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1.1.21 Version Software Release Notes Cisco WAN MGX 8850 Software

About These Release Notes

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About the 1.1.21 Release

Release 1.1.21 of the MGX 8850 supports the same network scenarios as Release 1.1.12.

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.

   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, and (c) MGX 8850 to BPX 8600 (FR to ATM service interworking).

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.

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Features

This section lists the features supported in each of the maintenance releases that comprise MGX 8850 Release 1.1.21. Except where noted, all features are generally available.

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 1.1.21 MGX 8850 Hardware

MGX 8850 is a 45 Gbps backplane with 1.2 Gbps switching fabric for Release 1.1.21. The same backplane is used with different switching fabric cards (1.2, 45 Gbps) to achieve scalability. MGX 8850 Release 1.1.21 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
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

Front card model #	Rev #	Back card model #	Rev #
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	
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

Front card model #	Rev #	Back card model #	Rev #
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 1.1.21 of the MGX 8850

The following card is not supported in Release 1.1.21:

- AX-SRM-T1E1

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-B 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-B/MGX-BNC-3T3 card set are supported on the MGX 8220.

- 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 that will not be 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 table below:

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
MGX-VISM-8T1	1:N redundancy (bulk mode support for T1 lines only)

Front card model #	Redundancy supported
MGX-VISM-8E1	1:N redundancy (bulk mode support for T1 lines only)

Support for Bulk Distribution using SRM-3T3B card.

Service module and PXM upgrades

Features not Supported in this Release:

- RPM 1:1 redundancy
- RPM statistics
- Coexistence as feeder and stand-alone
- Layer 2 support as an autoroute routing node
- SRM T1E1
- IPX endpoints with the MGX 8850

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 9.2.05 release notes part number 78-6659-05

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 1.1.21 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 1.1.11 please refer to the MIB release notes on CCO.

Notes & Cautions

CLI modification and changes:

- 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.

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. (CSCdk84083).

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.

— All connections, ports and lines must be deleted before issuing the **clrsmcnf** command.

— 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 acctuator. **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.

	0-5 cards	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. The RPM limits it to 62,000 pps because of its single switch interface design. Under heavy load (data or control traffic) the CPU utilization increases, which breaks the IPC channel between the PXM and RPM card, due to which PXM declares RPM as Failed. Until this condition persists, the provisioning commands will time out as the PXM assumes that the RPM card is not available, whereas the RPM will continue to pass traffic.

o avoid this condition, it is recommended for OSPF configurations to limit the number of networks to 20 or fewer and MPLS configurations to limit the interfaces to 100 or fewer. Doing so will guarantee a sustainable traffic with low CPU utilization and hence the CPU will be able to service IPC channel traffic.

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:

1. Insert the new card into an unreserved empty slot. A previously used slot can be unreserved by giving the “clrsmcnf” command.
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:”).

3. Configure the new card to use the configuration in its bootflash using the “boot config bootflash: <config-file-name>” command.
4. Save the changes using “write mem” command.
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

The MGX 8850 does not support CESM endpoints with MGX 8220 Release 4.1 through CWM, but is supported through the CLI (CSCdm11835).

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. (CSCdm29396 - swsw 9.1.10)

Unable to provision virtual trunks in SWSW 9.1.10. (CSCdm12851)

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

Bug ID	Description

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:
	Initially, the redundancy information is displayed as follows:
	`taggmt42.1.7.PXM.a > dspcds`
	`Slot CardState CardType CardAlarm Redundancy`
	`---- ---------- -------- --------- ----------`
	`1.1 Standby FRSM-2CT3 Clear Covered by slot 2`
	`1.2 Active FRSM-2CT3 Major Covering slot 1`
	`taggmt42.1.7.PXM.a > switchback 2 1`
	`Do you want to proceed (Yes/No)? Yes`
	`taggmt42.1.7.PXM.a > dsplog`
	`04/25/1999-08:01:52 07 tTnCmdTsk02 RED-7-AC_INFO_ERR`
	`Error Event switchBack() successful`
	`04/25/1999-08:01:52 07 tTnCmdTsk02 PMM-7-RST_REQ`
	`Reset request: SM Reset, 2`
	`04/25/1999-08:01:52 07 tTnCmdTsk02 RED-7-SMM_INFO`
	`System Information : switchback:`
	`slot 2 (cardInx 3) is present, insertion msg from 7`
	`taggmt42.1.7.PXM.a > dspcds`
	`Slot CardState CardType CardAlarm Redundancy`
	`---- ---------- -------- --------- ----------`
	`1.1 Standby FRSM-2CT3 Clear`
	`1.2 Boot FRSM-2CT3 Clear`
	`taggmt42.1.7.PXM.a > dspcds`
	`Slot CardState CardType CardAlarm Redundancy`
	`---- ---------- -------- --------- ----------`
	`1.1 Standby FRSM-2CT3 Clear`
	`1.2 Reserved FRSM-2CT3 Clear`
	`slot 2 (cardInx 3) is present, insertion msg from 7`
	`taggmt42.1.7.PXM.a > dspcds`
	`Slot CardState CardType CardAlarm Redundancy`
	`---- ---------- -------- --------- ----------`
	`1.1 Standby FRSM-2CT3 Clear`
	`1.2 CardInit Clear`
	`Slot CardState CardType CardAlarm Redundancy`
	`---- ---------- -------- --------- ----------`
	`1.1 Active FRSM-2CT3 Major`
	`1.2 Standby FRSM-2CT3 Clear`
	Workaround:
	There is currently no work around 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 Fix: 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 by this: * 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. formatdisk.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: There is currently no work around for this.
CSCdp11982	Symptom: OC3 jitter higher than the normal standards specs

Bug ID	Description
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: There is currently no work around for this.

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
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.

Bug ID	Description
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: **1** Delete Master End and Slave End **2** Provision Slave End and Master End **3** 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 1.1.12

Bug ID	Description
CSCdk72991	Symptom: FRSM-VHS takes several minutes to go active when inserted the first time or after clrallcnf. 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.
CSCdm89192	Symptom: Oscillation of APS lines on switchcc.
CSCdm46620	Symptom: PXM and SRM do not display the Fab # via dspcd command like other SMs
CSCdm49706	Symptom: PXM gives unwanted Error Messages after switchcc
CSCdp16642	Symptom: dspln -ds3 command does not work for SRMs in 1.1.11Jd Conditions: When the PXM firmware is of a version later than 1.1.11Ja and the PXM back card is not a T3 back card. Workaround: Issue the command dsplns -ds3 <slotno> to get the required information. Further Problem Description: The problem occurs because of an invalid conditional checking during the display.

Bug ID	Description
CSCdm45533	Symptom: Round trip delay test results do not change on changing CDVT for CE-CE connection Conditions: **1** While adding a connection, the aal1driver added the connection with default CDVT of 1000us. After adding the connection, the CDVT was configured. This effect of CDVT change was felt only after a channel failure **2** When modifying CDVT with cnfcon too, the same problem was found, because of the CBR traffic, the buffer size cannot be changed dynamically without dropping data, hence it was not possible to see the effect of change in CDVT immediately. Workaround: **1** The first problem can be overcome by using CWM or the xcnfchan command to add a connection with value of CDVT different from the default **2** For dynamic changes in round trip as a result of CDVT changes, a shellConn command is introduced to synchronize the SAR queues. This command would, however, cause a momentary traffic disruption for CDVT to take effect

```
NODENAME.1.4.CESM.a > dspcons

  Line    ConnId            ChanNum Status  CDVT  MaxBufSize  CLIP
CBRservice
  ---- -------------------- ------- ------ ----- ---------- ------
------------
  1    NODENAME.4.1.0       32      Mod    10000 5120       2500
unstructured
  2    NODENAME.4.2.0       33      Mod    10000 5120       2500
unstructured

  ChanNumNextAvailable: 35

NODENAME.1.4.CESM.a > shellConn

NODENAME.1.4.CESM.a > SyncChan 32
SyncChan 32
value = 0 = 0x0
```

The command reports an error if it is unsuccessful. It takes channel number (not connection number) as an argument and does range checking for valid channels.

CSCdm54264	Symptom: RPM DAX connection is not rejected when conflict
CSCdm59885	Symptom: Connections with mismatched endpoints should be rejected

Bug ID	Description
CSCdm61180	Symptom: Able to change passwords without knowing password Synopsis: When a user wants to change the password, the CLI interface does not ask the user for the old password. Hence lack of security. Description: Irrespective of user GROUP ACCESS, he/she can change their password without knowing the old password. Workaround: This problem is fixed in release 1.1.12. Users belonging to SUPER USER GROUP are not prompted for the old password; while users belonging to other GROUPS are prompted for old password before they are allowed to change their current password.

CSCdm45141	Symptom:
	Switchcc displays ssiFrameXmt failed and VSI master: invalid sw clock info pg
	Condition:
	The ssiXmtFrame failure was caused by SCM transmitting on GLCN=0, which is reserved. This is due to scmSwitch including slot 31 and slot 32 which are not mapped in SCM master.
	switchcc on PXM displays the following message in the PXM log:
	`1. ssiFrameXmt failed, error status -1 - 31 dropped`
	`2. Vsi master: invalid sw clock info pg`
	`; 2, 3, -2104681808 - 1 dropped`
	`05/27/1999-06:16:13 07 PAR:Vsi  PAR-7-VSIM_DEBUG`
	` Vsi master: invalid sw clock info pg`
	`; 2, 3, -2104681808 - 1 dropped`
	`05/27/1999-06:16:10 07 PAR:Vsi  PAR-7-VSIM_DEBUG`
	` Vsi master: invalid sw clock info pg`
	`; 2, 3, -2104681808`
	Workaround:
	No workaround

CSCdm61405	Symptom: The bootChange information does not get propagated to a newly installed card
CSCdm69913	Symptom: Checksum blocks not sync between controller and slave
CSCdm83431	Symptom: Cannot telnet into an MGX 8850 shelf, but shows alive on ping
CSCdm86705	Symptom: PLCP payload scrambling enable/disable needs to be supported
CSCdm91291	Symptom: CWM flooded with APS trap 50606 Conditions: Under Signal Degrade conditions, the MGX 8850 floods CWM with APS trap 50606

Bug ID	Description
CSCdm59422	Symptom: PXM declares RPM as Failed when CPU reaches high utilization. Conditions: The RPM is a NPE-150 based router card capable to sustain traffic up-to 150,000pps. The RPM limits it to 62,000pps because of its single switch interface design. Under heavy load (data or controlled traffic) the CPU utilization increases which breaks the IPC communication channel between the PXM and RPM card, due to which PXM declares RPM as Failed. Under such condition the provisioning commands will time-out as the PXM assumes that the RPM card is not available, whereas the RPM will continue to pass traffic. WorkAround: It is recommended for OSPF configurations to limit the number of networks to 20 or less and the MPLS configuration to limit the interface to 100 or less. Doing so will guarantee a sustainable traffic with a low CPU utilization and hence the CPU will be able to service IPC channel traffic.
CSCdp02058	Symptom: Memory leak observed when master connection deleted
CSCdp02415	Symptom: Bulk overflow system errors for conn addition beyond half of max-con limit
CSCdm94636	Symptom: APS switch causes Db plfm: aps disk update failed in ssiDb Update in log
CSCdp04474	Symptom: An LOS condition was cleared on an APS line, and neither a trap or an entry in the switch log was generated
CSCdp06288	Symptom: All FRSM-VHS cards get into mismatch on downgrading to 1.1.11
CSCdp06386	Symptom: APS - doing addapsln with OC12 interface causes both PXMs to reboot constantly
CSCdp07688	Symptom: PAR ERROR - SYSTEM ERROR 20418 when deleting connection
CSCdp08594	Symptom: Every 55 minutes MGX 8850 sends out 18 fan traps.
CSCdp09205	Symptom: Not able to add 12K complete connections in MGX 8850 shelf
CSCdp10299	Symptom: Standby PXM got reset during switchcc
CSCdp07383	Symptom: APS alarm status is not provided in the MGX 8850 node, this must be provided
CSCdp04380	Symptom: A switchcc caused by software error on node with 12000 connections

Bug ID	Description
CSCdk87710	Symptom: Decrease in number of CLP set cells. Problem : In a feeder environment, with connections between frsm-vhs at both ends, it was observed that the total cells sent, and received on other end did tally, but there was a decrease observed in the number of clp1 cell count.
CSCdm35110	Symptom: Traffic dropped in Adaptive mode in CESM 8t1 card
CSCdm65796, CSCdm94176	Symptom: Remote loops put up on FRSM-2CT3 are not detected by the dspln command
CSCdm69833	Symptom: AUSM default connection parameter values severely impact data
CSCdm72334	Symptom: FRSM-2CT3 DS3 line loopback not available
CSCdm72343	Symptom: FRSM-2CT3 M-frame seq for OOF not evaluated
CSCdm75968	Symptom: Universal(12in1) backcard must support X.21
CSCdm77348	Symptom: CESM front card does not reset when backcard is re-inserted
CSCdm81340	Symptom: AUSM slot 7 on axis shelf mysteriously switched to slot 14 <CSCdm10441>
CSCdm81362	Symptom: singleBitErrCorrection missing from the tftp table <CSCdm44566>
CSCdm81363	Symptom: Huge traps 50900/50901 sent on line errors. <CSCdm54102>
CSCdm81366	Symptom: AUSM card with Bad PRI which pass checksum test ... <CSCdm60447>
CSCdm82908	Symptom: Clock synchronization is required in loop timing

Bug ID	Description
CSCdm83655	Symptom: Bit and Framing errors were detected using the on-board T1/E1 service module BERT feature, and also with an external BERT test when the T1s were distributed from an SRM connected to an M13. Further Problem Description: When the T1 framer is configured in line loopback, there is no dejittering involved in the path. This causes bit errors for traffic from distribution bus , which is more susceptible to noise. To eliminate these jitter induced errors, now the framer is configured for payload loopback in response to a loopup request. The jitter tolerance is improved with framer in payload loopback mode.
CSCdm83787	Symptom: runslftstno 5 gets Disk Data Corruption message (similar to bug CSCdm68952)
CSCdm84900	Symptom: After adding some connections, HS2 card goes into constant failed state Problem & Reason: When one of the feeder cable was bad and it was causing a lot of LCV's, HEC errors and also going on and off the MAJOR alarm state, some of the OAM cells from the far end connection were received as data and this triggered the card failing problem. Workaround: None if the bad cable cannot be replaced with a good one.
CSCdm49144	Symptom: CLI support required with Port.dlci as Connection Index
CSCdm92558	Symptom: The dspcd <slot_no> command display shows unexpected output
CSCdp03564	Symptom: Getting large amounts of aborted frames on FRSM-HS2 card
CSCdp05125	Symptom: Connections which terminate on FRSM-2CT3 ports which span multiple DS0s experience intermittant data problems. Counters and statistics on the FRSM and PXM do not indicate any problems. The CPE equipment will show FRAME abort conditions. Conditions: The condition will manifest itself after a number of low speed ports have been configured on the card. Data will run fine on the first few low speed ports configured, but after a point, the creation of one more low speed port will cause data on all ports to exhibit the problem symptoms. Workaround: No known workaround. Further Problem Description: The problem can be identified as follows -- Send data from the CPE (in this case a 3620 router). Notice that 3 of the 5 pings went through. We also see 2 abort frames (input errors on the interface). These directly correspond to the 2 missing icmp datagrams.

Bug ID	Description
CSCdm75434	Symptom: FRSM-2T3 is in failed state after xcnfchan -chn ? -cntp 2 for slave
CSCdm80762	Symptom: N393 counter can be set to less than or equal to N392 counter
CSCdp05620	Symptom: DLCI and Delete bit fields of an async. status message don't carry correct values Scenario: 1. Configure a port with PVC Asynchronous Status Report enable. 2. Add a PVC. 3. Delete the PVC. Problem: 1. The ASYNCH STATUS message contains DLCI = 0 instead of the DLCI of the deleted PVC. 2. The "Delete bit" in the PVC IE is not turned on. Workaround: none
CSCdp09346	Symptom: CESM-8T1/E1 - New dsptotals command only shows max of 124 ports for both cards.
CSCdm30544	Symptom: The major card integrated alarm due to inconsistent databases on the PXM and the SM does not get cleared. Symptom : Under rare situations, a configuration change on an SM will fail to make the necessary changes on the PXM. The SM will try to back-off the changes and this might fail also. This failure to undo the changes will result in the inconsistent databases card integrated alarm (which can be seen using the "dspcd" command). Workaround : There is no workaround to prevent this alarm condition from happening. However it is extremely rare that it will occur. This alarm indication does not disappear at all. There is no CLI command to clear the alarm indication either. The only way to get rid of the alarm indication is to reset the card.
CSCdm49120	Symptom: CLI support required using Port.dlci as Connection Index
CSCdm79642	Symptom: PXM-CESM connections declared failed even though data continuity is fine
CSCdm84330	Symptom: Random bit errors observed on DAX - T3 connections
CSCdm90305	Symptom: Remote loops put up are not displayed by dspln command <VHS:CSCdm65796> Remote Loopback invoked on an FRSM-2CT3 via cnfbert was not displayed via the dspln or any other command.

Bug ID	Description
CSCdm93572	Symptom: Cannot set AUSM IMA PortQueues on Popeye AUSM card, however this works on the AXIS shelf.
CSCdp06586	Symptom: Unable to reverse LMI i.e. N393<N392 on FRSM-2CT3 ports
CSCdp06562	Symptom: Provisioning of large numbers of PVCs using SNMP causes card to fail Conditions: FRSM card resets when attempting to provision up to 4000 connections. The lines and ports are deleted. Workaround: There is currently no work around for this.
CSCdm34026	Symptom: Following switchcc duplicate IP address reported
CSCdm56223	Symptom: SRM responds to FEAC for T3 resulting in local loop. Conditions: Happens when FEAC codes are sent to T3 of SRM. Workaround: Investigating.
CSCdm56229	Symptom: SRM responds to FEAC to loop the T1s. Conditions: Happens when FEAC codes to loop the T1s are sent to the SRM card. Workaround: Investigating.
CSCdm64880	Symptom: Switchcc caused telnet loss for two minutes and sequence mismatch messages
CSCdm67158	Symptom: Control X issued at the console login prompt caused reset
CSCdm72320	Symptom: Communication between PXM and service module drops in case of a switchover. Conditions caused by loss of messages between SM and PXM (e.g. updates about SM failover while PXM switchover is occuring) during PXM switchover are not corrected after new PXM has become active.
CSCdm94687	Symptom: LOS on an APS line not in compliance with standards

Bug ID	Description
CSCdm81375	Symptom: Phantom channels on cards that don't have lines or ports enabled
CScdm87663	Symptom: Performing switchcc on a system configured for APS results in error message
CSCdp08385	Symptom: Possible memory leak after weekend of add/del slave end connections to PXM-UNI
CSCdp11201	Symptom: FRSM-8T1E1 ports disappear after reset of card
CSCdp11885	Symptom: FRSM-2E3: after deletion of the only channel on the card, the card still indicates channel alarm

Problems Fixed in Release 1.1.11

Bug ID	Description
CSCdm45045	Symptom: APS: no differentiation between Model A and B backcards
CSCdm56779	Symptom: Removing the back card from the active PXM causes the APS line to fail
CSCdk63920	Symptom: VPI value supported on PXM broadband interface BBIF is 255
CSCdm32833	Symptom: APS: switchapsln service options are not working
CSCdm36155	Symptom: IP+ATM - Saved PVC configurations will not come up after pulling the RPM
CSCdm42355	Symptom: Feature enhancement: real time VBR support on PXM UNI
CSCdm47536	Symptom: FRSM front card should remain Active when line card is removed
CSCdm62176	Symptom: Executing cc to redundant-active SMs CESM, FRSM, AUSM always fails after switchcc
CSCdm65505	Symptom: APS and PMM pipc call forward functions leak pipc buf descriptor memory
CSCdm46613	dsptotals functionality not implemented on PXM
CSCdm57515	Removal of FRSM-2CT3 backcard did not cause redundancy switchover
CSCdm60455	Unable to configure SRM alarm intervals
CSCdm67669	Not able to configure Cellbus for double clock speed
CSCdm55225	Saveallcnf does not work while provisioning
CSCdm69780	Support of PXM core dump subsystem feature.
CSCdm35781	IP+ATM A PXM that is up does not detect PVCs going down at the far end
CSCdm40790	Expected dspred to show BLOCKED when redundant back card is unplugged.
CSCdm58432	Line cnf cleared on mmf-smf transition, mismatch not shown for mmf-smf combine
CSCdm60455	Unable to configure SRM alarm intervals
CSCdm61275	No APS switch on SDBER threshold exceeded
CSCdm63233	Saveallcnf does not include RPM configs
CSCdm71506	ssiMemPartShow output is broken caller, time and user data is garbage

Bug ID	Description
CSCdm59316, CSCdm51290	Design rule for core card redundancy needs to be changed - Standby SRM does not take over when active SRM fails
CSCdm35781	IP+ATM A PXM that is up does not detect PVCs going down at the far end
CSCdm40790	Expected dspred to show BLOCKED when redundant back card is unplugged
CSCdm61199	cnftrapip reqd to specify source add. for traps-cnfifip address not sufficient
CSCdm74699	dspfwrevs hangs if ComMat.dat file is in C:/FW directory
CSCdm75102	If background memory check finds an error, the chunk pool may become unusable
CSCdm72701	Modified the red state machine to handle, SM_NOT_RESPONDING state from PMM in addition to SM_FAILED
CSCdm81167	Memory corruption in cliPlugin call
CSCdm81213	pool header status field has an invalid value
CSCdm80527	Cannot set dsx3PlcpPayloadScramble from SNMP
CSCdm00200	PCI errors cause VISM to reboot without displaying/logging error source
CSCdm23426	FRSM VHS 2CT3 delete rsc part config change50600 trap has incorrect status
CSCdm36668	Symptom: On switchcc, CESM-8T1 & FRSM-VHS in slot 1 & 17 fails, incr unknown ScmTypeCnt
CSCdm44993	FRSM-V.35: Frame traffic loss on local DAX connection with internal loopback
CSCdm46266	FRSM-V.35: Unnecessary traps upon port addition and deletion
CSCdm47536	FRSM front card should remain Active when line card is removed
CSCdm49847	dsplns returns undefined symbol: dsplns on FRSM-VHS2E3
CSCdm50397	FRSM-V.35: UNI Timeout counts increment with NNI signalling configured
CSCdm51406	dspchancnt on remote end does not show receiving AIS
CSCdm51635	FRSM-8T1 does not show backcard serial number in dspcd
CSCdm54744	FRSM-V.35: Tagging should not occur with DE tagging disabled
CSCdm56090	FRSM-V.35: Port alarm should occur with Rcv clk rate out-of-bounds line alarm
CSCdm56264	CESM continuously rebooting
CSCdm57914	dspimainfo command to follow AXIS 5 implementation
CSCdm63207	MGX fails to send yellow upon receipt of AIS
CSCdm63250	FRSM-2CT3 does not generate yellow alarm
CSCdm63851	FRSM-V.35: FRSM Cards should not be identified as AXIS cards
CSCdm65343	FRSM V.35: Commands should include help text for V.35 interface not only X.21

Bug ID	Description
CSCdm65939	SRM DS3 momentary error causes permanent DS1 LOF
CSCdm65940	SRM DS3 momentary error causes permanent DS1 LOF
CSCdm68952	runslftstno 5 run on AUSM shows Disk Data Corruption even though test passes
CSCdm69071	Automatic relearning of IMA ID required
CSCdm69713	FRSM-V.35: FRSM Cards should not be identified as AXIS cards
CSCdm69714	FRSM-V.35: FRSM Cards should not be identified as AXIS cards
CSCdm70125	Removal of FRSM-2CT3 backcard did not cause redundancy switchover
CSCdm56202	dsploads on AUSM
CSCdm83075	Redundant SM cards unavailable on pxm switchover caused by SRM failure
CSCdm83995	pxm - LMI port disabled on upgrade and resetsys, trunk unusable
CSCdm75342	After resetcd, all configuration for HS2 card is lost
CSCdm80086	FRSM-CT3 went into failed state during con provisioning
CSCdm29907	The cardMajorAlarmBitmap MIB variable is not found in the AXIPOP.my file. Currently, this information is available only on CLI. Some backward compatibility issues need to be resolved before this is available through SNMP
CSCdm38440	Wrong GMT offset when daylight savings time change
CSCdm47203	FRSM-2CT3 dsplns returns undefined symbol
CSCdm51406	dspchancnt on remote end does not show receiving AIS
CSCdm54605	delifip 37 results in system reset

Problems Fixed in Release 1.1.10

Bug ID	Description
CSCdk36727	Trap managers are not aged. If a trap manager is added, it has to be explicitly deleted.
CSCdk56888	Unexpected RAI alarms while configure DSX1 line in SF mode
CSCdm09225	The customer would like to have the ability to measure the processor consumption by process on the MGX 8850, the same way they can on the BPX.
CSCdm21269	When the ATM uplink is under congested condition ATM cloud, it is observed that the receiving FRSM is not receiving frames with FECN bit set and the sending FRSM is not receiving frames with BECN bit set as expected, if the FR-ATM interworking mode is set to service interworking transparent mode on the FRSMs.
CSCdm33419	The Connection GUI misreports connection modification in the following scenario: 1. Add a 3-segment connection with PXM UNI endpoints. 2. Modify the SCR on the PXM UNI side to a big number, big enough to exceed the available bandwidth on the feeder trunk side. Also turn on CAC override. 3. Execute the modification. CWM will display a successful result, even though the modification is actually rejected because oversubscription is not allowed on the feeder trunk side.
CSCdm36595	Sometimes the channels start sending AIS cells on to the port. As a result some channels on service modules are consistently in alarm state. Also as a result feeder connections disappear on the MGX 8850 after executing the resetsys command.
CSCdm29249	Some AUSM cards get stuck in cardInit state after executing the resetsys command.
CSCdm42493	CardIntegratedAlarm is not displayed when CLI command “dspcd” is executed on MGX 8850 service modules.
CSCdm50194	FRSM-2CT3 gives temporarily out of buffers message after addds3loop
CSCdm57808	Pulling out an active PXM causes multiple problems
CSCdm55429	APS line switch not indicated in switchlog & incorrect in CWM trap
CSCdm29177	FRSM-2CT3 can go into mismatch due to configuration mismatch between PXM cards
CSCdm33972	Error log shows: A process that is not the owner is attempting to free resources
CSCdm46905	Boot code from an invalid card type could be loaded to a different SM
CSdm47917	PXM log flooded with resync messages
CSCdm07070	MemShow, dspclksrc and dsptrkload bad responses
CSCdm23786	Unable to configure RS232 port speeds
CSCdk84622	Dsplmi & dspsarcnt available on AXIS or on PXM
CSCdm29177	FRSM-2CT3 cards go into mismatch due to config mismatch
CSCdm32736	Par-VSI task gets suspended unable to add/delete connections
CSCdm33972	Error log for slot 7 shows a process that is not the owner
CSCdm34001	Error log for slot 8 shows Db plfm:PmmRamDb update when card is not active

CSCdm34011	Error log for slot 8 shows no updated to Db plfm:sm14-v20 found to commit
CSCdm37450	Dspcons display breaks a connection into two lines
CSCdm39478	Restoreallcnf fails, with PXMs locking up and connections not restored
CSCdm39767	PSW firmware needs to reset PXM when a task fails to spawn successfully
CSCdm42463	On switchcc can lose RPM files that exist on the active PXM
CSCdm42849	When lmitrace on, keep doing dlmi hangs the system
CSCdm33996	Error log for slot 8 shows an invalid ssi-mqid of 0xffffffff
CSCdm38372	Addcon for a dax connection with ABR gives SNMP set error 6
CScdm33570	FRSM-2CT3 does not pause its display totals
CSCdm47909	PXM logs error for manually invoked switchcc
CSCdm53583	RPM config file not mirrored from active to standby PXM card
CSCdm50771	Copy of file to RPM can result in overwriting RPM directory entry
CSCdm23426	Config change trap carries the port resource partition row status as ADD while deleting the resource partition.

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)

Problems Fixed for VISM in 1.1.20

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Bug ID	Description
CSCdm33351	Symptom/Condition: 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 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 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

Compatibility Notes

1. MGX 8850 Software Interoperability with other Products

MGX 8850 Platform Software:	PXM 1.1.21
MGX 8220 Firmware:	Rev: 4.1.xx or 5.0.10 (Refer to the MGX 8220 Release Notes)
Compatible Switch Software:	SwSw 9.2.21 and 9.1.15 for BPX and BXM firmware - MEB (Refer to the Switch Software Release Notes)
Network Management Software:	CWM 9.2.06 (Refer to the CWM 9.2.06 Release Notes)
CiscoView:	CV 4.2 WAN CV 2.05 (Refer to the CWM 9.2.06 Release Notes)

2. Software Boot and Runtime Firmware Requirements

Board Pair	Boot Code	Version	Firmware	Version	Minimum Version
PXM1	pxm_bkup_1.1.21.fw	1.1.21	pxm_1.1.21fw	1.1.21	1.1.21
PXM1-2-T3E3	pxm_bkup_1.1.21.fw	1.1.21	pxm_1.1.21.fw	1.1.21	1.1.21
PXM1-4-155	pxm_bkup_1.1.21.fw	1.1.21	pxm_1.1.21.fw	1.1.21	1.1.21
PXM1-1-622	pxm_bkup_1.1.21.fw	1.1.21	pxm_1.1.21.fw	1.1.21	1.1.21
AX-CESM-8E1	cesm_8t1e1_CE8_BT_1.0.01.fw	1.0.01	cesm_8t1e1_10.0.07.fw	10.0.07	10.0.05
AX-CESM-8T1	cesm_8t1e1_CE8_BT_1.0.01.fw	1.0.01	cesm_8t1e1_10.0.07.fw	10.0.07	10.0.05
MGX-AUSM-8E1/B	ausm_8t1e1_AU8_BT_1.0.01.fw	1.0.01	ausm_8t1e1_10.0.07.fw	10.0.07	10.0.05
MGX-AUSM-8T1/B	ausm_8t1e1_AU8_BT_1.0.01.fw	1.0.01	ausm_8t1e1_10.0.07.fw	10.0.07	10.0.05
AX-FRSM-8E1	frsm_8t1e1_FR8_BT_1.0.01.fw	1.0.01	frsm_8t1e1_10.0.07.fw	10.0.07	10.0.05
AX-FRSM-8E1-C	frsm_8t1e1_FR8_BT_1.0.01.fw	1.0.01	frsm_8t1e1_10.0.07.fw	10.0.07	10.0.05
AX-FRSM-8T1	frsm_8t1e1_FR8_BT_1.0.01.fw	1.0.01	frsm_8t1e1_10.0.07.fw	10.0.07	10.0.05
AX-FRSM-8T1-C	frsm_8t1e1_FR8_BT_1.0.01.fw	1.0.01	frsm_8t1e1_10.0.07.fw	10.0.07	10.0.05
MGX-FRSM-HS2	frsm_vhs_VHS_BT_1.0.01.fw	1.0.01	frsm_vhs_10.0.09.fw	10.0.09	10.0.05
MGX-FRSM-2CT3	frsm_vhs_VHS_BT_1.0.01.fw	1.0.01	frsm_vhs_10.0.09.fw	10.0.09	10.0.05
MGX-FRSM-2T3E3	frsm_vhs_VHS_BT_1.0.01.fw	1.0.01	frsm_vhs_10.0.09.fw	10.0.09	10.0.05
MGX-FRSM-HS1/B	frsm_hs1_HS1_BT_1.0.01.fw	1.0.01	frsm_hs1_10.0.07.fw	10.0.07	10.0.05
MGX-CESM-T3E3	cesm_t3e3_CE8_BT_1.0.01.fw	1.0.01	cesm_t3e3_10.0.05.fw	10.0.05	10.0.05
MGX-VISM-8T1	vism_8t1e1_VI8_BT_1.0.02.fw	1.0.02	vism_8t1e1_VI8_1.0.02.fw	1.0.02	1.0.01
MGX-VISM-8E1	vism_8t1e1_VI8_BT_1.0.02.fw	1.0.02	vism_8t1e1_VI8_1.0.02.fw	1.0.02	1.0.01

3. RPM Boot and IOS Image - ***Note*** 1.1.21 platform image is co-required with 120-5.XT**

RPM Board	Boot Code	IOS Image
MGX-RPM-64M/B	rpm-boot-mz.120-5.T1	rpm-js-mz.120-5.XT
MGX-RPM-128M/B	rpm-boot-mz.120-5.T1	rpm-js-mz.120-5.XT

Special Installation and Upgrade Requirements

Existing customers should use the upgrade procedure on page 55 to upgrade from 1.0.00 to 1.1.00/1.1.01/1.1.10/1.1.11/1.1.12/1.1.21. For new customers the image will be pre-installed as 1.1.21 and they need to use PXM installation procedure to upgrade to future maintenance releases.

Single PXM Installation Procedure

Step 1 Download the 1.1.21 PXM runtime image to the PXM.

```
tftp <node_name or IP address>
bin
put 1.1.21.fw POPEYE@PXM_ACTIVE.FW
quit
```

Step 2 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
quit
```

Step 3 Execute the **install 1.1.21** command.

Step 4 Answer **Yes** to the question the install command will ask.

Installation Procedure For Redundant PXMs:

Step 1 Verify that one PXM is Active and the other Standby.

Step 2 Download the 1.1.21 PXM runtime image to the PXM.

```
tftp <node_name or IP address>
bin
put 1.1.21.fw POPEYE@PXM_ACTIVE.FW
quit
```

Step 3 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
quit
```

Step 4 On the Active PXM, do “install 1.1.21".

[The cards will reset at this point, and it is not determinate which card will become the Active and which will become the Standby.]

Step 5 After the Standby card is reset and successfully enters the hold state, on the Active PXM, do “newrev 1.1.21".

Step 6 After the Active PXM is reset and successfully enters the hold state, on the Active PXM, do “commit 1.1.21".

PXM Flash Download Procedure

Step 1 Download the PXM backup image to the PXM.

```
tftp <node_name or IP address>
bin
put pxm_bkup_<revision>.fw POPEYE@PXM.BT
quit
```

Step 2 While in the same directory that you downloaded the backup boot file to, execute the **downloadflash** command.

or

While in the same directory that you downloaded the backup boot file to, execute the command **install bt 1.1.21**.

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

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 <sm_boot> POPEYE@SM_1_<slot>.BOOT
quit
```

Step 2 While in the same directory that you downloaded the service module firmware boot file to, execute the **downloadflash** command.

or

While in the same directory that you downloaded the backup boot file to, execute the command install bt sm <slot>.

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.

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.

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.

PXM Software 1.0.00 to 1.1.00 or 1.1.01 or 1.1.10 or 1.1.11 or 1.1.12 or 1.1.21 Upgrade Procedure

- 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.

- If you have previously loaded 1.0.00Ei (or any later release) onto your shelf, you don’t have to reformat your disk as explained below. **Please use the number of the release you are upgrading from instead of 1.1.00 in the procedure, the procedure is the same.**

We have completed the disk changes required to attain enhancement in performance. Basically, the changes are twofold.

- Introducing DMA. DMA delivers 2.5-3 times the throughput.
- Reduction in file system size. This delivers 4 times the throughput we previously had. The file system size is now set to 800 Meg.

Following is the procedure to bring up the shelf with the current release:

FOR SINGLE PXM SYSTEMS:

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 On the PXM, save the current configuration:

```
node-prompt> 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
```

For this case, the filename is NODENAME_0409990528.zip. The last set of numbers is the date and time (04/09/99 05:28). If you have executed the saveallcnf command a number of times, there will be a number of files, pick the one with the correct timestamp.

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

(a) saveallcnf

(b) restoreallcnf

(c) install

(d) 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:

(a) saveallcnf

(b) install

(c) newrev

(d) restoreallcnf

(for more information, refer to CSCdm57683)

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 new bootcode:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tftp> put pxm_bkup_1.1.21FW 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 5 Burn the backup boot into flash by using the “downloadflash” command (you can only have the one backup boot file in the /FW directory):

```
node-prompt> downloadflash
writing pxm_bkup_1.1.21.fw to flash...
Board recognized as a PXM1A board ...
Checksum size is 642230 ...
Erasing the flash ....
FLASH erase complete
Downloading C:/FW/pxm_bkup_1.1.21.fw into the flash ...
verifying flash contents ....
Flash ok ....
```

Step 6 Reboot the shelf:

```
node-prompt> resetsys
Do you want to proceed (Yes/No)? yes
```

The shelf should boot into backup boot and display the VxWorks prompt “->”.

Step 7 Format the disk:

```
-> ataFormat
IDE: format in progress. This takes a while  ........
................................
Disk format complete. Reboot the system  .....
value = 0 = 0x0
```

This will take a long time (~25 minutes), so be patient.

Step 8 Reboot the PXM:

```
-> reboot
```

Step 9 On the workstation, download the PXM FW:

```
unix-prompt> tftp pxm.ip.address
tftp> bin
tftp> put pxm_1.1.21.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 10 Set the FW version to be booted:

```
-> setPXMPrimary "1.1.21"
```

Step 11 Reset the PXM:

```
-> reboot
```

Step 12 Download the saved configuration to the shelf:

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

Step 13 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 specific firmware.

Step 14 Restore the configuration:

```
node-prompt> restoreallcnf -fNODENAME_0409990528.zip
The saved FW version (1.0.00) is not same as the current FW version
(1.1.21)
Do you want to proceed with the saved FW version (1.0.00)? no
Do you want to keep the current FW version (1.1.21)
(WARNING, the databases in these FW versions must be compatible or upgradeable
for this to work)? yes
All current config will be replaced with the specified restored config and the
shelf will be reset.
Do you want to proceed (Yes/No)? yes
Syncing ......
Flash download completed.
```

FOR REDUNDANT PXM SYSTEMS TO BE UPDATED ALL AT ONCE (ONE LONG OUTAGE - THIS IS NOT GRACEFUL)

If you have previously loaded 1.0.00Ei (or any later releases) onto your shelf, you don't have to reformat your disk as explained below and you can skip steps 1-10 and start from step 11. **Please use 1.1.21 instead of 1.1.00 in the procedure, the procedure is the same.**

Special Note: If user has connections with vpi > 255, user should not attempt to downgrade to 1.1.10 (or lower versions), as this will affect the connections with vpi > 255

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

Step 1 To set the PXM addresses, 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 2 On the active PXM, save the current configuration:

```
node-prompt> saveallcnf
```

Step 3 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
```

For this case, the filename is NODENAME_0409990528.zip. The last set of number is the date and time (04/09/99 05:28). If you have executed the saveallcnf a number of times, there will be a number of files, pick the one with the correct timestamp.

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

(a) saveallcnf

(b) restoreallcnf

(c) install

(d) 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:

(a) saveallcnf

(b) install

(c) newrev

(d) restoreallcnf

(for more information, refer to CSCdm57683)

Step 4 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 5 Download the new bootcode from the workstation:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tftp> put pxm_bkup_1.1.21.fw POPEYE@PXM.BT
Sent 642232 bytes in 6.3 seconds
```

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
```

On the redundant PXMs, make sure that the boot is completely copied to the standby PXM. If you have a console connected to the standby PXM, you should see a message similar to the one on the active console.

If you do not have a console connected to the standby PXM, from the active PXM console cc to the standby PXM list the FW directory:

```
node-prompt> cc standby-pxm-number
(session redirected)
node-prompt> ll "C:/FW"
  size          date       time       name
--------       ------     ------    --------
     512    APR-08-1999  08:16:18   .                 <DIR>
     512    APR-08-1999  08:16:18   ..                <DIR>
 1982672    APR-08-1999  08:17:10   pxm_1.1.21.fw
  818676    APR-08-1999  08:59:30   sm35.fw
  642232    APR-09-1999  05:44:30   pxm_bkup_1.1.21.fw
In the file system :
    total space :  819200 K bytes
    free  space :  787150 K bytes
```

Step 6 Burn the backup boot into flash by using the “downloadflash” command:

```
node-prompt> downloadflash
writing pxm_bkup_1.1.21.fw to flash...
Board recognized as a PXM1A board ...
Checksum size is 642230 ...
Erasing the flash ....
FLASH erase complete
Downloading C:/FW/pxm_bkup_1.1.21.fw into the flash ...
verifying flash contents ....
Flash ok ....
```

Repeat this on the standby PXM. Note that you can only have the one backup boot file in the /FW directory. Remove any old backup boot files by issuing the cd /FW command to move to the FW directory and issuing the rm command to remove the old files.

Step 7 Reboot the shelf:

```
node-prompt> resetsys
Do you want to proceed (Yes/No)? yes
```

You will need a console connection to both of the PXMs.

The shelf should boot into backup boot and display the VxWorks prompt “->”.

Step 8 Format the disk:

```
-> ataFormat
IDE: format in progress. This takes a while  ........
................................
Disk format complete. Reboot the system  .....
value = 0 = 0x0
```

This will take a long time (~25 minutes), so be patient.

Step 9 Repeat Step 8 on the other PXM. The system may report unable to register standby. You can ignore this message and proceed to Step 11.

Step 10 Reboot the PXM:

```
-> reboot
```

Step 11 On the workstation, download the PXM firmware:

```
unix-prompt> tftp pxm.ip.address
tftp> bin
tftp> put pxm_1.1.21.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 12 Set the firmware version to be booted:

```
-> setPXMPrimary "1.1.21"
```

Step 13 Repeat steps 11 and 12 on the other PXM.

Step 14 Reset the PXM:

```
-> reboot
```

Step 15 Repeat Step 14 on the other PXM.

Step 16 Download the saved configuration to the shelf:

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

Step 17 Download the service module firmware to the shelf:

```
unix-prompt> tftp shelf.ip.address
tftp> bin
tftp> put frms8et1_10.0.00.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 specific firmware.

Step 18 Restore the configuration:

```
node-prompt> restoreallcnf -fNODENAME_0409990528.zip
The saved FW version (1.0.00) is not same as the current FW version (1.1.21)
Do you want to proceed with the saved FW version (1.0.00)? no
Do you want to keep the current FW version (1.1.21)
(WARNING, the databases in these FW versions must be
compatible or upgradeable for this to work)? yes
All current config will be replaced with the specified restored config and the
shelf will be reset.
Do you want to proceed (Yes/No)? yes
Syncing ......
Flash download completed.
```

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 1.1.21 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 firmware image.

```
tftp <ip address of the MGX 8850 shelf >
bin
put frsm_<version>.fw POPEYE@SM_1_<slot#>.FW
```

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

or

```
tftp <ip address of the MGX 8850 shelf >
bin
put frsm_<version>.fw POPEYE@SM_1_0.BOOT
```

for a slot-independent image,

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.

```
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 1.1.21 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
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.
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.

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.
CSCdm12929	Symptom: FRSM-2CT3 card throughput drops as frame size drops below 144 octets. Conditions: Currently FRSM-2CT3 has some system limitations when the frame size is less than 144 bytes. We will improve this to some extent in the next release. Workaround: There is no work-around for this.

Bug ID	Description
CSCdm17478	Symptom: This bug is a cell spacing/rate issue of the traffic being pumped. It's under analysis still. Workaround: The work around is to increase the IBS to 100 so that no drops are seen.
CSCdm19747	Conditions: cnfrscprtn and change vpi range to: vpi min =0, vpi max =0 This will lead to deleting connections that vpi is not 0. Symptoms: swerr 20909, swerr 20182, swerr 21501, swerr 20320 Workaround: If there are many connections on the feeder trunk. Don't change the vpi range to smaller value than the connections' vpi The cnfrscprtn should be blocked at the source if there are conns on the interface.
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
CSCdm28951	Symptom: PXM having wrong A-bit status Conditions: Unknown. Workaround: There is no work-around for this.
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 work around for this.

Bug ID	Description
CSCdm33677	Symptom: Not able to add ABR1 connection from PXMUNI to PXMUNI (3-segment) whenever the feeder trunk has some of its bandwidth used up due to other connections. Condition: Using SV+ to add ABR1 connection. The SCR field is default to the max port bandwidth and not editable (greyed out). 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).
CSCdm44173	Symptom: Negative test failure. Changing the DC type results in connection being lost. Conditions: Changing the daughter card 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 daughter card 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 the should not result in connection deletion. Workaround: There is currently no workaround for this.
CSCdm46245	Symptom: LED alarm light displays but dspalms shows no alarms. Condition: This intermittent condition occurs where Major Alarm red LED light displays while there is no actual alarm(s). CLI command “dspcds” shows Major shelfIntegratedAlarm, but dspcd (on service module) or dspalms shows all clear. This problem/condition is under investigation. Workaround: None.

CSCdm46394	Symptom:
	SYSTEM ERROR 20208 occurred during SM images upgrading to 10.0.02_01Jun99_1
	Condition:
	This is a one time occurrence. The following is observed:
	`##################################`
	`###### SYSTEM ERROR 20208 1 1179649 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:
	No workaround. This error is not causing any problem as the port state will be updated correctly subsequently by the individual port trap.

Bug ID	Description
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: There is no work around.
CSCdm53758	Symptom: Channel alarms do not get propagated to the middle segment if NNI signalling is enabled. Condition: This happens because the channel level traps are disabled. This will be fixed once a bulk trap mechanism is implemented to indicate channel alarms. Please look into the Eng-Note for more details. Workaround: None.
CSCdm54916	Symptom: CESM-T1 with UNI connections start showing AIS-OAM cell incrementing. This can be seen using the **`dspchancnt`** command. However, no traffic loss has been observed because of these AIS cell increment. Condition: This problem is intermittent. Workaround: There is currently no work around for this.
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.
CSCdm61299	Symptom: Cannot display error counts for APS lines

Bug ID	Description
CSCdm62224	Symptom: Rpm-registration fails after a switchcc.Ipc-port open fails Workaround: No workaround.
CSCdm62238	Symptom: The active RPM in slot10 comes up & remains in reserved state after execution of the resetsys command. Workaround: No workaround.
CSCdm67166	Symptom: The dspcd command shows invalid PXM card state while it is in hold. Workaround: No workaround.
CSCdm67177	Symptom/Condition Save restore configuration does not work on an individual SM basis. Workaround: No workaround.
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
CSCdm83469	Symptom: T1 lines on an enabled T3 showed up as failed. Reason: Unknown. Workaround: There is currently no work around for this. A reset might help.
CSCdp02888	Symptom: Feature enhancement: allow users to turn on/off CAC on PXM feeder trunk

Bug ID	Description

CSCdp02893	Symptom:
	Customer has indicated that when you type more then 512 characters at the command line the FRSM cards resets. When attempting to reproduce in Cisco lab (GSEWAN), using the following equipment, the results came back negative.
	`ASC - 5.0.01_25May99_1`
	`FRSM-4t1 - 4.0.1926Mar99_1`
	The following results were returned on the CLI:
	`"ERROR: Input exceeds 512 characters, truncated"`
	But the FRSM did not reset.
	Workaround:
	There is currently no work around for this.

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.
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 work around for this.
CSCdp20130	Symptom: Telnet sessions fail after download of a private image. Conditions: This problem occured on a customer node, where a private build of FRSM was downloaded for the purpose of troubleshooting a data transfer problem. After this, telnet sessions to the PXM failed. Workaround: There is currently no work around for this.
CSCdm21127	Symptom: Connections set-up with the WAN manager have not enough BW in the ATM part. The WAN manager translates the CIR into ATM cells according to the following relation: Cells/s=CIR(bits/s)/384. The full ATM payload is assumed available and there is no reserve for protocol overhead and padding of AAL5.
CSCdp42511	Symptom: Switchcc indicates trunk failure or invalid system timing information
CSCdp44563	Symptom: OAM PVC manage is being turned off when average speed is being modified Description: When trying to modify the MCR value on RPM and PCR value on PXM it was noticed that the MCR value was changed correctly on the RPM but the oam-pvc manage field is being disabled.

Bug ID	Description
CSCdp20130	Symptom: telnet sessions fail after download of a private image Description: a private build of FRSM was downloaded for the purpose of troubleshooting a data transfer problem. After this, telnet sessions to the PXM failed.
CSCdm63250	Symptom: FRSM-2CT3 does not generate yellow alarm Condition The FRSM-2CT3 acts as a frame terminating device for the 28 DS1's on the DS3. The 2T3 is not generating a T1.5 yellow alarm for incoming AIS or LOF on the T1.5 level. This does not meet the specifications of TR62411, Bellcore GR499, or ANSI T1.403.
CSCdp09754	Symptom: FRSM-2CT3 X-bits not in compliance with standards Description: Physical layer testing on the SRM-3T3 has indicated that the X bits in the DS3 framing are following the OS level alarm integration timers, and are not in compliance with applicable standards: While the X bit declaration of LOF, LOS, and incoming AIS are followed properly in terms of criteria for yellow alarm declaration - they are not proper in terms of declare and clear times. The declare and clear times we noted were about 2.5 seconds and 15 seconds respectively. Bellcore 499 and TR 54014 (as well as ANSI T1.107) will state that yellow alarm generation should be as follows "RAI is sent by a DS3 sink as soon as it cannot identify valid framing, or it determines it is receiving AIS. If, implemented, the DS3 sink shall set both X-bits to 0 in the DS3 returning to the source. The X-bits shall both be set to 1 otherwise. The state of the X-bits shall not change more than once every second".
CSCdm72343	Symptom: FRSM-2CT3 M-frame seq for OOF not evaluated Description: The FRSM-2CT3 is not evaluating the M-Frame sequence for OOF (out-of-frame) criteria which is used to declare DS3 yellow alarm. Note that the SRM-3T3 does this correctly.
CSCdm94176	Symptom: Remote loopback cannot be enabled on the FRSM-VHS via the xcnfln command
CSCdp44290	Symptom: Unable to configure SRM alarm intervals

Bug ID	Description
CSCdp41865	Symptom: The delln command will not work if APS configured on line, yet user is allowed to issue delln, and no warning is issued Description: Lines 2 and 3 on PXM-155 were configured for APS. If a delln was issued on these lines, the CLI did not block this command nor did it issue any warning. When a dsplns was issued, these lines would show up as disabled. If a switchcc or a resetsys is then issued, these lines would show up as enabled on a dsplns screen Workaround: The delapsln command has to be executed before the delln command is issued.
CSCdp44390	Symptom: Inconsistency in alarm reporting on AUSM channels that were automatically deleted from the PXM
CSCdp42518	Symptom: clrsmcnf executed on FRSM-2CT3 caused PXM switchover
CSCdp34009	Symptom: PXM failed to initialize in standby mode
CSCdp37538	Symptom: Last user request affects APS switching Description: 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 e.g. if 8850 p line is active, and last user request on 8850 is manual. If a switchyred is executed on the BPX, thenthe 8850 will switch from p to w, and then from w to p due to last user request.
CSCdp42530	Symptom: The switchyred on BPX caused APS oscillation Description: Bit error counters were clear before switchyred , however were not checked again until after the script was finished, so the data had rolled to the 24hr count...however the burst was noted immediately after the switchyred
CSCdm61299	Symptom: Cannot display error counts for APS lines Description: In order to properly identify and correct an APS error, the counts for the individual lines must be available.(ie both active and protection) The dspalmcnt command will only display one of the two lines (it's unclear which it will display under APS, since only 7 will be accepted) dspalmcnt "-sonet <sonetLineNum>" <LineNum> where LineNum = Slot.Line where Slot = 7 Line = 1 - n

Bug ID	Description
CSCdp37520	Symptom: APS lines on MGX 8850 do not show yellow alarm Description: With APS configured between BPX and MGX 8850, when the Tx cable out of the 8850 is removed, the BPX will show LOS on its APS line, however, the 8850 does not report a yellow alarm. (This occurs when tx of both APS lines is pulled, no yellow alarm reported... BPX reports yellow alarm if both of its lines go into yellow alarm.... (rx cable of 8850 pulled)
aCSCdp37523	Symptom: Trap # 50607 has wrong reason code Description: 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....
aCSCdp36477	Symptom: Switchcc on 8850 causes aps switch on bpx Description: 8850 connected via 7.1 & 8.1 APS line to BPX BXM 11.5 & 12.5 When a switchcc is performed on the MGX, the APS line does not switch on the MGX, however, the APS line does switch on the BPX. Log on the BPX end indicates that the switch occurred due to Signal Fail condition, however the dspbecnt on the MGX side shows no error counts on the active APS line.
aCSCdp37509	Symptom: Failure of manual aps switch does not generate error messages Description: Created an LOS condition on an APS line by removing the rx cable. Then executed a manual APS switch from the active APS to the line that has gone into LOS. As expected the manual APS switch failed, however, the CLI did not return an indication that the command did not go through; in addition, log entries and traps were not generated. When the same test is performed on the BPX, an error message is recorded in the log, and a trap is sent out
aCSCdp27247	Symptom: Reset of standby PXM with active APS line causes APS failures
aCSCdp31887	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
aCSCdp44521	Symptom: The cnfapsln command causes system to reboot and lockup Description: Configuring APS using the command cnfapsln 1 5 9 1 1 1 1. When this command was executed, the telnet session was terminated and the system reset. After the PXMs came back up, it was not possible to log back in.
aCSCdp41924	Symptom: Could not access system due to task spawn failures

Bug ID	Description
CSCdp35632	Symptom: No CLI exists to change the port queue ratio Workaround: Use the xcnfport command to configure the queue ratio.
CSCdp35780	Symptom: No CLI exists to change the queue select for a channel workaround: Use the xcnfchan command to change the queue select for a channel
CSCdp20616	Symptom: cell-loss on PXM-UNI connections on switchover caused by SRM-back card removal Conditions: the problem is intermittent.., i have not been able to reproduce consistently.. here is one of the sequence: resetsys with srm mismatch(one of the srm pulled out) slot 7 active, slot 8 mismatch and db sync done. put srm corresponding to slot 8 slot 7 active, slot 8 standby now pull srm corresponding to slot 7, when slot 8 shows green, insert back the srm slot 7 standby, slot 8 active.. pull pull srm corresponding to slot 8, slot 7 active, slot 8 standby now there will be data loss on PXM UNI connections Workaround : Do switchcc 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.
CSCdp44837	Symptom : When deleting large no. of connections using a script, it was found that for some connections, the resorces were not freed properly. Workaround : do switchcc

Bug ID	Description
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 1.1.21.
CSCdp43711	Symptom: When adding a DAX connection between AUSM and PXM, the connection goes into alarm, although there are no line or port alarms. Conditions: 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 occured 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.
CSCdp37193	Symptom: Installing a PXM in standby slot causes SM failures Condition: This problem was primary observed due to an inconsistent subnet/IP address on the standby card. While explicitly configuring it has to be made sure that the right values are updated on the right bootChange field. Workaround: There is currently no work around for this except checking for the right config
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.
CSCdm60455	Symptom: cannot modify SRM line alarm configuration parameters Workaround: No workaround.

Bug ID	Description
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.
CSCdm60448	Symptom: Condition: x-bit setting after detecting line failure is not compliant with Bell core standards, i.e. one sec. line failure (either LOS or LOF) WorkAround Currently there is no work-around to this problem.

Known Anomalies for VISM

The following is the list of known anomalies in the MGX 8850 VISM service module, Release 1.00 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
CSCdp20174	Symptom: VISM does not recognize LOS Description: If T1 cables are disconnected from the VISM card, or the connected channel bank is powered off, the VISM card does not detect LOS. The card still acts like the line is connected. Reported by ATT Piscataway, MR:000233, Jan Sussman
CSCdp21467	Symptom: VISM ignores echo setting Description: When sending SGCP messages that tell the VISM to turn on echo cancellation, the actual endpoints setup do not have ecan turned on. WorkAround: The work around for this issue in VISM 1.0 is to use the shellcon command ccIgnoreLcoEcan. Please note that this change via the use of this command is not persistant. This command needs to be re-executed everytime VISM is reset/re-booted.
CSCdp32764	Symptom: Undeleted Connections existed on VISM after overnight calls Description: We have set up the VISM to originate and terminate on same T1 line, We ran the overnight calls and we observed that each endpoint had connection associated with it. VSC was sending DLCX message but VISM was responding with 510 NACK message and reason code was - CALL/Endpoint Unknown.

Known Anomalies for RPM

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 □%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.

```
                   e10/1/2
+---------+e0/1          +---------+    PVC       +----------+ e14/1/2
|  CE1    |--------------|  PE1    |--------------|  PE2     |------+
| sys-2-1 |      +-------|         |sw1.1    sw1.1|          |      |
+---------+      |       +---------+              +----------+      |
    | e0/3       | e10/1/3                                          |
    |            |                                                  |
    | e0/2       |                                                  |
+---------+      |                                +----------+ e0/1 |
|  CE3    |------+                                |  CE2     |------+
| sys-2-2 |e0/1          PE1 ==> RPM-18-110       | sys-2-4  |
+---------+              PE2 ==> RPM-18-114       +----------+
```

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 *1.1.11 Cisco WAN Switching MGX 8850* publications.