditions: This problem occurs when a continuous **getnext** operation on the atmfVccEntry mib group is done via the ILMI protocol from the CPE side. Workaround: None. Further Problem Description: This problem is a duplicate of CSCdr58123.

Bug ID	Description
CSCdr61360	Symptom: When the AUSM Card is receiving AIS from the network side as well the A-bit alarm from PXM, it passes the received AID towards the port side as well as generates its own AIS, thus sending duplicate AIS on the port side. Workaround: None. Further Problem Description: The duplication of AIS has to be stopped as part of the fix.
CSCdr61374	Symptom: 1. The idle flag in **dspchans** seems to constantly toggle from Yes to No (even though Detection and suppression is disabled) 2. The on/offhook indicator seems to toggle when **dspchancnt** is viewed. 3. The throughput of the channels go down. Conditions: The situation is triggered when idle suppression-related cells are received by CESM under the erroneous behavior of the network. Workaround: Deleting the erroneous connection and readding should solve the problem.
CSCdr61544	No information is available about this anomaly at this time.
CSCdr61803	Symptom: After issuing the **clrsmcnf** command and while it is in progress, entering control-c to stop the CLI will cause subsequent **clrsmcnf** to be issued on that same slot, leaving the slot in a reserved state. Condition: After resetting the service module in the slot, the card becomes active again, **clrsmcnf** can not be resumed (aborted). Workaround: Wait until the **clrsmcnf** operation is complete. Don't issue control-c to stop the operation.
CSCdr62285	Symptom: When running BERT tests on CESM lines or ports, the PXM might report a general error. Condition: This problem is caused whenever PXM sends a BERT message to CESM with a Qid = 0. Bert m with Qid = 0 are reserved for intercard purposes in CESM; hence, CESM will not reply to those messages. This causes the PXM to time out. Workaround: None. User has to reinitiate BERT on the port or line.

Bug ID	Description
CSCdr62322	Symptom: Some of the BERT test patterns, for example, QRSS, fail to synchronize with the new CESM-8T1 card. Workaround: None.
CSCdr62361	Symptom: Able to configure line parameters on a FRSM when BERT port tests are running. Conditions: The problem occurs in the following scenarios: Scenario 1: When the line parameters configured and the line parameters given for configuration are the same, the Framer will not be reprogrammed. There is no ERROR returned in this case (irrespective of whether BERT is Enabled or Not). From the BERT point of view, it doesn't mean that line parameters got modified, just because ERROR is not flagged. Scenario 2: When Framer needs to be reprogrammed, for example, when the configured and given line parameters are different, and if BERT is Enabled, an ERROR is flagged. Workaround: None.
CSCdr62370	Symptom: BERT pattern tests on the SRM-3T3-C are intermittently not synchronized with the FRSM-8E1 module. Workaround:
CSCdr63304	Symptom: On the reception of segment loopback oam cells on the AUSM port, the counter gets incremented (PortXmtSgmtLpbkCells). On clearing the port counters, this counter does not clear. Conditions: When segment loopback OAM cells are received on the AUSM port. Workaround: None.
CSCdr63533	Symptom: When a line is configured in remote loopback, **dspcd** does not indicate a remote loopback. Condition: This occurs each time the remote loopback is configured. Workaround: None.

Bug ID	Description
CSCdr66666	Symptom: Some of the lines in IMA group become unavailable. Conditions: After a switchcc on the PXM, the AUSM-8T1 card starts displaying Minor Alarm. Some of the lines configured as a part of the IMA group became unavailable. The respective AUSM-8T1 card is in bulk mode. Workaround: None. Further Problem Description: Note that this problem is a duplicate of CSCdr58168.
CSCdr68155	Symptom: Sometimes the disk update messages for the simulated delete connection/delete port done when the **clrsmcnf** command is issued occurs after the database is removed (as a result of **clrsmcnf**). These update messages are harmless, and do not create any problems. Workaround: None.
CSCdr69994	Symptom: Standby card mir/pir/qir does not get changed when they are changed on the active card. Workaround: Do a softswitch and switchback.
CSCdr70797	Symptom: When a line is put in a remote loopback, the port is put into alarm and hence the connections, in which case AIS as well as data traffic are sent to the CPE. Conditions: This happens when the line is put into remote loopback. Workaround: None. Further Problem Description: Due to a hardware limitation the data traffic cannot be stopped from going to the CPE, hence the AIS transmission will be stopped in case the line is put into remote loopback. Do not put the port and connection into alarm like the local loopback.

Bug ID	Description
CSCdr70820	Symptom: In 1.1.24 PXM in a SweetPea chassis came up as MGX8830 and as a routing node. Conditions: None. Workaround: This has been fixed, so that it comes up as MGX8230 and the default configuration is changed to be feeder node. If **dspswfunc** shows the node to be routing node it can be configured to feeder using **cnfswfunc**.
CSCdr71479	Symptom: Lines on AUSM/B in slot 9 of MGX 8850 are failed upon switchover to redundant AUSM/B. Conditions: When using 1:N redundant configuration with AUSM/B in slot 9 of MGX 8850, all lines are placed into alarm upon switchover to the redundant card. The line status is correctly returned upon a switchover back to the AUSM/B in slot 9. This was observed in 1.1.21 and 1.1.23. Workaround: Only known workaround is to not use slot 9 for an AUSM/B card.
CSCdr72963	Symptom: When PSU fails, alarm event does not appear in dsplog.It appears on Eventlog of CWM. Conditions: This occurs when there is a power supply failure. Workaround: Get the PSU failure information from NMS, CWM. Also CLI command **dspshelfalm** gives status of PSU. Further Problem Description: Only trap is sent to CWM, the event is not logged.
CSCdr74393	Symptom: APS bidirection non-revertive mode Interoperability with Sentient does not work. Condition: APS interoperability with the Sentient Workaround: None

Bug ID	Description
CSCdr76747	Symptom: When using CNFBERT local loop or no loop due to having a hardware loop on the physical ports of a FRSM 8E1, it is observed that the bert test does not run error free. Tests show that the local loop bert test errors when using 1.1.23 but in previous 1.1.12 has zero bit error count. Test was re-performed using AUSM in 1.1.23 and zero bit errors were recorded. Conditions: Lab environments of both heavily loaded nodes or nodes with only PXM,FRSM,SRM Workaround: None.
CSCdr76819	No known workarounds. Fixed in 1.1.30
CSCdr77088	Symptom: Node hangs due to the back card going bad. Conditions: Sometimes when the back card is going bad, the line oscillate between ok and LOS condition. When this happen, there are flood of messages between the active and standby PXM. Workaround: Remove the bad back card.
CSCdr80198	Symptom: oldiags fails the framer test when run on a PXM1 with an OC3 daughter card and debug level 3 is used. Conditions: PXM1 with OC3 daughter card and oldiags is invoked with debug level 3. Workaround: Don not run oldiags with debug level 3. Use debug level 0-2.
CSCdr81334	Details on this anomaly is not available at this time.
CSCdr82396	Symptom: **srvovrd** option is not functioning in **cnfchansrvrate** command. Conditions: Add connection on a line. modifying the channel service rate (srvrate) with service override (srvovrd option) disable, the channel service rate is getting updated. But it shouldn't happen. This condition exist: 1) with zero cir connection 2) with non-zero cir connection Workaround: None.

Bug ID	Description
CSCdr83869	Symptom: There is no command to display trunk utilization. Condition: Applies to PXM release prior to 1.1.30. Workaround: None.
CSCdr86099	Symptom: **clrportcnt** does not clear the counter EgressPortQFullDiscardCells. Condition: When there is EgressPortQFullDiscardCells in the rt-vbr connection. Workaround: None. Further Problem Description: This counter was not being cleared, this has been cleared in the fix.
CSCdr86885	Symptom: Frames get DE Tagged even though DE Tagging is disabled. Conditions: When user pumps traffic greater than CIR, and Bc bucket becomes full, frames get DE tagged even though DE tagging is disabled. Workaround: None.
CSCdr87800	Symptom: PVCs could be added on reserved VCCs (i.e. with VPI = 0 and VCI between 0 and 31 without an appropriate warning message.) Workaround: A warning message is displayed now whenever a PVC is added on a reserved VCC. Unit test: Add a connection with VPI = 0 and VCI between 0 and 31. See that appropriate warning message is displayed, but channel addition goes through.

Bug ID	Description
CSCdr88653	Symptom: chanDEtoCLPmap resets to default value whenever channel configuration is changed. Conditions: This will occur when ever user modifies the channel configuration after configuring chanDEtoCLPmap to the required value. Workaround: Whenever user wants to modify the channel configuration, chaneDEtoCLPmap has to be included in the channel configuration. Further Problem Description: This occurs because, whenever the user modifies the channel configuration, chanDEtoCLPmap is reset to default values when user does not provide value to this object. So whenever user modifies other channel configuration, this object has also to be set to required value.
CSCdr89017	Symptom: oldiags will eventually use up all file descriptors on the system when run in a loop. Conditions: Run oldiags in a continuous loop. Workaround: None.
CSCdr90273	Symptom: Connection gets added even though DLCI for the remote FR Port is not specified. This connections gets added with remote end's DLCI taken as 0. Conditions: This occurs when **addcon** command is executed without specifying the remote end's DLCI. Workaround: User has to enter the remote end's DLCI while adding the connection.
CSCdr90512	Symptom: Not able to collect statistics from the MGX8850 Release 1 shelf. Conditions: All different types of statistics for ports, channels and lines are enabled. Workaround: Reduce the number of statistics collected.
CSCdr90635	Problem Description: **xcnfcon** displays the range of VPI/VCI as VPI 1-4095 sometimes 0-255 VCI 1-65536 Also sometimes the display is Hex based as 0xff and 0xffff The info needs to be correct and made consistent through out.

Bug ID	Description
CSCdr90658	Even though through **xaddcon/xcnfcon** displays 38328 cps as the maximum value if calculated correctly it should have been 38312 cps, do not configure it to a maximum of 38328 cps.
CSCdr90871	Symptoms Customer is requesting additional information be provided in the log file when a PVC is deleted. Customer indicates it would make it easier for isolating problems. Currently only the channel number is provided in the log. Conditions Deleting a channel Workaround None
CSCdr90909	Symptom: oldiags running on a MGX8230 refers to slots 7 & 8 as PXM slots. Should be slots 1 & 2. Conditions: Issue oldclralm and the usage message is: USAGE: oldsplog <slot_number (7, 8) Workaround: None.
CSCdr90987	Symptom: **cnfclklevel** command succeeds for level 3 even if the old PXM UI backcard is used. Conditions: The problem happens under all conditions Workaround: None Further Description: This is cosmetic in nature. The command actually failed but it did not display the error message to the user. Fix needs to be added to the code to print this error message
CSCdr91331	Symptom: Configurations, like bulk mode SRM configurations, seen in unused slots of the shelf. Conditions: This could happen when configurations like bulk mode SRM configurations exist on a standby PXM which when moved to another standby PXM slot in a new shelf, could cause the original configurations to be retained. These configurations could then become active after a switchcc is performed & the standby PXM becomes active.
CSCdr91665	Symptom: displayShelfBanner on Standby PXM does not display the right banner. Conditions: Irrelevant

Bug ID	Description
CSCdr92373	Symptom: PUBLIC community string should be "READ-ONLY", on MGX "PUBLIC" can be used to write by SNMP. Conditions: SNMP Set to any READ/WRITE MIB Object with community string set to "PUBLIC" will go through. This should return an error. Workaround: Do not consider SNMPv1 as secure, additional (firewall security) should be provided. There is no workaround except that currently there is no READ-ONLY community string. CWM takes care of this problem. Further Problem Description: snmpAgent should be fixed to support "READ-ONLY" community string of PUBLIC. Will be fixed in future releases.
CSCdr93342	Details on this anomaly is not available at this time.
CSCdr93376	Details on this anomaly is not available at this time.
CSCdr93664	Symptom: Unused slots on 8250 show up as “reserved” even after a **clrallcnf**. Conditions: This could happen after the active PXM is transferred from an 8230 shelf to an 8250 shelf. Workaround: None.
CSCdr95869	Symptom: Programming the new Novram fails. Condition: The new Novram(AT93C66) required a different programming sequence. Workaround: None.

Bug ID	Description
CSCdr96138	Symptom: Tried to configure the transmit FEAC code to be 'dsx3SendPayloadCode' on DS1s which should be rejected since DS3 application on PXM is unchannelized. **dsplog** shows that the transmit code is invalid but CLI accepts and configures it. r8250-1.1.7.PXM.a > cnfln -ds3 7.1 -tfeac 3 r8250-1.1.7.PXM.a > Conditions: It happens under all conditions Workaround: None Further Description Check needs to be added in the firmware to see if the card is PXM then do not allow the dsx3SendPayoadCode on DS1s. This option is only applicable for channelized DS3s (SRM 3T3)
CSCdr98433	Symptom: PXM log is required for addition and deletion of SM redundancy Condition: No logs while adding and deletion redundancy for SM. Workaround: Made changes to the code so that the logging will take place whenever addition or deletion of SM redundancy happens files changed redUI.c and cliRedundancy.c in POP1PRET5 branch
CSCdr98519	Symptom: Login, logout and all user commands must be logged Condition: Rate limit was there for all the commands so login, logout and all user commands were not logged every time. Workaround: Login, logout and all user commands will be logged from now on files changed cli_msgs.h in pop1pret5 branch
CSCdr98578	Symptom: 1. Parameter fields for command **dspalms** is not preceded with a -example: **dspalms** ds3 | e3 | SONET instead of **dspalms** -ds3 | -e3 | -SONET 2. Command lists option **plcp** for the alarmtable, which is of no use here. Condition: Executing command **dspalms** Workaround: None.

Bug ID	Description
CSCds00987	Symptom: The display format for CLI **dspchans** was misaligned. Condition: When the CLI **dspchan** executes in the presence of rt-vbr connections. Workaround: None.
CSCds01023	Details on this anomaly is not available at this time.
CSCds01417	Symptom: There was no range checking for port and queue numbers in case of CLI **dspportq**. Condition: When executing the CLI **dspportq**. Workaround: None. The fix is taking care of range checking for port and queue numbers in CLI **dspportq**
CSCds01472	Details on this anomaly is not available at this time.
CSCds03072	The soft reset path on the RPM400 rommon is not re-initializing the TLB correctly that causes RPM400 card not coming up. The new rommon placed a work around on soft reset to look like a POR, which can make sure the card will come up properly.
CSCds03756	Symptom: The object chanServType is missing in the tftp config upload file. Conditions: When user uploads the tftp config file, he can see chanServType object missing. Workaround: None.
CSCds04145	Details on this anomaly is not available at this time.
CSCds04372	Initial Burst Size behavior (IBS) is not functioning correctly for the ABR connections.
CSCds04697	Trap couldn't see beyond 700 connections because PXM only allows up to 700 table entries. Workaround: The table now allows 2000 entries.

Bug ID	Description
CSCds05006	Symptom: If a SRM line with a loopback is deleted, the next time this line is added, the loopback value will not have the default 'noloop'. The loopback value will be the previous value instead of the default value. Condition: When a SRM line is deleted and readded. Workaround: Configure the desirable loopback value after adding a line.
CSCds05040	Symptom: The major alarm LED on the active and the standby PXM on MGX8850 are on, while the CLI commands do not show any indication of alarm. Conditions: If the SRM back card in the redundant core card set is removed and reinserted, the alarms on the shelf will be clear, but the MAJ alarm LED alone will be left turned on. Workaround: Perform switchcc to clear the LED.
CSCds05374	Symptom: When user adds pvc on MGX service module to feeder trunk and leaves out the remote vpi.vci in the syntax the system accepts the command and adds a pvc with a remote vpi.vci of 0.0 The system should not accept this command and make the user add it again with correct syntax of remote node.slot.port.vpi.vci
CSCds05580	Symptom: On doing a **dspcon** on a PXM connection, the remote end LCN is displayed as 0. Conditions: This has been observed once by the submitter of this bug. Workaround: None.
CSCds05593	Symptom: 1. Setup local loopback on SRM and any SM. Both will display AlarmState LocalLoopback This does not show up on **dspcds**. 2. Issue a **clralm** on the SRM and the AlarmState clears. Issue a **clralm** on any SM (AUSM, FRSM, CESM) and the AlarmState does not clear. Condition: Setup local loopback on SRM and any SM. Workaround: None.

Bug ID	Description
CSCds05978	Symptom: On trying to use option "*" for VCI in the **cnfilmi** command as specified in the CLI help, the command returns an error. Conditions: Will happen on attempting to configure ilmi with VCI="*" on ausm-8t1e1 cards. Workaround: Do not use the option "*" for VCI in the **cnfilmi** command.
CSCds06755	The AUSM **xcnfilmi** CLI command options do not match the “usage” message- the “mei” and “-ar” options are not displayed as available command line options. Also, option “-pti” is shown as usage option “-pt”.
CSCds07114	Details on this anomaly is not available at this time.
CSCds07411	Symptom: FEAC DS3 OOF are seen at the far end of a FRSM-2T3 Workaround: Call the TAC. The workaround requires very experienced personnel.
CSCds07944	Symptom: **clralmcnt** -ds3 does not clear the counters. Workaround: Use **clralms** -ds3
CSCds08528	Details on this anomaly is not available at this time.
CSCds09448	At present CWM is setting %util values(lper_util, rper_util) to -1. CWM will get these values from * TFTP config UpLoad File * SNMP UpLoad file. CWM will parse these values and update Database. For FSRM(4T, 4E, 8T, 8E.), AUSM, VISM, CESM cards we are not getting lper_util & rper_util values in TFTP upload and SNMP upload fields. But these values are there on CLI. It is required to have these %util values in TFTP & SNMP config Upload files for all cards, so that CWM can prase these values and populate in DataBAse
CSCds09808	rpmChanMidLow and rpmChanMidHigh are referred as message ID for PVC connections. They are read only numbers and are generated by **addconn** command. So this is why you can not change its content after it has been assigned by PXM. 0 is an invalid number, this is due to the connection wasn't made successfully across from one PXM to another PXM via a BPX. When you do **dspconn**, ABIT ALARM shown next to a connection is an indication that connection wasn't made across.

Bug ID	Description
CSCds10270	Symptom: When a OC-12 feeder trunk is configured as 1+1 unidirectional mode, the PXM-622 OC-12 line on slot 7.1 of peartx40 MGX node did not have the option in specifying whether the “working” or “protection” line would be applied upon an external request such as “Manual Switch” and “Forced Switch”. This will prevent the capability to allow a user to change a request from “MS: W->P” to “FS: W->P” directly. Conditions: With APS configured and trying to do **switchapsln**. Workaround: None
CSCds10279	Symptom: Request for user-friendly aps status information. Conditions: If APS is configured in the system, more information may be required for debugging. Workaround: Use the **dspapsln** and the **dumpaps** commands. For decoding K1 and K2 information use standards document
CSCds10286	Symptom: The PXM displays the incorrect error message when trying to switch aps line using **switchapsln** CLI. The error message seen is “Manual Switching is blocked by SF or SD on PROT line” which is incorrect when the switch is being attempted from Protection line to working line. Conditions: An OC-12/OC3 trunk/line is configured as 1+1 unidirectional mode on the PXM. When the working line is in LOS and a MS aps switching request is made, the PXM incorrectly shows the request is blocked by SF or SD on protection line. Workaround: None. This is an erroneous message and can be ignored.
CSCds10287	Symptom: An APS protection switch has occurred because of line alarm and when the status of **dsptrks** and **dspalms** are checked they indicate that the lines are clear. Conditions: An OC-12/OC-3 feeder trunk/line is configured as 1+1 unidirectional mode on the PXM. When the working line is in LOS, both **dspalm** and **dsptrks** fail to display a correct alarm status. Instead, they display “Clear” on the line in failure. Workaround: The **dspapsln** and **dumpaps** commands can be used to obtain the APS and line status. The **dsptrks** will show clear because data traffic is not impacted.

Bug ID	Description
CSCds10377	Symptom: When one of the OC-12/OC-3 lines are in alarm the CLI **dspapsln** shows the line status as “ALM” instead of specifically indicating LOS/LOF. Conditions: When a OC-12/OC-3 line/trunk configured for APS goes into alarm because of LOS or LOF. Workaround: Use the **dspalm** CLI command to obtain the correct alarm status.
CSCds10765	Symptom: Software error 20304 was observed during **resetsys/switchcc**. Conditions: Software error 20304 is logged during resync, when database inconsistency is detected. This is a rare occurrence, not been reproduced. Workaround: None
CSCds11325	Symptom: There were cases reported where the AUSM-8 card reset on its own mostly when SNMP sets were being done on the card. The AUSM-8 card used to report a “WatchDog Timeout Reset” to the PXM in these cases, which could be seen using the command **dsplog** on the PXM. Conditions: It was noted that in most cases, the WatchDog Timeout reset happened when SNMP scripts doing **snmpsets** were being run on the card. For example, when an SNMP script was continuously adding connections on the card using **snmpsets**. Workaround: None.
CSCds11410	Symptom: The **xcnfalmcnt** command accepts any parameters and does not display any error messages. Conditions: When the **xcnfalmcnt** command is executed with invalid parameters. Workaround: None.
CSCds11679	No known workarounds. To be fixed in later releases.

Bug ID	Description
CSCds13629	Symptom: Issue **clrallcnf** on PXM, RPM400 failed to erase the connection setup in NVRAM. Conditions: **clrallcnf** wasn't able to clear all the connections NVRAM as seen on RPM400 was because **clrallcnf** command was aborted in the mid-way by "corrupted" NVRAM. Two criteria to determine NVRAM is bad, bad NVMAGIC number or checksum error. This is due to the ROMMON was compiled on cosmos branch instead of del_t branch. Fix/Workaround: I have placed a work round in the new rommon re-initialize rpm400 properly. Eventually when cosmos branch is successfully merged to del_t via del_t_pi4 in the future. All the problem will be gone.
CSCds13806	Symptom: Whenever a SM card is reset & the card remain stuck in boot state even though the firmware versions of the SM are on disk. Conditions: This happens every time a **dspsmcnf** command is issued on the PXM just before resetting an SM card. Workaround: Do not use the **dspsmcnf** command at any time. If it has to be used then the shelf will have to be reset for the condition not to occur.
CSCds14812	Details on this anomaly is not available at this time.
CSCds15610	Symptom: PXM takes long time (10 + mins) to reprogram the connections after power recycle. Conditions: Lot of connections have been added before the power recycle. Workaround: None.
CSCds15835	Details on this anomaly is not available at this time.
CSCds16990	Symptom: When issue **clrsmcnf**, an "auto:upLoadBram, Read file failure" can be seen on screen Condition: Unknown Workaround: Unknown
CSCds16997	Details on this anomaly is not available at this time.

Bug ID	Description
CSCds17001	Symptom: Log file cannot be found for a particular slot Conditions: Use **dsplog** command with invalid option Workaround: Give valid option. Use **dsplog** ? for all valid options Further problem description: When receiving a command with invalid option, system should return error for unknown option.
CSCds18374	Symptom: Reset of a FRSM-HS2 card corrupted the PXM card type matrix and so it started displaying improper card types. Conditions: It's highly likely that some other operations done before this one would have already triggered the problem. So the submitter needs to analyze that and see if the problem can be reproduced. Workaround: Based on the snapshot attached in the Description note, following steps should be followed: Ungraceful: Perform a **resetsys** on the node. This will cause all the cards in the node to get reset. It'll take approx. 5 minutes for the whole node to come up depending upon the load. Graceful: 1. reset Standby PXM first. Wait for it to come up to Standby. 2. Once it is displayed properly in **dspcds** output on Active PXM, perform a switchcc This will reset the current Active PXM. Wait for it to come up to Standby. 3. Now reset all the SMs shown wrongly in the **dspcds** one by one.
CSCds18459	Details on this anomaly is not available at this time.
CSCds18513	Details on this anomaly is not available at this time.
CSCds18524	Details on this anomaly is not available at this time.
CSCds18760	Details on this anomaly is not available at this time.

Bug ID	Description
CSCds18765	**cnfupcabr** on the AUSM-8 currently does policing on PCR(0+1) as the first leaky bucket and on SCR as the second leaky bucket. The second leaky bucket has to be changed to MCR, with an option of choosing the type of policing needed (already available). Typically Standard ABR connections need to be policed only on one bucket i.e. the PCR(0+1) bucket. Currently VBR, rt-VBR and Foresight ABR connections have two buckets each for policing - PCR(0+1) and SCR. Standard ABR policing needs to be done on PCR(0+1) only. But for consistency with the PXM (**cnfupcabr**), Std ABR policing will be done on PCR(0+1) as the first bucket and with ABR-MCR as the second bucket, with an option in **cnfupcabr** to turn second bucket policing off (as is with SCR for ForeSight ABR). But it is important to note that during firmware Upgrade, especially for existing abr.1 connections (Transparent ABR connections with ForeSight disabled), policing will still be done based on SCR value immediately after Upgrade. This is to avoid sudden traffic pattern changes during Upgrade. The user should know that for all commands executed here after (after Updrage) whenever the ABR MCR value is changed, the policing function will get affected since policing for Standard ABR connections will be done on MCR. The command help for **cnfupcabr** has been modified. The new **cnfupcabr** has changes in the SCR parameter description. Note that when MCR (for Std ABR) or SCR (for ABR.FS, VBR) is specified as 0 using this command, then the existing value of MCR (or SCR) will be retained.
CSCds19141	Details on this anomaly is not available at this time.
CSCds19155	Symptom: **tstcon** passes for a deleted side of connection. Condition: Add both slave and master end of connection. delete the slave end. run **tstcon** from the master end. Workaround: None. SAR does not verify the connection existence before replying for the **tstcon**.
CSCds19333	Details on this anomaly is not available at this time.
CSCds19363	Details on this anomaly is not available at this time.
CSCds19477	Details on this anomaly is not available at this time.
CSCds19934	Details on this anomaly is not available at this time.
CSCds20497	Details on this anomaly is not available at this time.
CSCds22296	Symptom: atmfAtmLayerMaxVciBits object returns a value of 12 when queried from the CPE via ILMI. Because of this Vci's greater that 4095 cannot be added to interoperate with the CPE. Workaround: None Fix Made: Changed atmfAtmLayerMaxVciBits to 16 from 12.

Bug ID	Description
CSCds22476	Symptom: The port takes a long time to come out of failure even though ilmi Keep Alive polling is enabled on both ends. Condition: The incoming pdu's id is not checked against the ilmi request id. Workaround: No workaround.
CSCds22479	Symptom: The port will not change state even though the Keep Alive ilmi polling is enabled/disabled. Condition: When the ilmi Keep Alive polling is enabled/disabled the port status does not change accordingly i.e. it does not go into ilmi signalling failure/ come out of ilmi signalling failure Workaround: No workaround.
CSCds22483	Symptom: The address registration is not disabled when ilmi signalling is disabled. Condition: When disabling ilmi on a port using the **cnfilmi** cli the address registration option is enabled. eg. cnfilmi <portno> 2 0 16 2 1 2 2 Workaround: While disabling ilmi on a port also disable addressregistration. eg. cnfilmi <portno> 2 0 16 1 1 1 1
CSCds22489	Symptom: If a port, down due to ilmi failure is deleted and added again the ilmi failure on the port does not clear. Condition: The port alarm is not cleared when the ilmi is cleared. Workaround: The ilmi port alarm should be clear by enabling ilmi keep alive polling and then the port is to be deleted.

Bug ID	Description
CSCds23602	Symptom: The BERT pattern test for FRSM-8T1 and CESM-8T1 cards reports a high Bit Error Rate Conditions: No specific conditions. Problem happens every time a BERT test is run on FRSM-8T1 and CESM-8T1 cards. Workaround: On Active PXM, inside shellConn set the flag newPxmWithOldSmPre1130 to 1
CSCds23604	Details on this anomaly is not available at this time.
CSCds24602	Symptom: Data loss after a AUSM E1 card reset. Condition: This problem happens on all AUSM E1 cards with firmware version prior to 1.1.30. Workaround: Execute the **cnfplpp** command and disable the scramble option. Note that though **dspplpp** shows no scrambling, the actual framer programming is not done. **cnfplpp** command takes care of that problem. Unit test after fix: One test that can be done is to have an IMA group active on the card with the lines in the IMA group configured in the "No Scramble" mode. Have connections on this IMA group with traffic flowing. Do a **resetcd** and confirm that the IMA group is not down, and traffic continues to flow on the connections.
CSCds25261	Details on this anomaly is not available at this time.
CSCds25992	The command **cnfplpp** configures a line even when the line has not been added/enabled.
CSCds26096	Details on this anomaly is not available at this time.

CSCdm22510

The NNI part of the connection is working correctly. A=0 is being sent from the tester to the local port of the FRSM and the remote port of the FRSM is sending A=0 to the remote port of the tester. However, Test Suite 16 of Bellcore's Frame Relay Protocol Conformance Certification Test Suites states "Since the active /inactive indication is independent of direction, the IUT(FRSM) Local port (DLCI 16) should transmit STATUS messages with ACTIVE status to the local test equipment." In other words port 1(Local port) of the FRSM should also transmit A=1 back to port 1(Local port) of the tester. This is stated in Frame Relay Forum Document No. FRF 2.1 Frame Relay Network-to-Network Interface Implementation Agreement. This was verified by Bellcore Engineer:

The last sentence of the expected results statement: "Since the active/inactive indication is independent of direction, the IUT Local port (DLCI 16) should transmit STATUS messages with ACTIVE status to the local test equipment." is correct as stated. This statement actually reflects a requirement from FRF 2.1 Section 4.2:

"PVC status information from full status reports and optionally from single PVC asynchronous status reports shall be propagated towards the user-to-network interface (UNI) of the multi-network PVC. The PVC status information element active bit state signaled at the NNI is independent of the PVC status information element active bit state signaled in the other direction at the same NNI."

Bidirectional status signaling requires that a user side process and a network side process execute concurrently. Nowhere in the requirements, Annex A, Annex D, FRF 2.1 does it state that these processes share information. They are totally independent. PVC status is signalled to the local user based on the service affecting conditions or PVC status signaled from the remote user side.

FRF 2.1 Section 4.2 Polling requirements of network-to-network interfaces

Two sets of sequence numbers and local in-channel signalling parameters are administered for the network-to-network interface as shown below; see the table for parameter ranges and default values.

user side procedures - T391, N391, N392, and N393

network side procedures - T392, N392, and N393

The table below summarizes the acceptable values when using bidirectional procedures at the NNI. The default values should be used as the actual system parameter values. Parameter values other than the default values are a subscription time option. Procedures for starting and stopping T391 and T392 are described in Q.933 Annex A.

Table 1 NNI System Parameters

Name	Range	Default	Units	Definition
N391	1-255	6	Polling Cycles	Full status (status of all PVCs) polling cycles.
N392	1-10	3	Errors	Number of errors during N393 monitored events which cause the channel/user side procedures to be declared inactive. This number may also be used by the user side procedures as the number of errors during N393 monitored events which cause the network side procedures to be declared inactive.
N393	1-10	4	Events	Monitored events count.
T391	5-30	10	Seconds	Link integrity verification polling timer.
T392	5-30	15	Seconds	Timer for verification of polling cycle.

Both networks are required to initiate status enquiry messages based on T391. A full status report is requested each N391 (default 6) polling cycles. Both networks shall have the same values for T391, T392, N392, and N393 for both user side procedures and network side procedures; N391 is not required to have the same value in both networks.

PVC status information from full status reports and optionally from single PVC asynchronous status reports shall be propagated towards the user-to-network interface (UNI) of the multi-network PVC. The PVC status information element active bit state signaled at the NNI is independent of the PVC status information element active bit state signalled in the other direction at the same NNI.

Note In addition, when a PVC segment's active/inactive status has changed, or a PVC segment has been newly added or deleted, the network should respond to any poll (i.e., status enquiry) with a full status report. Alternatively, the network may generate a single PVC asynchronous status report to convey the PVC segment's status change.

Known Anomalies for RPM release 12.1(1)T

1. The show **rscprtn** command on RPM will always display the state as “out of sync”. This does not necessarily mean that the config on the PXM and RPM are out of sync. The PXM software 1.1.23 does not fully recognize a particular message from RPM and hence assumes that it is out of sync.

   The user will still be able to add the connections. The only side effect is that there will be a syslog entry (and a message on the console, if not under telnet) every five minutes.
2. WRED feature on the PA-A3 RPM is not functionally working.

Known Anomalies for RPM Release 12.0(5)T1

These RPM anomalies are tied to its function with the MGX 8850. For generic IOS issues, refer to the 12.0.5T1 release notes.

- Under heavy load conditions from multiple sources, RPM performance may degrade (CSCdk91818)
- Some RPMs may not boot when more than 8 RPMs are booting simultaneously from the PXM hard disk (CSCdm14987)
- UBR connection for RPM is not supported from CWM, even though the CLI can support it

  Note For more details refer to the CWM Release 9.2.05 release notes part number 78-6659-05
- The ABR service type is not supported in 12.0.5T1/120.5.T1 release of MGX/RPM but the CLI does not restrict the provisioning.
- Under heavy load conditions the counter (input queue size, packet output byte size) values reported may be incorrect particularly with Tag VP configuration.
- It is required to allow OSPF and MPLS to converge while adding connections continuously. Otherwise, it will load the CPU and cause CPUHOG condition. Under such condition the IPC channel is not serviced which in turn will cause PXM to declare RPM in Failed state.

  This problem will not occur when either enough time is given to the protocols to converge or the newly added connections are just added without enabling these protocols, and later these protocols are enabled on them.

  To avoid this condition, you may limit the tag PVP connections to 75 or fewer. Above this, the TDP updates may create a CPUHOG condition (with CPU utilization very high). This in turn will break the IPC channel between PXM and RPM, and PXM will declare the RPM as Failed.
- It is not recommended to shut the switch interface. Doing so will remove the connection to the MGX cell-bus and all connections will go down. It also generates some trace back error messages, which are benign. The 120-5.T image does not provide any caution or warning when the command is entered.
- In some instances you may see RPM_VIRTUAL_PORT-3-IPCERR indicating that RPM was not able to convey the existing virtual port information to PXM. This situation is more likely to happen after **clrallcnf** is executed or the card is reset. At this point the connection database gets out of sync between RPM and PXM, and RPM experienced a problem in connection resync. However the connection eventually comes up successfully.

  If not, the saved config needs to be copied to running config by “copy” command.

- In multi-point configuration with inverse ARP, it is recommended to decrease the frequency from the default value of 15 min to 1 min.
- If you are unable to overwrite on an existing config file on PXM disk and are getting the:

  %error opening c: filename (bad file number)

  message then delete:

  (rm <filename>)

  the existing file and then copy the new file.
- In 120-5.T release when RPM re-loads, the "Status" column in the output of the "show switch connections" command show "MISMATCH" for all the connections or for a few connections even though the connections are fine and traffic passes through them without any problem.

  If the PVC leg of the connections is added using the **pvc** command, then the "VCD" is chosen automatically for those PVCs. If the RPM is reloaded, then these VCD values might change. If they do change, then those connections will appear in the mismatched state.

  This condition does not affect traffic. The problem can be avoided by using the **atm pvc** command which requires the user to specify the VCD value explicitly in the command. The "show switch connections **nextvcd**" command can be used to determine a VCD value that can be used with the **atm pvc** command.

  In the event that the **pvc** commands were used and the connections go into the mismatched state, they can be cleaned up by re-adding the affected connections or if all the connections are affected and all of them are in the mismatched state, they can all be re-added using the "copy startup-config running-config" command.

  This problem is fixed in the 120-5.T1 release.

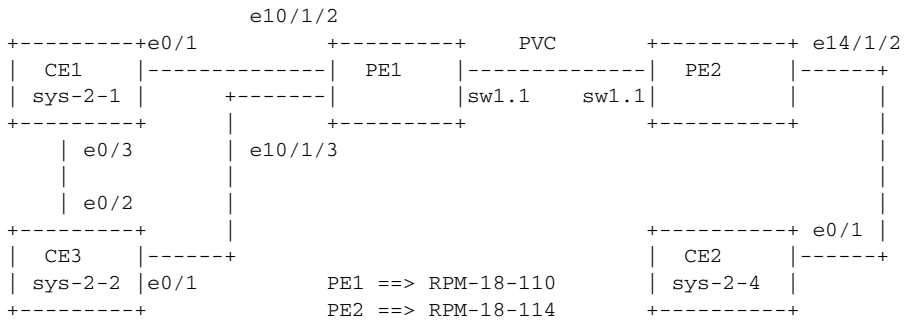
RPM Configuration Examples for MPLS-based Virtual Private Networks

The following are MPLS VPN examples with MGX/RPM. These examples will be included in the online version of the *Cisco RPM Installation and Configuration* publication.

One PE - Two CE Configuration

The following is a one PE and two CE VPN configuration.

Note Both RPMs are in the same shelf or chassis.



One PE - Two CE Configuration - OSPF & IBPG Between PEs & EBGP between PE-CE

CE1 Configuration:

```
sys-2-1#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-1
!
boot system tftp mpls/12.0/c3620-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 12.12.12.12 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.1 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 50.0.0.1 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/3
 ip address 52.0.0.1 255.0.0.0
 no ip directed-broadcast
!
interface Serial1/0
 no ip address
```

```
 no ip directed-broadcast
 shutdown
 no fair-queue
!
interface Serial1/1
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router ospf 100
 redistribute bgp 101
 passive-interface Ethernet0/1
 network 12.0.0.0 0.255.255.255 area 100
 network 52.0.0.0 0.255.255.255 area 100
!
router bgp 101
 no synchronization
 network 12.0.0.0
 network 13.0.0.0
 network 50.0.0.0
 network 51.0.0.0
 network 52.0.0.0
 neighbor 50.0.0.2 remote-as 100
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-1#
sys-2-1#
```

CE2 Configuration

```
sys-2-4#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-4
!
boot system tftp mpls/12.0/c3640-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 14.14.14.14 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.4 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 53.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router ospf 100
 redistribute bgp 102
 passive-interface Ethernet0/1
 network 14.0.0.0 0.255.255.255 area 100
!
router bgp 102
```

```
 no synchronization
 network 14.0.0.0
 network 53.0.0.0
 neighbor 53.0.0.1 remote-as 100
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-4#
sys-2-4#
```

CE3 Configuration:

```
sys-2-2#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-2
!
boot system tftp mpls/12.0/c3640-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 13.13.13.13 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.2 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 51.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 ip address 52.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/3
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/0
 no ip address
 no ip directed-broadcast
 shutdown
 no fair-queue
!
interface Serial1/1
```

```
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router ospf 100
 redistribute bgp 101
 passive-interface Ethernet0/1
 network 13.0.0.0 0.255.255.255 area 100
 network 52.0.0.0 0.255.255.255 area 100
!
router bgp 101
 no synchronization
 network 12.0.0.0
 network 13.0.0.0
 network 50.0.0.0
 network 51.0.0.0
 network 52.0.0.0
 neighbor 51.0.0.1 remote-as 100
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-2#
sys-2-2#
```

PE1 Configuration:

```
rpm-18-110#sho run
Building configuration...

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm-18-110
!
boot system tftp mpls/12.0/rpm-js-mz.120-5.T.bin 3.3.0.1
no logging console
!
!
!
!
!
clock timezone EST -5
clock summer-time EDT recurring
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
!
ip vrf vpn1
 rd 100:1
 route-target export 100:1
 route-target import 100:1
ip cef
cns event-service server
!
!
process-max-time 200
!
interface Loopback0
 ip address 11.11.11.11 255.255.255.255
 no ip directed-broadcast
!
interface Loopback1
 no ip address
 no ip directed-broadcast
!
interface Ethernet1/1
 ip address 3.3.18.110 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface Ethernet1/2
 ip vrf forwarding vpn1
 ip address 50.0.0.2 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
 tag-switching ip
!
interface Ethernet1/3
```

```
 bandwidth 100
 ip vrf forwarding vpn1
 ip address 51.0.0.1 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 tag-switching ip
 no fair-queue
!
interface Ethernet1/4
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface FastEthernet2/1
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
!
interface Switch1
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
!
interface Switch1.1 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 50 50 0 aal5snap
 tag-switching atm vp-tunnel 50
 tag-switching ip
!
interface Switch1.2 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 30 30 0 aal5snap
 tag-switching atm vp-tunnel 30
 tag-switching ip
!
interface Switch1.3 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 60 60 0 aal5snap
 tag-switching atm vp-tunnel 60
 tag-switching ip
!
router ospf 100
 passive-interface Ethernet1/2
 passive-interface Ethernet1/3
 network 11.0.0.0 0.255.255.255 area 100
!
router bgp 100
 no synchronization
 no bgp default ipv4-unicast
 neighbor 10.10.10.10 remote-as 100
 neighbor 10.10.10.10 update-source Loopback0
 !
 address-family ipv4 vrf vpn1
 neighbor 50.0.0.1 remote-as 101
 neighbor 50.0.0.1 activate
 neighbor 51.0.0.2 remote-as 101
 neighbor 51.0.0.2 activate
 no auto-summary
 no synchronization
 exit-address-family
```

```
 !
 address-family vpnv4
 neighbor 10.10.10.10 activate
 neighbor 10.10.10.10 send-community extended
 exit-address-family
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
x25 host shorun
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
exception core-file mpls/mgx/dumps/rpm-18-110.core
rpmrscprtn PAR 100 100 0 255 0 3840 4047
addcon vpc switch 1.2 30 rslot 0 3 30 master local
addcon vpc switch 1.1 50 rslot 14 1 50
addcon vpc switch 1.3 60 rslot 0 4 60 master local
end

rpm-18-110#
rpm-18-110#
rpm-18-110#
```

PE2 Configuration:

```
rpm-18-114#sho run
Building configuration...

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm-18-114
!
boot system tftp mpls/12.0/rpm-js-mz.120-5.T.bin 3.3.0.1
no logging console
!
!
!
!
!
clock timezone EST -5
clock summer-time EDT recurring
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
!
ip vrf vpn1
 rd 100:1
 route-target export 100:1
 route-target import 100:1
ip cef
cns event-service server
!
!
process-max-time 200
!
interface Loopback0
 ip address 10.10.10.10 255.255.255.255
 no ip directed-broadcast
!
interface Loopback1
 no ip address
 no ip directed-broadcast
!
interface Ethernet1/1
 ip address 3.3.18.114 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface Ethernet1/2
 bandwidth 100
 ip vrf forwarding vpn1
 ip address 53.0.0.1 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 tag-switching ip
 no fair-queue
!
```

```
interface Ethernet1/3
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
!
interface Ethernet1/4
 bandwidth 100
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no fair-queue
!
interface Switch1
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
!
interface Switch1.1 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 50 50 0 aal5snap
 tag-switching atm vp-tunnel 50
 tag-switching ip
!
interface Switch1.2 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 40 40 0 aal5snap
 tag-switching atm vp-tunnel 40
 tag-switching ip
!
interface Switch1.3 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 20 20 0 aal5snap
 tag-switching atm vp-tunnel 20
 tag-switching ip
!
router ospf 100
 passive-interface Ethernet1/2
 network 10.0.0.0 0.255.255.255 area 100
!
router bgp 100
 no synchronization
 no bgp default ipv4-unicast
 neighbor 11.11.11.11 remote-as 100
 neighbor 11.11.11.11 update-source Loopback0
 !
 address-family ipv4 vrf vpn1
 neighbor 53.0.0.2 remote-as 102
 neighbor 53.0.0.2 activate
 no auto-summary
 no synchronization
 exit-address-family
 !
 address-family vpnv4
 neighbor 11.11.11.11 activate
 neighbor 11.11.11.11 send-community extended
 exit-address-family
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
```

```
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
exception core-file mpls/mgx/dumps/rpm-18-114.core
rpmrscprtn PAR 100 100 0 255 0 3840 4047
addcon vpc switch 1.3 20 rslot 0 2 20 master local
addcon vpc switch 1.2 40 rslot 0 1 40
addcon vpc switch 1.1 50 rslot 10 1 50 master local
end

rpm-18-114#
```

One PE - Two CE Configuration - OSPF & IBPG Between PEs & RIP between PE-CE

CE1 Configuration

```
sys-2-1#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-1
!
boot system tftp mpls/12.0/c3620-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 12.12.12.12 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.1 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 50.0.0.1 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/3
 ip address 52.0.0.1 255.0.0.0
 no ip directed-broadcast
!
interface Serial1/0
 no ip address
```

```
 no ip directed-broadcast
 shutdown
 no fair-queue
!
interface Serial1/1
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router rip
 version 2
 network 12.0.0.0
 network 50.0.0.0
 network 52.0.0.0
 no auto-summary
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-1#
sys-2-1#
```

CE2 Configuration

```
sys-2-4#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-4
!
boot system tftp mpls/12.0/c3640-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 14.14.14.14 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.4 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 53.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router rip
 version 2
 network 14.0.0.0
 network 53.0.0.0
 no auto-summary
!
```

```
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-4#
sys-2-4#
sys-2-4#
```

CE3 Configuration

```
sys-2-2#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-2
!
boot system tftp mpls/12.0/c3640-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 13.13.13.13 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.2 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 51.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 ip address 52.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/3
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/0
 no ip address
 no ip directed-broadcast
 shutdown
 no fair-queue
!
interface Serial1/1
```

```
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router rip
 version 2
 network 13.0.0.0
 network 51.0.0.0
 network 52.0.0.0
 no auto-summary
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
!
x25 host shorun
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-2#
sys-2-2#
```

PE1 Configuration

```
rpm-18-110#sho run
Building configuration...

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm-18-110
!
boot system tftp mpls/12.0/rpm-js-mz.120-5.T.bin 3.3.0.1
no logging console
!
!
!
!
!
clock timezone EST -5
clock summer-time EDT recurring
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
!
ip vrf vpn1
 rd 100:1
 route-target export 100:1
 route-target import 100:1
ip cef
cns event-service server
!
!
process-max-time 200
!
interface Loopback0
 ip address 11.11.11.11 255.255.255.255
 no ip directed-broadcast
!
interface Loopback1
 no ip address
 no ip directed-broadcast
!
interface Ethernet1/1
 ip address 3.3.18.110 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface Ethernet1/2
 ip vrf forwarding vpn1
 ip address 50.0.0.2 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
 tag-switching ip
!
interface Ethernet1/3
```

```
 bandwidth 100
 ip vrf forwarding vpn1
 ip address 51.0.0.1 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 tag-switching ip
 no fair-queue
!
interface Ethernet1/4
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface FastEthernet2/1
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
!
interface Switch1
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
!
interface Switch1.1 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
atm pvc 50 50 0 aal5snap
 tag-switching atm vp-tunnel 50
 tag-switching ip
!
interface Switch1.2 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 30 30 0 aal5snap
 tag-switching atm vp-tunnel 30
 tag-switching ip
!
interface Switch1.3 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 60 60 0 aal5snap
 tag-switching atm vp-tunnel 60
 tag-switching ip
!
router ospf 100
 passive-interface Ethernet1/2
 passive-interface Ethernet1/3
 network 11.0.0.0 0.255.255.255 area 100
 network 50.0.0.0 0.255.255.255 area 100
 network 51.0.0.0 0.255.255.255 area 100
!
router rip
 version 2
 !
 address-family ipv4 vrf vpn1
 version 2
 redistribute bgp 100 metric 2
 network 50.0.0.0
 network 51.0.0.0
 no auto-summary
 exit-address-family
!
router bgp 100
```

```
 no synchronization
 no bgp default ipv4-unicast
 neighbor 10.10.10.10 remote-as 100
 neighbor 10.10.10.10 update-source Loopback0
 !
 address-family ipv4 vrf vpn1
 redistribute rip
no auto-summary
 no synchronization
 exit-address-family
 !
 address-family vpnv4
 neighbor 10.10.10.10 activate
 neighbor 10.10.10.10 send-community extended
 exit-address-family
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
exception core-file mpls/mgx/dumps/rpm-18-110.core
rpmrscprtn PAR 100 100 0 255 0 3840 4047
addcon vpc switch 1.2 30 rslot 0 3 30 master local
addcon vpc switch 1.1 50 rslot 14 1 50
addcon vpc switch 1.3 60 rslot 0 4 60 master local
end

rpm-18-110#
rpm-18-110#
```

PE2 Configuration

```
rpm-18-114#sho run
Building configuration...

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm-18-114
!
boot system tftp mpls/12.0/rpm-js-mz.120-5.T.bin 3.3.0.1
no logging console
!
!
!
!
!
clock timezone EST -5
clock summer-time EDT recurring
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
!
ip vrf vpn1
 rd 100:1
 route-target export 100:1
 route-target import 100:1
ip cef
cns event-service server
!
!
process-max-time 200
!
interface Loopback0
 ip address 10.10.10.10 255.255.255.255
 no ip directed-broadcast
!
interface Loopback1
 no ip address
 no ip directed-broadcast
!
interface Ethernet1/1
 ip address 3.3.18.114 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface Ethernet1/2
 bandwidth 100
 ip vrf forwarding vpn1
 ip address 53.0.0.1 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 tag-switching ip
 no fair-queue
!
```

```
interface Ethernet1/3
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
!
interface Ethernet1/4
 bandwidth 100
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no fair-queue
!
interface Switch1
no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
!
interface Switch1.1 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 50 50 0 aal5snap
 tag-switching atm vp-tunnel 50
 tag-switching ip
!
interface Switch1.2 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 40 40 0 aal5snap
 tag-switching atm vp-tunnel 40
 tag-switching ip
!
interface Switch1.3 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 20 20 0 aal5snap
 tag-switching atm vp-tunnel 20
 tag-switching ip
!
router ospf 100
 passive-interface Ethernet1/2
 network 10.0.0.0 0.255.255.255 area 100
 network 53.0.0.0 0.255.255.255 area 100
!
router rip
 version 2
 !
 address-family ipv4 vrf vpn1
 version 2
 redistribute bgp 100 metric 2
 network 53.0.0.0
 no auto-summary
 exit-address-family
!
router bgp 100
 no synchronization
 no bgp default ipv4-unicast
 neighbor 11.11.11.11 remote-as 100
 neighbor 11.11.11.11 update-source Loopback0
 !
 address-family ipv4 vrf vpn1
 redistribute rip
 no auto-summary
 no synchronization
 exit-address-family
```

```
 !
 address-family vpnv4
 neighbor 11.11.11.11 activate
 neighbor 11.11.11.11 send-community extended
 exit-address-family
!
ip default-gateway 3.3.0.1
no ip classless
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
exception core-file mpls/mgx/dumps/rpm-18-114.core
rpmrscprtn PAR 100 100 0 255 0 3840 4047
addcon vpc switch 1.3 20 rslot 0 2 20 master local
addcon vpc switch 1.2 40 rslot 0 1 40
addcon vpc switch 1.1 50 rslot 10 1 50 master local
end

rpm-18-114#
rpm-18-114#
rpm-18-114#
```

One PE - Two CE Configuration - OSPF & IBPG Between PEs & STATIC ROUTES between PE-CE

CE1 Configuration

```
sys-2-1#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-1
!
boot system tftp mpls/12.0/c3620-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 12.12.12.12 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.1 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 50.0.0.1 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/3
 ip address 52.0.0.1 255.0.0.0
 no ip directed-broadcast
!
interface Serial1/0
 no ip address
```

```
 no ip directed-broadcast
 shutdown
 no fair-queue
!
interface Serial1/1
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router ospf 100
 passive-interface Ethernet0/1
 network 12.0.0.0 0.255.255.255 area 100
 network 50.0.0.0 0.255.255.255 area 100
 network 52.0.0.0 0.255.255.255 area 100
!
ip default-gateway 3.3.0.1
no ip classless
ip route 0.0.0.0 0.0.0.0 Ethernet0/1 50.0.0.2
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-1#
sys-2-1#
```

CE2 Configuration

```
sys-2-4#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-4
!
boot system tftp mpls/12.0/c3640-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 14.14.14.14 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
 ip address 3.3.30.4 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 53.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router ospf 100
 passive-interface Ethernet0/1
 network 14.0.0.0 0.255.255.255 area 100
 network 53.0.0.0 0.255.255.255 area 100
!
ip default-gateway 3.3.0.1
```

```
no ip classless
ip route 0.0.0.0 0.0.0.0 Ethernet0/1 53.0.0.1
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-4#
```

CE3 Configuration

```
sys-2-2#sho run
Building configuration...

Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname sys-2-2
!
boot system tftp mpls/12.0/c3640-js-mz.120-5.0.2.T2 3.3.0.1
logging buffered 4096 debugging
no logging console
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
ip cef
cns event-service server
!
!
!
process-max-time 200
!
interface Loopback0
 ip address 13.13.13.13 255.255.255.255
 no ip directed-broadcast
!
interface Ethernet0/0
ip address 3.3.30.2 255.255.0.0
 no ip directed-broadcast
 shutdown
!
interface Ethernet0/1
 ip address 51.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/2
 ip address 52.0.0.2 255.0.0.0
 no ip directed-broadcast
!
interface Ethernet0/3
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/0
 no ip address
 no ip directed-broadcast
 shutdown
 no fair-queue
!
interface Serial1/1
```

```
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/2
 no ip address
 no ip directed-broadcast
 shutdown
!
interface Serial1/3
 no ip address
 no ip directed-broadcast
 shutdown
!
router ospf 100
 passive-interface Ethernet0/1
 network 13.0.0.0 0.255.255.255 area 100
 network 51.0.0.0 0.255.255.255 area 100
 network 52.0.0.0 0.255.255.255 area 100
!
ip default-gateway 3.3.0.1
no ip classless
ip route 0.0.0.0 0.0.0.0 Ethernet0/1 51.0.0.1
no ip http server
!
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
!
end

sys-2-2#
sys-2-2#
sys-2-2#
```

PE1 Configuration

```
rpm-18-110#sho run
Building configuration...

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm-18-110
!
boot system tftp mpls/12.0/rpm-js-mz.120-5.T.bin 3.3.0.1
no logging console
!
!
!
!
!
clock timezone EST -5
clock summer-time EDT recurring
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
!
ip vrf vpn1
 rd 100:1
 route-target export 100:1
 route-target import 100:1
ip cef
cns event-service server
!
!
process-max-time 200
!
interface Loopback0
 ip address 11.11.11.11 255.255.255.255
 no ip directed-broadcast
!
interface Loopback1
 no ip address
 no ip directed-broadcast
!
interface Ethernet1/1
 ip address 3.3.18.110 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface Ethernet1/2
 ip vrf forwarding vpn1
 ip address 50.0.0.2 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
 tag-switching ip
!
interface Ethernet1/3
```

```
 bandwidth 100
 ip vrf forwarding vpn1
 ip address 51.0.0.1 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 shutdown
 tag-switching ip
 no fair-queue
!
interface Ethernet1/4
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface FastEthernet2/1
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
!
interface Switch1
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
!
interface Switch1.1 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 50 50 0 aal5snap
 tag-switching atm vp-tunnel 50
 tag-switching ip
!
interface Switch1.2 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 30 30 0 aal5snap
 tag-switching atm vp-tunnel 30
 tag-switching ip
!
interface Switch1.3 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 60 60 0 aal5snap
 tag-switching atm vp-tunnel 60
 tag-switching ip
!
router ospf 100
 passive-interface Ethernet1/2
 passive-interface Ethernet1/3
 network 11.0.0.0 0.255.255.255 area 100
 network 50.0.0.0 0.255.255.255 area 100
 network 51.0.0.0 0.255.255.255 area 100
!
router bgp 100
 no synchronization
 no bgp default ipv4-unicast
 neighbor 10.10.10.10 remote-as 100
 neighbor 10.10.10.10 update-source Loopback0
 !
 address-family ipv4 vrf vpn1
 redistribute connected
 redistribute static
 no auto-summary
 no synchronization
```

```
 exit-address-family
 !
 address-family vpnv4
 neighbor 10.10.10.10 activate
 neighbor 10.10.10.10 send-community extended
 exit-address-family
!
ip default-gateway 3.3.0.1
no ip classless
ip route vrf vpn1 12.0.0.0 255.0.0.0 Ethernet1/2 50.0.0.1
ip route vrf vpn1 13.0.0.0 255.0.0.0 Ethernet1/3 51.0.0.2
ip route vrf vpn1 50.0.0.0 255.0.0.0 Ethernet1/2 50.0.0.1
ip route vrf vpn1 51.0.0.0 255.0.0.0 Ethernet1/3 51.0.0.2
ip route vrf vpn1 52.0.0.0 255.0.0.0 Ethernet1/2 50.0.0.1
ip route vrf vpn1 52.0.0.0 255.0.0.0 Ethernet1/3 51.0.0.2
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
exception core-file mpls/mgx/dumps/rpm-18-110.core
rpmrscprtn PAR 100 100 0 255 0 3840 4047
addcon vpc switch 1.2 30 rslot 0 3 30 master local
addcon vpc switch 1.1 50 rslot 14 1 50
addcon vpc switch 1.3 60 rslot 0 4 60 master local
end

rpm-18-110#
rpm-18-110#
rpm-18-110#
```

PE2 Configuration

```
rpm-18-114#sho run
Building configuration...

Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm-18-114
!
boot system tftp mpls/12.0/rpm-js-mz.120-5.T.bin 3.3.0.1
no logging console
!
!
!
!
!
clock timezone EST -5
clock summer-time EDT recurring
ip subnet-zero
no ip domain-lookup
ip host ios-lab-fw 3.3.0.1
!
!
ip vrf vpn1
 rd 100:1
 route-target export 100:1
 route-target import 100:1
ip cef
cns event-service server
!
!
process-max-time 200
!
interface Loopback0
 ip address 10.10.10.10 255.255.255.255
 no ip directed-broadcast
!
interface Loopback1
 no ip address
 no ip directed-broadcast
!
interface Ethernet1/1
 ip address 3.3.18.114 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
 no keepalive
!
interface Ethernet1/2
 bandwidth 100
 ip vrf forwarding vpn1
 ip address 53.0.0.1 255.0.0.0
 no ip directed-broadcast
 no ip mroute-cache
 tag-switching ip
 no fair-queue
!
```

```
interface Ethernet1/3
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
!
interface Ethernet1/4
 bandwidth 100
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no fair-queue
!
interface Switch1
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
!
interface Switch1.1 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 50 50 0 aal5snap
 tag-switching atm vp-tunnel 50
 tag-switching ip
!
interface Switch1.2 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 40 40 0 aal5snap
 tag-switching atm vp-tunnel 40
 tag-switching ip
!
interface Switch1.3 tag-switching
 ip unnumbered Loopback0
 no ip directed-broadcast
 atm pvc 20 20 0 aal5snap
 tag-switching atm vp-tunnel 20
 tag-switching ip
!
router ospf 100
 passive-interface Ethernet1/2
 network 10.0.0.0 0.255.255.255 area 100
 network 53.0.0.0 0.255.255.255 area 100
!
router bgp 100
 no synchronization
 no bgp default ipv4-unicast
 neighbor 11.11.11.11 remote-as 100
 neighbor 11.11.11.11 update-source Loopback0
 !
 address-family ipv4 vrf vpn1
 redistribute connected
 redistribute static
 no auto-summary
 no synchronization
 exit-address-family
 !
 address-family vpnv4
 neighbor 11.11.11.11 activate
 neighbor 11.11.11.11 send-community extended
 exit-address-family
!
ip default-gateway 3.3.0.1
no ip classless
ip route vrf vpn1 14.0.0.0 255.0.0.0 Ethernet1/2 53.0.0.2
```

```
ip route vrf vpn1 53.0.0.0 255.0.0.0 Ethernet1/2 53.0.0.2
no ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol ipx permit
!
!
line con 0
 exec-timeout 0 0
 transport input none
line aux 0
line vty 0 4
 password lab
 login
!
exception core-file mpls/mgx/dumps/rpm-18-114.core
rpmrscprtn PAR 100 100 0 255 0 3840 4047
addcon vpc switch 1.3 20 rslot 0 2 20 master local
addcon vpc switch 1.2 40 rslot 0 1 40
addcon vpc switch 1.1 50 rslot 10 1 50 master local
end

rpm-18-114#
```

Obtaining Service and Support

For service and support for a product purchased from a reseller, contact the reseller. Resellers offer a wide variety of Cisco service and support programs, which are described in the section "Service and Support" in the information packet that shipped with your chassis.

Note If you purchased your product from a reseller, you can access Cisco Connection On-line (CCO) as a guest. CCO is Cisco Systems' primary, real-time support channel. Your reseller offers programs that include direct access to CCO's services.

For service and support for a product purchased directly from Cisco, use CCO.

Cisco Connection On-line

Cisco Connection On-line (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: http://www.cisco.com
- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

This document is to be used in conjunction with the *Cisco WAN Switching MGX 8850, 8250,* and *8230* publications.