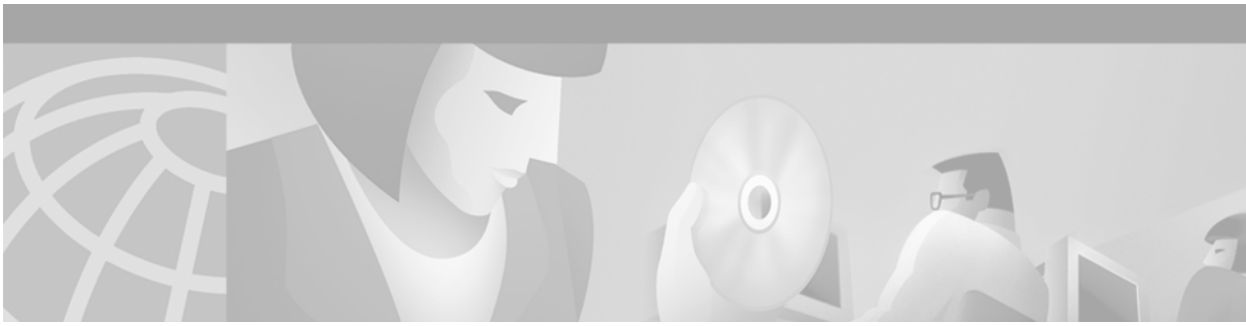

Release Notes for Cisco WAN MGX 8850 Release 1, MGX 8250, and MGX 8230 Software Version 1.2.01

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About These Release Notes

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription.

Note that for Release 1.2.01, the user documentation (command reference, overview, and installation and configuration guides) were not updated. Use the Release 1.1.3 documents in addition to this release note.

Product documentation for MGX 8850 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/1_1_31/index.htm

Product documentation for MGX 8250 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8250/1_1_31/index.htm

Product documentation for MGX 8230 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8230/1_1_31/index.htm

Product documentation for VISM 2.1(1) is available at the following URLs:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/

Product documentation for RPM 1.1 is available at the following URLs:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/rpm/index.htm
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8250/rpm/index.htm
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8230/rpm/index.htm

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Features Introduced in Release 1.2.01

Release 1.2.01 is a feature release. The following table contains a short description of the new features that are available with Release 1.2.01.

Features
Standard ABR on FRSM-VHS Modules. This feature implements standard TM 4.0 ABR service on the FRSM-VHS card.
APS Support on SRM-E. The enhanced SRM-E Service Redundancy Module, which was introduced in Release 1.2.00, now provides GR.253 and ITU Annex-A and Annex-B APS 1+1 support.

Standard ABR on FRSM-VHS Modules

The feature implements TM 4.0 ABR service on the FRSM VHS cards which include FRSM-2CT3, FRSM-2T3E3, FRSM-HS2 and FRSM-HS2/B. The current FRSM supports a pre-standard version of congestion control- foresight. This feature provides standards compliant ABR congestion mechanism in addition to foresight. The module will generate RM cells to dynamically increase or decrease bandwidth rate. The scope involves to including all applicable modes of behavior Source, Destination or Switch.

Only relevant modes need be considered. Connections with standard ABR parameter will be mapped to appropriate queues that also will co-exist with foresight connection types. For more information, refer to ForeSight and Standard ABR Coexistence Guidelines, page 8.

This feature will be implemented via appropriate MIBS and CLI. This feature is supported by CWM 10.5.10 patch 1. There will be one common license for foresight and standard ABR on FRSM. This is a billable feature. Standard ABR fulfills the standards compliance part of TM 4.0.

APS Support on SRM-E

The enhanced SRM-E Service Redundancy Module now provides GR.253 and ITU Annex-A and Annex-B APS 1+1 support. The SRM-E supports a new one-port OC3/STM1 back card, BERT, 1:N redundancy for the 8 port service modules and both T1 and E1 bulk distribution for the 8 port service modules. For more information on SRM-E, refer to SRM-E, page 88 and CLI Modifications in 1.2.0x Baseline, page 10.

For intercard APS to operate properly on the MGX 8850 and MGX 8250, an APS connector must be installed between the two cards. For more information on the APS connector and how to install it, see the *Cisco MGX 8850 Routing Switch Hardware Installation Guide*.

Note The MGX 8230 does not require the APS connector.

Features Not Supported in This Release

- MPLS inter AS, MPLS TE, and POS port-adapter are not supported features on RPM.
- Layer 2 support as an AutoRoute routing node
- Interworking with Cisco 3810

MGX 8220 Hardware That Has Been Superseded by MGX 8850-Specific Hardware

The following MGX 8220 hardware has been superseded by MGX 8850 hardware.

- The MGX-SRM-3T3-C front card replaces the original AX-SRM-3T3-A front card and the MGX-BNC-3T3 back card replaces the original AX-BNC-3T3 back card. Both the AX-SRM-3T3-A/AX-BNC-3T3 card set and the MGX-SRM-3T3-C/MGX-BNC-3T3 card set are supported on the MGX 8220.
- The AX-SCSI2-2HSSI is superseded by the MGX-SCSCI2-2HSSI/B, which works with the MGX-FRSM-HS2 and MGX-FRSM-HS2/B front card.

Service Module Redundancy Support

MGX 8850 provides high-speed native ATM interfaces, which can be configured as ATM UNI ports or trunks. The following table contains redundancy support information for service modules.

Table 1 Service Module Redundancy Support

Front Card Model #	Redundancy Supported
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-8T1/B	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-HS2/B	with HSSI back card, 1:1 redundancy with 12IN1-8S back card, no redundancy
MGX-FRSM-2CT3	1:1 redundancy
MGX-FRSM-2T3E3	1:1 redundancy
MGX-FRSM-HS1/B	No redundancy
MGX-RPM-128M/B	1:N redundancy
MGX-RPM-PR-256	1:N redundancy
MGX-RPM-PR-512	1:N redundancy
MGX-VISM-8T1	1:N redundancy
MGX-VISM-8E1	1:N redundancy
Note Support for 1:N redundancy is provided in conjunction with an MGX-SRM-3T3 card or an MGX-SRM-E card.	

Bulk Distribution is supported for T1 lines only on SRM-3T3 cards.

Bulk Distribution is supported for T1 and E1 lines using the SRM-E card.

Network Management Features

Network management features are detailed in the *CWM Release 10.5.10 Patch 1 Release Notes* at: http://cisco.com/univercd/cc/td/doc/product/wanbu/svplus/index.htm

Port/Connection Limits

Connection limits can vary. The table below shows total connections per card, but also shows the number of connections per port with LMI enabled. For example, the new FRSM-HS2/B card using a HSSI back card can support a total of 2000 connections on the card. However, if LMI is enabled on both ports, the

total number of connections goes down. If StrataLMI is enabled for one ports, that port supports 560 connections. The other port not configured for LMI can support 1000 connections, for a total of 1560 connections.

Overall, there is a limit of 16,000 connections per shelf.

Refer to Table 2 for detailed connection information.

Table 2 Port/Connection Limits

Card Type	Back Card(s)	Conns./Card	Physical Ports	Logical Ports	Per port with StrataLMI	Per port with Annex A/D NNI/UNI
MGX-FRSM-HS2/B	HSSI	2000	2	2	560	898
	12IN1-8S	4000	8	8	560	898
MGX-FRSM-HS2	HSSI	2000	2	2	560	898
MGX-FRSM-2CT3	BNC-2T3	4000	2	256	560	898
MGX-FRSM-2T3E3	BNC-2T3	2000	2	2	560	898
	BNC-2E3	2000	2	2	560	898
	BNC-2E3A	2000	2	2	560	898
MGX-FRSM-HS1/B	12IN1-4S	192	4	4	192	192
MGX-AUSM-8E1/B	RJ48-8E1	1000	8	8	N/A	N/A
	SMB E1	1000	8	8	N/A	N/A
MGX-AUSM-8T1/B	RJ48-8T1	1000	8	8	N/A	N/A
AX-CESM-8E1	RJ48-8E1	248	8	248	N/A	N/A
	SMB-8E1	248	8	248	N/A	N/A
AX-CESM-8T1	RJ48-T1	192	8	192	N/A	N/A
MGX-CESM-8T1/B	RJ48-T1	192	8	192	N/A	N/A
MGX-CESM-2T3E3	BNC-2T3	1	1	1	N/A	N/A
	BNC-2E3	1	1	1	N/A	N/A
AX-FRSM-8E1	RJ48-8E1	1000	8	8	560	898
	SMB-8E1	1000	8	8	560	898
AX-FRSM-8E1-C	RJ48-8E1	1000	8	248	560	898
	SMB-8E1	1000	8	248	560	898
AX-FRSM-8T1	RJ48-8T1	1000	8	8	560	898
AX-FRSM-8T1-C	RJ48-8T1	1000	8	192	560	898

For the MGX8230 and MGX 8250 Edge Concentrators, 16,000 connections (PVC) on the PXM1 based PAR Controller. If the MGX is a feeder to a BPX, only 15,729 feeder connections are available—271 connections are reserved for communication between the BPX and MGX. Maximum number of PXM UNI connections supported is still 4000 (as in prior releases).

SNMP MIB

SNMP MGX Release 1 MIB are provided with the delivery of this release. The MIB is in standard ASN.1 format and is located in the same directory within the release bundle on CCO. These files may be compiled with most standards-based MIB compilers. The tar file for MIB contains the file release notes that contains the MIB release notes.

For changes in this MIB from the previous release, please refer to the MIB release notes.

Their are two formats contained in the bundle:

- old_mibFormat
- new_mibFormat.

Note The old_mib_Format is going to be discontinued in a future release.

Notes and Cautions

The following notes and cautions should be reviewed before using this release.

Removing PXM-UI-S3 Back Card with Stratum 3 Level Clock Configured

Pulling out active PXM-UI-S3 back card with Stratum 3 level clock configured will cause the shelf to lose the backplane clock. To avoid this problem,

- always enter switchcc first
- try to replace PXM-UI-S3 back card on standby PXM.
- If core card redundancy is not available, before removing the card, on the active PXM, enter the following command:

  cnfclklevel 4
- If by accident the PXM-UI-S3 card is removed, entering the same command will restore the backplane clock.

Using Inband Clock Source with PXM-UI-S3

Using Inband clock source with the PXM-UI-S3 will cause a clock slip. To avoid this problem, enter the following commands to configure the clock source as an S3 level inband clock source each time the card is activated, such as after entering a **switchcc** or **resetcd** command.

cnfclklevel 4

cnfclksrc <*feeder_trunk_number*> P

cnfclklevel 3

cnfclksrc <*feeder_trunk_number*> n

cnfclksrc <*feeder_trunk_number*> p

Note **<*feeder_trunk_number*> is 7.1 for MGX 8850 and MGX 8250.**

Loopback Plug on a HSSI:DTE Interface

Using a loopback plug on a HSSI:DTE interface is not supported and can bring the node down. Please refer to CSCdv79470 in the Known Anomalies for Platform Software Release 1.2.01 and Service Module Firmware, page 26, for more information about this anomaly.

UPC Connection Parameters

In Release 1.1.40 and higher, the default PCR is 50 cps, and the default for policing is "enabled." These settings are insufficient for running RPM ISIS protocol over the connection, and with such settings, the ISIS protocol will fail. The PCR value needs to be increased, depending upon the number of interfaces configured for ISIS on the RPM. CLI modification and changes in this release.

Depending upon your connection type, you can use the following CLIs to modify the PCR parameter.

- **cnfupccbr**
- **cnfupcvbr**
- **cnfupcabr**
- **cnfupcubr**

ForeSight and Standard ABR Coexistence Guidelines

ForeSight is similar to the rate-based ABR control system in TM 4.0 in that they both use Rate up and Rate down messages sent to the source of the connection to control the rate a connection runs at, based on congestion within the switches along that connections path. Both systems use Resource Management (RM) cells to pass these messages. There are differences between the two systems that need to be considered.

RM Cell Generation

ForeSight is a destination-driven congestion notification mechanism. The destination switch is responsible for generating the RM cells, which defaults to every 100 ms. This means that any rate modifications at the source end happen approximately every 100 ms, and the time delay between the actual congestion at the destination and the source getting to know about it could be 100 ms.

In standard ABR a source generates FRM cells every (nRM) cell intervals, where *n* is configurable. These are used to pass congestion information along to the destination switch, which then uses this information to generate BRM (Backward RM cells) back to the source A further consideration is that the actual user data flow will be lower for an equivalent rate due to the additional RM cells. Therefore, the more traffic being generated on a connection at any one time, the faster the feedback will be to the source.

There is also a TRM parameter which states that if no RM cells have been generated after this time has passed then one will automatically be sent. Depending upon the speed it is running at, an ABR connection may therefore react faster or slower to congestion than the equivalent ForeSight connection. (for example, if an ABR connection runs at 100 cells per second, and nRM is 32, then approximately

three RM cells will be generated per second, or once every 300 msecs. If it runs at 1000 cps then an RM cell would be generated approximately every 30 msecs. In both cases, the equivalent ForeSight connection would generate an RM cell every 100 msec.)

Reaction to Feedback Messages – Rate Up

In ForeSight, in response to a Rate Up cell from the destination, the source increases its rate by a percentage of the MIR for that connection. If we call this percentage the rate increase percentage (RIP), then RIP is configurable at the card level (the default is 10 percent). In the case where MIR is low, the ForeSight rate increase will be slow as it has to increase as a percentage of MIR (rather than CIR).

On a standard ABR connection, in the event of available bandwidth (no congestion) the source increases its rate by a factor of (RIF*PCR). This means the rate increase step sizes are much bigger than for ForeSight for larger values of RIF (RIF has a range of 1/2, 1/4,....,1/32768). If RIF is not configured properly then standard ABR will ramp up its rate much faster and to a higher value. This is aided by the fact that the step sizes are bigger and the step frequency is higher in comparison with ForeSight.

Reaction to feedback messages – Rate Down

In ForeSight on receiving a Rate Down cell from the remote end, the source reduces its current rate (actual cell rate) by 13 percent. The rate decrease percentage (RDP). RDP is configurable at the card level.

In standard ABR, rate decrease is by an amount (RDF*ACR). Currently, the default value of RDF is 1/16 (6.25 percent). This means when this connection co-exists with ForeSight connections, in the event of congestion ForeSight connection reduces its rate by 13 percent whereas standard ABR connection reduces its rate by only 6.25 percent. Therefore, in the case of co-existence, if we need to approximate the same behavior across the two connection types, then RDF should be changed to 1/8, so that both connections ramp down by the same amount (13 percent).

Fast-Down

In ForeSight if the destination egress port drops any data due to congestion then the destination sends a Fast Rate Down cell. Also, if a frame cannot be reassembled at the egress due to a lost cell somewhere in the network, a Fast-down will be generated. On reception of Fast Rate Down the source reduces its current rate by 50 percent (this is again a card-level configurable parameter).

Standard ABR does not distinguish between drops and the ECN/EFCI threshold being exceeded. This means that, in case of drops in the egress port queue, a standard ABR connection rate reduces by only (RDF*ACR) but the ForeSight connection rate reduces by (ACR*0.5). Therefore, in the case of co-existence, if we need to approximate the same behavior across the two connection types then Fast Down could be effectively disabled by configuring the reaction to be 13 percent rate down instead of 50 percent.

Guidelines

The two systems will work together within the network, but as the above description suggests, if the differences between the two systems are not taken into consideration, then a ForeSight connection and an ABR connection with the same configuration parameters will not behave the same way within the network.

ABR and ForeSight provide a mechanism for distributing excess bandwidth between connections over and above the minimum rate, therefore if these guidelines are not taken into consideration then the allocation of this excess bandwidth may be biased toward connections running one of these algorithms over connections running the other.

If this is a requirement, the following guidelines may be useful, assuming ForeSight is set to defaults except for Fast Rate Down which is set for 13 percent.

1. **Nrm**: Nrm needs to be set at a value whereby the approximate RM cell generation is 100 milliseconds, to match that of ForeSight. This calculation is based on the expected average, or sustained, cell rate of the connection. However, if the (potential) fast-down messages from ForeSight are left to equate to 50 percent rate down, then an estimate of how often this may occur needs to be made and factored into the equation. If the connection receives Fast-down messages, then this would make the ForeSight connection react faster than the equivalent ABR connection to congestion. To compensate for this, Nrm needs to be set at a value of less than 100 msecs, a suggested value to aim for is between 60-70 msecs (this would be approximate as *n* is configurable in steps of 2**n). This would mean that, in the event of congestion, the ABR connection would start to react faster.
2. **RIF**: Rate increase factor is a factor of PCR in ABR and MCR in ForeSight. The default RIF for ForeSight is MCR*.10. Therefore, RIF should be configured so that (PCR*RIF) approximates MCR*0.1. If Fast-Down is still effectively enabled, then PCR*RIF should approximate MCR*0.62 to compensate.
3. **RDF**: (Rate Decrease Factor) RDF should be 1/8. This approximates to 13 percent that ForeSight uses.

The following worked examples may help explain this further

Assume a network is currently running ForeSight with default parameters, and supports the following four connection type, where CIR = MIR, PIR = port speed, and QIR = PIR:

T1 Port Speed64K CIR

Example:

CIR = MIR = 64K
PIR = QIR = port speed = 1544
Fastdown = 13%

(The calculation used to convert between frame based parameters (CIR, PIR, and so on.) and their equivalent cell-based parameters is FR_param *3/800. This allows for cell overheads, and so on. based on frame sizes of 100 octets.)

CIR = MIR = (64000*3/800) = 240 cps
PIR = QIR = (1544 *3/800) = 5790 cps

ForeSightABR
Rate-up equals (240*.1) = 24 cpsRIF equals x where (1590/x) = 24 cps
X needs to be approx 200
RIF equals 256 (nearest factor of 2)

RDF equals 13%RDF = 1/8
Nrm equals 100 msecsNrm equals 32

RM cells will be generated somewhere between 6 (5790 cps approx equal to 32 cells per 6 msecs) and 133 msecs (240 cps approx equal to 32 cells every 133 msecs) depending on ACR.

CLI Modifications in 1.2.0x Baseline

Table 3 lists the new and modified commands in Release 1.2.0x baseline.

Table 3 New/Modified CLI Commands in 1.2.0x Baseline

CLI	Changes	For Feature
addapsln	The parameter "archmode" sets the APS architect mode to be used on the working/protection line pairs. The new value "5" is added to specify 5: 1+1 Annex A.	ITU APS Annex-A SRM-E[1]
addcon	Two new values have been introduced for cesCas type to configure a channel with the multiframe option enabled. The values are ds1SfCasMF and ds1EsfCasMF. The channels on a particular line can be either all MF (SF MF or ESF SF) or all non-mf (SF or ESF). The first connection type added on a particular line (mf/non-mf) decides the sync mode. The second connection must have the same cesCas type, and so on.	CESM[2]
adddiagtest	Diagnostics.The diagnostic commands are modified for test number 8-SRM M13 Access. This command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot. Refer to the *Release Notes for Cisco WAN MGX 8850, MGX 8230, and MGX 8250 Software Version 1.1.40* at http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/14/rnotes/rn1140.htm	SRM-E
addlink	Bulk redundancy/distribution. The existing command **addlink** is modified to link a certain number of T1/E1 channels from a bulk interface on SRM-E to a service module's T1/E1 lines. This command checks the card type of the service module in the target slot. The service module must be a T1/E1 type, depending upon the tributary type configured for the SRM-E line using the **cnfln** command. A service module will switch all its lines to bulk mode even if only one line is mapped to a tributary from SRM-E. **Note** You must enable the lines on the SRM-E cards (using the **upln** and **cnfln** commands) before you can configure them for distribution.	SRM-E
addln	Existing **addln** command is modified to support per line interface type configuration (used only with the 12IN1-8S). If the user doesn't specify <interface_type>, the default type V.35 is used.	FRSM-HS2/B SRM-E
addlnloop	Physical interface. Existing command **addlnloop** is modified to add a logical loopback on a line on the new card. (SRM-E)	SRM-E
addred	Redundancy activities. The existing command **addred** is modified to configure redundancy on the new card.	SRM-E
clralldiagtests	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot.	SRM-E
clralm	Managing alarms. Existing command **clralm** is modified to clear alarms on a line on the new card.	SRM-E
clralmcnt	Managing alarms. The existing command **clralmcnt** is modified to clear alarm counts on a line on the new card.	SRM-E
cnfbert	BERT activities. The existing command **cnfbert** is modified to configure a line or port for BERT and start the test on the new card.	SRM-E
cnfclktype	Existing **cnfclktype** command is added to FRSM-HS2B to configure line clock type for V.35/X.21 interfaces. This command is valid on the FRSM-HS2B-12IN1 card.	FRSM-HS2/B

Table 3 New/Modified CLI Commands in 1.2.0x Baseline (continued)

CLI	Changes	For Feature
cnfdiagparams	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot.	SRM-E
clrdiagresults	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot.	SRM-E
cnfclklevel	Permits the user to set the STRATUM level desired. (S-3 Clocking)	PXM-UI-S3
cnfdiagtest	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot.	SRM-E
cnflink	Bulk redundancy/distribution. The existing command **cnflink** is modified to configure the link for T1 byte-sync mapping on the new card. For byte-sync mapping on sonet interfaces, the T1 framing format should be configured. The framing format can be specified at line level for all links using the **cnfln** command. It can be then overridden on a per link basis using the **cnflink** command. **Note** The **cnflink** command is not applicable to 3T3 back cards. Also, byte-sync mapping is supported only for Sonet --> T1 mapping. Therefore, this command is not applicable if an SRM-E's line are configured for SDH --> E1 mapping.	SRM-E
cnfln	Existing **cnfln** command is modified on FRSM-HS2/B to support new MIB objects. **Note** Do not configure an interface to DTE mode when a physical loopback plug is plugged in. This will cause the line to go in and out of alarm and generate software errors on the PXM. If this situation occurs, use the command **cnfln** to configure the line as DCE to recover from the situation. For further information about this problem, refer to the Known Anomalies for Platform Software Release 1.2.01 and Service Module Firmware, page 26, number CSCdv79470. For SRM-E, **cnfln** command is modified to support new MIB objects and new enumerations for line rate. For tributary type, option VT2 (carries E1 signals in Sonet) is not supported in this release. For tributary mapping type, only option, 2 byte-synchronous mapping, is supported for T1.	FRSM-HS2/B SRM-E
cnfsrmcklsrc	Managing clock sources. Existing command **cnfsrmclksrc** is modified to support the new SRM-E card.	SRM-E
clrsrmcnf	Managing configuration. The existing command **clrsrmcnf** is modified to clear all card configuration including distribution links. The configuration cannot be cleared if redundancy is enabled.	SRM-E
delbert	BERT activities. The existing command **delbert** is modified to delete/terminate the operation in progress on the new card.	SRM-E
deldiagtest	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot.	SRM-E

Table 3 New/Modified CLI Commands in 1.2.0x Baseline (continued)

CLI	Changes	For Feature
dellink, delslotlink	Bulk redundancy/distribution. The existing commands **dellink/delslotlink** are modified to delete distribution links on the new card. After the last distribution link to a service module is deleted, the service module switches all its lines to non-bulk mode (to its back card).	SRM-E
delln	Physical interface. Existing command **delln** is modified to disable a line on the new card. **Note** A line cannot be deleted if distribution links are configured for that line.	SRM-E
dellnloop	Physical interface. Existing command **dellnloop** is modified to delete a logical loopback on a line on the new card.	SRM-E
delred	Redundancy activities. The existing command **delred** is modified to delete the redundancy configuration on the new card.	SRM-E
dspalmcnt	Managing alarms.The existing command **dspalmcnt** is modified to display alarm counts on a line on the new card.	SRM-E
dspalm	Managing alarms. Existing command **dspalm** is modified to display alarms on a line on the new card.	SRM-E
dspalmcnf	Managing alarms. Display alarm configuration for a line.	SRM-E
dspalms	Managing alarms. Existing command **dspalms** is modified to display alarms on all lines of a slot on the new card.	SRM-E
dspapsln	The display "1+1_Annex A" is added to when a line has been set to Annex A.	ITU APS Annex-A SRM-E[1]
dspbert	BERT activities. The existing command **dspbert** is modified to display the parameters and the results of an ongoing operation on the new card.	SRM-E
dspcd	The dspcd command on the CESM model B card is modified to display "CESM8T1B" next to the Fab number. This can be used to differentiate between CESM model A and B cards. CLI changes The channels on a particular line can be either all MF (SF MF or ESF SF) or all non-mf (SF or ESF). The first connection type added on a particular line (mf/non-mf) decides the sync mode. The second connection must have the same cesCas type and so on.	CESM[2]
dspdiagresults.	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot	SRM-E
dspdiagtests	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot.	SRM-E
dsplink, dspslotlink	Bulk redundancy/distribution. The existing commands **dsplink/dspslotlink** are modified to display distribution links.	SRM-E
dspln	Existing **dspln** command is modified on FRSM-HS2 B and SRM-E to display new objects.	FRSM-HS2/B SRM-E
dsplns	Existing **dsplns** command is modified to display interface type.	FRSM-HS2/B SRM-E
dsplog	The command **dsplog** will include SRME online diagnostics failure if it happens.	SRM-E

Table 3 New/Modified CLI Commands in 1.2.0x Baseline (continued)

CLI	Changes	For Feature
dspred	Redundancy activities. The existing command **dspred** is modified to display the redundancy configuration on the new card.	SRM-E
dspsrmclksrc	Managing clock sources. Existing command **dspsrmclksrc** is modified to display the card types of the current and previous SRM card.	SRM-E
dspsrmcnf	Managing configuration. The existing command **dspsrmcnf** is modified to display the current card configuration on the new card.	SRM-E
modbert	BERT activities. The existing command **modbert** is used to modify BERT parameters.	SRM-E
pausediag **resumediag**	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot	SRM-E
rundiagtest	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot	SRM-E
showdiagtests	Command is modified for test number 8-SRM M13 Access. The command will perform SRM or SRM-E hardware online diagnostics, depending upon what kind of cards are in the slot	SRM-E
softswitch	Redundancy activities. The existing command **softswitch** is modified to manually switch to the redundant module for the SRM-E.	SRM-E
switchapsln	The command is modified to include the following options: 3 = forced working-> protection 4 = forced protection->working 5 = manual working->protection 6 = manual protection-> working	ITU APS Annex-A SRM-E[1]
switchback	Redundancy activities. The existing command **switchback** is modified to switch back to the primary module from the redundant module for the SRM-E.	SRM-E
xcnfalm	Managing alarms.The existing command **xcnfalm** is modified to configure alarms for a line on the new card. The **xcnfalm** command allows only DS3 and E3 alarm thresholds to be configured.	SRM-E
xcnfcon	Two new values have been introduced for cesCas type to configure a channel with the multiframe option enabled. The values are ds1SfCasMF and ds1EsfCasMF. The channels on a particular line can be either all MF (SF MF or ESF SF) or all non-mf (SF or ESF). The first connection type added on a particular line (mf/non-mf) decides the sync mode. The second connection must have the same cesCas type, and so on.	CESM[2]

1. Added in Release 1.2.01.
2. Modified in Release 1.2.01.

Node Related

A maximum of one BERT test can be performed per bay at any point in time. The command **addln** should be issued before executing the **addapsln** command.

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
```

To insure that TFTP downloaded the appropriate boot code, perform the following procedure to verify the flash checksums.

Step 1 Log into the shelf.

```
cc <slot #>
```

Step 2 Verify that the two checksums are the same.

```
chkflash
```

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

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

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

In addition to clearing the entire configuration, **clrallcnf** command clears the network IP addresses. IP addresses and netmasks stay the same (**dspifip**). However, Cisco recommends entering the **cnfifip** command to reconfigure the network IP addresses. Network IP is gone (**dspnwip**), and must be re-configured using the **cnfifip** command. Refer to the entry on **cnfifip** in the *Cisco MGX 8850 Command Reference* for syntax.

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 up to 10 TFTP sessions per shelf.

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 supported only for adjacent slots.

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 by locking the actuator.

Note *When the card is reinserted the PXM automatically comes out of sleep mode.*

Caution **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 five 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: 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 first FREEDM and (B) and (C) are connected to the second 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 and 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 four 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 back card on that line. This is a hardware limitation on the back card and has been mentioned in the Release Notes in bug# CSCdm44993.

RPM Related

The RPM-PR and MGX-RPM-128M/B operate under the following IOS and CWM software releases.

MGX SW version	1.1.32	1.1.34	1.1.40	1.2.00	1.2.01
IOS Version	12.1(5.3)T_XT	12.2(2)T2	12.2(4)T	12.2(4)T1	12.2(4)T3
CWM	10.4.01	10.4.01 Patch 1	10.5	10.5.10	10.5.10 Patch 1

With MGX Release 1.1.32, two Route Processor Modules (RPMs) are supported; the MGX-RPM-128M/B and the RPM-PR.

The MGX-RPM-128M/B is a NPE-150 based router card capable of sustaining 150,000 pps. The RPM-PR is an NPE-400 based router capable of sustaining over 350,000 pps. The RPM-PR will only operate with IOS 12.1(5.3)T_XT or later. For the following section “RPM” refers to both the MGX-RPM-128M/B and the RPM-PR, (unless specifically called out). Some software versions and limitations are not applicable to the RPM-PR because it does not support IOS versions before 12.1(5.3)T_XT.

With MGX-RPM-128M/B versions earlier than 12.O.7T1, some limitations in Inter-Process Communication when the MGX-RPM-128M/B is at high loads can cause the PXM to declare that the MGX-RPM-128M/B has Failed. To avoid this with MGX-RPM-128M/B, software releases earlier than 12.0.7T1, throughput is limited to 62,000 pps, and it is recommended that MPLS configurations are limited to 100 interfaces. With RPM software releases from 12.0.7T1, those limitations are removed. In a separate limitation, the number of directly connected OSPF networks supported by an RPM is currently limited to 27. This means that any or all of the subinterfaces supported by the RPM can run OSPF, but the number of distinct OSPF networks supported is limited to 27. (A work around is available and is discussed below.) The limit of 27 arises because of the overheads of supporting separate link-state databases for separate networks.

In an application where the RPM is a Provider Edge Router in an MPLS Virtual Private Network service, a much better solution in any case is to use a distance-vector routing protocol between the customer routers and the RPM. A distance-vector routing protocol provides exactly the information required for this application: reachability information, and not link-state information. The distance-vector routing protocols supported by the RPM are BGP, RIP v1 and RIP v2, as well as static routing. With RPM software releases from 12.0.7T1, distance-vector routing protocols can be used with as many different networks as subinterfaces.

Note that if the RPM is acting as a Provider Edge Router in an MPLS Virtual Private Network service, and even if OSPF is running in a customer network, it is not necessary to run OSPF between the customer router and the RPM. If the customer edge devices run Cisco IOS, they can redistribute OSPF routing information into RIP using the IOS commands, redistribute RIP in the OSPF configuration, and redistribute OSPF in the RIP configuration. Similar configurations are possible for BGP. (For more

information on re advertisement, see the “Configuring IP Routing Protocol-Independent Features” chapter in the Cisco IOS Release 12.0 Network Protocols Configuration Guide, Part 1). Redistribution is not unique to Cisco CPE, and other vendors' equipment also supports redistribution.

RPM Front Card Resets on the Back Card Removal

The RPM front card may reset on an MGX 8250 switch when the ethernet back card is removed or inserted.

This reset problem can be easily avoided if “shut” interface is executed before the removal of the back card.

RPM-PR Back Ethernet Card Support

For Ethernet connectivity with the RPM-PR, the model “/B” four-port Ethernet back card is required (order number: MGX-RJ45-4E/B).

MGX-RPM-128M/B Ethernet Back Card Support

The model “/B” four-port Ethernet back card can be used with the MGX-RPM-128M/B module only in combination with IOS 12.2(2)T2 or higher. The model “/B” back card will not work on the MGX-RPM-128M/B with earlier versions of the IOS.

The order number is order number: MGX-RJ45-4E/B.

Older back cards can be used with any version of the IOS.

4-port Ethernet back card used with MGX-RPM-128M/B	Required IOS
model “/B” back card	12.2(2)T2
earlier back card models	Min. IOS for MGX-RPM-128M/B on MGX 8250 is 12.0(7)T

Limitations

CWM Recognition of RPM-PR and MGX-RPM-128M/B Back Cards

CWM does not distinguish between the Ethernet back card versions installed with the MGX-RPM-128M/B or RPM-PR. There is no functionality difference.

clrsmcnf

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

- SM not in slot
- SM in slot and in active (good) state
- SM in slot but in failed state, boot state or another state.

To be able to use an SM of a different type from the current one in a slot you can also use **clrsmcnf** for example, if there is a FRSM8T1/E1 in the slot with some configuration and the customer wants to use this slot for an AUSM8T1/E1 card.

The following are NOT supported on the MGX 8850. MGX 8250, and MGX 8230:

- Saving a configuration of an SM from one shelf and restoring it to the same slot on another shelf.
- Saving a configuration of an SM in a slot and restoring it to another slot of the same card type.

Problems Fixed in Release 1.2.01

The following is the list of problems fixed in the service module firmware and the Release 1.2.01 software. 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
CSCds25917	Symptom: The xdspsrmlink cli command does not output an error message when no argument is given for the command. Conditions: Whenever xdspsrmlink is executed without any arguments. Workaround: No workaround. Further Problem Description: xdspsrmlink command is not displaying error messages properly when it is called from the cli prompt without any arguments. The command instead prints that the table is empty, even when the table is not empty.
CSCdu54875	Symptom: xcnfchan doesn't change the service rate after upgrading to 1.1.34 Conditions: For Connections created in 1.1.2x This happens because the ChanServiceRateOverride and the ChanServiceRate was not initialized after the upgrade. This caused the mir,qir,pir to be calculated based on the ChanServiceRate (which was 0). Workaround: Configure the ChanServiceRateOverride to the default value (disabled) using either cnfchansrvrate <channel no> 2 <chan service rate> or xcnfchan -chn <chan no.> -en 3 -srvovrd 2

CSCdv15625	Symptom: Addlnloop on the srme card did not get the expected result. Conditions: • add line on srme oc3 card, addlnlloop on the srme line • add a line in one of the SM's say FRSM on slot 1 line 1 • addlink between slot1 line 1 to srme line. we can see that the line is still in alarm Workaround: The problem is because of hardware limitation. Supermapper chip has a version 2.0 which does not support the addlnloop. The newer version i.e. 2.1 or above supports addlnloop command. If we upgrade the supermapper to newer version then we should not see this problem.
CSCdv50663	Symptom: tstdelay at pop2/axsme failed across an XPVC with axsme and frsm-8t1 endpoints Conditions: tstdelay started from axsm-e of an XPVC which has pop2/axsme and pop1/frsm-8t1 a tstdelay initiated from frsm-8t1 end works fine Workaround: none
CSCdv62135	Symptom: bootChange command should have password authentication. Conditions: This applies to all existing PXM versions. Workaround: None
CSCdv66013	Symptom: Configuration of the APS line goes through even though the line has not been enabled for APS. Conditions: The happens on a line on which APS has already been enabled and disabled. Once in the disabled state the APS parameters can be configured without enabling the line for APS Workaround: Configure the APS parameters only after enabling the line for APS.
CSCdv73162	Symptom: Table Load exception error while resetting PXM using ctrl-x Conditions: During resetting a PXM using ctrl-x from console. Workaround: None.

CSCdv76409	Symptom: abrfst pvc's on AUSM not rating down to MCR when run over congested BXM Conditions: Lab environment. Manufactured congestion. Workaround: Configure IBS = 0
CSCdw02677	Symptom: FRSM-2CT3 keeps resetting on a certain enable.stats file. Condition: When there are more than a hundred ports and all port statistics are enabled with the peak enabled flag set. Workaround: Disable the new stats ID 25, 27,28
CSCdw08896	Symptom: Node went unreachable, could not execute dsptrks, dcondb 4 3. Could execute dspchans, and dsptotals Conditions: At the point in time when the Node went unreachable, the logs did not have any obvious indication that LMI task failed. Workaround: No workaround was required, as 11 mins later, the cards (PXM) switched over automatically, restoring service.
CSCdw09173	Symptom: Channel state on the CWM GUI is inconsistent with that of the switch Conditions: It happens under the following sequence of events - Channel fails due to Abit alarm - Port for that channel fails - Port for that channel clears Workaround: None Further Description: When the above mentioned conditions happen then the CWM database will show the connection state as OK instead of Fail as in the switch. To circumvent this problem, with the current implementation of CWM, the switch needs to send channel traps for all the failed channels once the port comes up.

CSCdw09742	Symptom: AUSM channels experiencing EgressPortQ discard after a switchcc. Conditions: The channels experiencing the problem is on a line using bulk distribution The line is configured as LoopTiming Workaround: Reset the AUSM card.
CSCdw11628	Symptom: Async updates are not sent out under certain conditions. Conditions: When both async updates and full updates are enabled. Workaround: Only async updates should be enabled.
CSCdw11644	Symptom: Frames shown to be tagged DE on a non tagging connection Conditions: traffic more than CIR and CLP to De mapping ignored. Workaround: This is a display problem, frames are not being tagged.
CSCdw23460	Symptom: Softswitch sometimes disturbs traffic flow. Conditions: 1. 1:N Redundancy 2. The secondary card had some configuration before being configured to secondary. Workaround: Before configuring a card to be the secondary card for 1:N redundancy, make sure that it does not have any configuration. Do a clrsmcnf for the card if it does have any configuration.

CSCdw33698	Symptom: The immediate symptom is that an MGX-8250 is not discovered from CWM. Even if telnet access to the switch exists, and pings are replied, snmp packets are not. Conditions: The CWM station (or workstation origination snmp packets) has a different subnet mask than the MGX Switch, doing VLSM. CWM and MGX are not in the same ethernet segment. Workaround: Change the subnet mask so that they match. Modify the subnet mask in the MGX-8250. Further Problem Description: The problem can be seen in situations such as this: CWM 192.168.100.79/24 | Router | MGX-8250 192.168.101.70/28 The MGX Switch mistakes the source IP Address for a broadcast address and therefore does not reply.
CSCdw34701	Symptom: The SRM DS3 line alarm logs are not detailed Conditions: When there is a alarm on the DS3 Workaround: None
CSCdw40773	Symptom: In 1+1 APS, the channel number is incorrect for WTR and DNR after SD clears on working line. Conditions: Configure 1+1 APS and create SD condition on working line, then clear the SD condition. Workaround: None.
CSCdw41946	Symptom: Loss of RPM configuration. Condition: The auto_config_slot<x> file size is set to zero resulting in an invalid con- figuration. Workaround: UNKNOWN

CSCdw47936	Symptom: cnfapsln does not send out trap 50613 Conditions: trying to configure APS Workaorund: none
CSCdw47943	Symptom: Configure upload file contains incomplete APS information Conditions: Always Workaround: none
CSCdw53351	Symptom: DE-CLP and FECN-EFCI mapping doesn't work properly for some configurations. Conditions: StdABR connection on a FRSM-8t1e1 Workaround: None.
CSCdw54609	Symptom: APS on a PXM1 line can not be added via SNMP, after a resetsys, unless the APS is added and deleted via CLI first. Conditions: Any PXM1 hardware running MGX Release 1.1.x or 1.2.01 and below. Workaround: Add and delete the APS via CLI for the first time. Subsequent provisioning via SNMP will then work. This has to be done on each line.
CSCdw55029	Symptom: Failed to CC to RPM card Conditions: Added sub interfaces and connection using scripts. Workaround: switchcc
CSCdw56886	An error can occur with management protocol processing. Please use the following URL for further information: http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903

CSCdw66418	Symptom: delapsln trap contains a wrong slot number of 0 Conditions: Always Workaround: None
CSCdw68321	Symptom: default value of lineClockType for a HSSI interface of HS2/HS2B is NonInvertedAndLooped instead of NonInvertedAndNotLooped Conditions: Always Workaround: None

Known Anomalies for Platform Software Release 1.2.01 and Service Module Firmware

The following is the list of known anomalies in the service module firmware and the Release 1.2.01 software. 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
CSCdp00537	Symptom: Shelf Integrated Alarm not updated correctly and traps are not send consistently when fan tray is removed. Conditions: When a fan try is removed. Workaround: None
CSCdp44837	Symptom: When deleting large no. of connections using a script, it was found that for some connections, the resources were not freed properly. Conditions: This problem was encountered sometimes when deleting more than 500 connections using a single “delchans” command. Workaround: Do switchcc. It is recommended to not group such a large number of connections in each “delchans” command. Restricting to 50 or 100 connections per delchans would help workaround this problem.

Bug ID	Description
CSCdr71479	Symptom: When using 1:N redundancy on MGX8250/8850 (PXM1), if slot 9 or 25 are configured in the 1:N group, upon transitioning to OR from slot 9 or 25, line alarms are generated. To date, the alarms observed have been RcvLOS (Receive Loss of Signal). Upon returning to the original service module the alarm clears. Conditions: 1:N redundancy must be configured with slot 9 and/or 25 as either the redundant card (1) or in the working group (N). - Upon a transition to or from slot 9 or 25, the physical lines will go into alarm. To date, the alarms observed have been Loss of Signal. This has been seen in 1.1.21, 1.1.23, 1.1.31, and 1.1.32. This has been confirmed with CESM and AUSM, but is not service module specific. Workaround: Only known workaround is to not use slot 9 or slot 25 in the 1:N redundancy group.
CSCds10377	Symptom: When one of the OC-12/OC-3 lines are in alarm the CLI dspapsln shows the line status as “ALM” instead of specifically indicating LOS/LOF. Conditions: When a OC-12/OC-3 line/trunk configured for APS goes into alarm because of LOS or LOF. Workaround: Use the dspalm CLI command to obtain the correct alarm status.
CSCds10382	Symptom: A descriptive line status is not displayed in the dumpaps command. Conditions: When APS is configured for OC-12/OC-3 line/trunk and the line status is checked using dumpaps command. Workaround: Use the dspalms CLI command for descriptive status of the lines.
CSCds10566	Symptom: The APS configured goes into “Architecture Mismatch”. Conditions: An OC-12/OC-3 line/feeder trunk is configured as Unidirectional mode on the BXM and Bi-directional mode on the PXM. The mode mismatch was detected by PXM, but incorrectly blocked all APS switching function. According to GR-253 the APS switching should function normally as unidirectional on both sides. Workaround: None. Further Problem Description: This feature is not supported in MGX 8800 Release 1.

Bug ID	Description
CSCds14512	Symptom: The OC-12 feeder trunk was configured as 1+1 unidirectional non- revertive mode on the PXM and the Agilent test set was sending invalid “SF-H” K2 bytes to the PXM. The “dspapsln” command did not display “protocol switch byte failure” after detecting the invalid K2 bytes. Conditions: When APS is configured and the remote end sends invalid “SF-H” K2 bytes. Workaround: None. Further Problem Description: The invalid K2 bytes is not being detected by the firmware.
CSCds26505	Symptom: When an ILMI signalling failure happens, it is not indicated to the user. The same problem is found during 1.1.32 regression test. Conditions: When ILMI is enabled and has failed. Workaround: Use 1. sh 2. IlmiShowCounters <portnum - 1> The value for “portState:” indicates the ilmi state 1 - ILMI OK, 2 - ILMI Failed.
CSCds73028	Symptom: After deleting the master side of the connection from the RPM there is still an assigned channel for this connection on the PXM. Conditions: Deleting master connection on the RPM side. Workaround: None
CSCds86780	Symptom: The commands dspcd, dspln, dsplns, dspport, dspports, dspcon, and dspcons do not return the prompt after adding multiple 3 segment connections using a script. Conditions: adding multiple 3 seg cons om MGX8850 using script Workaround: None

Bug ID	Description
CSCdt19805	Symptom: Executing a switchyred on some FRSMs and PVCs that were in alarm resulted in the dspcds output showing the cards clear. Conditions: Performing Softswitch Workaround: No known workaround.
CSCdt21978	Symptom: Popup message is appearing when executing commands. Conditions: After a resetsys is done and then a dspprfhist. Workaround: none
CSCdt22274	Symptom: Sonet port is receiving errors Conditions: Port is in local loopback and after the almcnt is cleared, the port errors continue to increment. Workaround: None
CSCdt27067	Symptom tstconseg fails intermittently when executed from the PXM. Conditions Normal conditions. Workaround None.
CSCdt35150	Symptom: Console port connection stopped while taking some captures, did not come up after doing 'delserialif 1' and 'addserialif 1'. Conditions: Normal Workaround: None

Bug ID	Description
CSCdt74149	Symptom: Select Card and then Configure from CiscoView. For FRSM-8T1/E1 or AUSM 8T1/E1 missing parameters from GUI: Line Module Description Line Module Serial Number Card Integrated Alarm BitMap This information is present on a FRSM 2CT3 card. Conditions: Normal conditions. Workaround: Use CLI
CSCdt80701	Symptom: primary rpm goes to mismatch state on a softswitch command Conditions: add rpm to redundancy 1:N following a clrsmcnf when rpm had 700+ connections and sub-interfaces Workaround: issue a second resetcd to rpm following the clrsmcnf
CSCdt90915	Symptom: When using the addlnloop command on a PXM card and specifying a remote line loop, the line was put in local line loop instead. Conditions: remote loop using addlnloop Workaround: Use the cnfln command to put the line in remote/local loopback.
CSCdt90991	Symptom: The command “cnfextclk” accepted E1 clock configuration when used to configure an external clock source on a T1 clock port. No warning was given. Conditions: Normal conditions. Workaround: Use the correct clock configuration for the external clock source port type.
CSCdu19822	Symptom: Frames gets CLP tagged when DE is disabled at the ingress and ingress is pumped at more than cir Conditions: DE is disabled at the ingress and ingress is pumped at more than cir Workaround: None

Bug ID	Description
CSCdu26221	Symptom: MIB files are not compilable with some specific compilers. Conditions: When trying to compile MIB files. Workaround: None.
CSCdu28611	Symptom: If you have a NNI connection built from a FRSM 2T3 via the PXM feeder trunk to an IGX, the IGX won't see ABIT alarm even if the FRSM is receiving ABIT alarm on the NNI link to another network. Conditions: Unknown Workaround: None.
CSCdu29306	Symptom: Card stops passing data. Dsportcnt will show LMI signalling timeouts, data incrementing only in the Tx direction. Port will register LMI failure. Conditions: Unknown. Workaround: Card reset.
CSCdu38671	Symptom: Clock controller running on internal oscillator after upgrade. Conditions: After upgrade from 1.1.23 to 1.1.34 Workaround: Reconfigure the clock. For the current scenario, from “dspcurclk” we find that the Trunk Interface 7.1 is set as Primary, to set the same the command is “cnfclksrc 7.1 p”.
CSCdu38711	Symptom: All PSU is showing 'missing' Condition: Not known. Workaround: None

Bug ID	Description
CSCdu46419	Symptom: With UBR connection, observed GCRA2 non-conforming cells on the ingress channel. Conditions: UBR is configured on the PXM to RPM and no policing is enabled. Even with OC3 rate, there are GCRA2 non-conforming cells on the ingress. Workaround: None.
CSCdu48231	Symptom: Ilmi failure on ports. Condition: When ilmi keep alive option is turned ON for the port and traffic flowing through the card. Workaround: None
CSCdu50072	Symptom: Deleting APS via SNMP requires “downing” the line. Conditions: The SNMP interface is used by CiscoView to manage APS for MGX Rel1. Workaround: Use the “delapsln” command, or de-activate the working SONET line.
CSCdu52789	Symptom: Port alarm present on the AUSM card. Conditions: Even after an upgrade, and there are no port alarms, or line alarms. Workaround: Wait a while and the alarm finally clears itself.
CSCdu52855	Symptom: chkslotcon is not representing the correct connection information. Conditions: This occurred right after a switchcc on the shelf. Workaround: none

Bug ID	Description
CSCdu54413	Symptom: LAN IP change is not reflected on NW Browser Condition: When the LAN IP is changed Workaround: None.
CSCdu59142	Symptom: APS Line does not switch to PROT line after removing the back card on which working line resides. Also the working line is shows as OK. Conditions: Remove the PXM back card on which working (active) line resides. Workaround: Before the back card is removed, following things need to be done. 1. PXM directly associated (same slot as the back card) with the back card which is to be removed, should be in STANDBY state. i.e. if back card of slot 7 is to be removed, then PXM in slot 7 should be in STANDBY state. This can be achieved with a switchcc. 2. All the APS line should be switched to the back card which is directly associate with the ACTIVE PXM. (i.e. back card in the same slot as the front card of Active PXM). This can be done using a command switchapsln
CSCdu61217	Symptom: dspcds and dspcd shows card in major alarm because of line failure. dsplns shows everything is fine. Conditions: unknown Workaround: None
CSCdu63700	Symptom: MGX1 connected to MGX2 with OC12 1+1APS. When the WLine failed, MGX2 switched to PLine; but MGX1 stayed at WLine although it detected WLine in Alarm. Conditions: Connected MGX1 to MGX2 as feeder via OC12 1+1APS, WLine as active line. Removed the WLine Backcard from MGX2 side, WLine in SF, PLine in OK; MGX1 WLine in ALM, PLine in P_D states, with TxK1=C0, RxK1=C1. Workaround: Manual Switchaps to PLine before removing the WLine Backcard.

Bug ID	Description
CSCdu66767	Symptom: pxmCurClkSourceTrap is not generated properly. Conditions: When there is a clock switch. Workaround: None.
CSCdu72687	Symptom: Can't change donothold from front card from CiscoView. Conditions: Always Workaround: Use CLI
CSCdu73201	Symptom: Active line switches to working. Conditions: This happens if we switchcc with Protection line as active. Workaround: None.
CSCdu76037	Symptom: Frames were dropped when traffic was pumped at full T3 on both the ports of the FRSM-2T3 card. Conditions: When traffic was being pumped at 70% of T3 rate on both the ports there were frame drops. Workaround: No workaround.
CSCdu77558	Symptom: On a fully loaded shelf (with 12 RPMs), if multiple redundant groups, if multiple resetcds followed by switchcc causes shelf to reset. Condition: On a fully loaded shelf (with 12 RPMs), if multiple redundant groups, if multiple resetcds followed by switchcc causes shelf to reset. Workaround: Wait for at least 5-10 mins before doing the switchcc.

Bug ID	Description
CSCdu86525	Symptom: PXM1 resets due to watchdog timeout reset. Conditions: Unknown. Workaround: None. This problem is a pure software issue and there is no need to replace hardware. PXM will reset due to watchdog timeout and come up to active/standby state. Further Problem Description: Software exceptions due to unknown reason. From the current exception logs in the core, it is not sufficient to decide the root cause of the first exception. However, the events after the first exception showed some flaws in design.
CSCdv17041	Symptom: Command line interface on the AUSM is not standard and the format is different when entering VPI in different parameters. Conditions: Trying to add a VPC connection Workaround: None
CSCdv19158	Symptom: PXM Bootcode burn failed on the standby card. MGX nodes were failing pxm bootcode burns, in every instance the log has a message to the effect that “DB table is full all 20 entries used. Conditions: Unknown. However, user should avoid using Ctrl-C during saveallcnf/savesmcnf. Workaround: Patch Memory and the bootcode upgrade went fine. Further Problem Description: During the upgrade if the bootcode upgrade doesn't go, the Log needs to be checked for error messages of database table full and software errors.
CSCdv28342	Symptom: When you add an incomplete conn. from FRSM to PXM with vci = 0, it's shown as ok Conditions: vci = 0 Workaround: Use non-zero vci.

Bug ID	Description
CSCdv37361	Symptom: addcon/dspchans/dspchan does not display connection service as vbr-nrt. Conditions: Always Workaround: None
CSCdv40282	Symptom: If multiple SMs which are a part of different redundancy groups are reset at the same time and a PXM switch-over happens at the same time, some SMs go into a mismatch/failed state. Conditions: Multiple card failure with PXM Workaround: Reset the card which is stuck in the Failed/mismatch state
CSCdv43341	Symptom: After pulling out the standby PXM1 card, the yellow alarm on the active card disappears after a while. Conditions: Removing the standby PXM1. Workaround: None.
CSCdv44392	Symptom: dsplog on the node does not report recovery of the primary clock source after failure. The dspcurclk/dspclkinfo shows the proper clock source. Conditions: If the primary clock source is on an APS trunk and changes to and from that clock source occur. Workaround: Always check the dspcurclk command output for the correct information on currently active clock sources.
CSCdv45747	Symptom: More cells are lost when the secondary SM of a redundant set is active on PXM switchover. Conditions: When the secondary ausm is active and a pxm switchover takes place. Workaround: None known

Bug ID	Description
CSCdv49211	Symptom: It has been seen that the CPE device is sending traffic to the FRSM-HS1/B but the FRSM-HS1/B is not receiving any traffic on the port. The physical line is clear of alarms as seen in dspalms however, the port sees 0 traffic coming in, as seen in dspportcnt <cmdArg>port_num<noCmdArg>. Conditions: This was seen with FRSM-HS1/B firmware 10.0.22 and PXM firmware 1.1.34. Workaround: Execute the commands “addlnloop <line#>” and “dellnloop <line#>” on the line which has failed port.
CSCdv53678	Symptom: switchapsln clear command sometimes causes aps line switch over from active working line to the protection line. Conditions: Under a specific sequence of actions and conditions. Initial conditions: MGX 7.1 and BPX 1.1 fibers active, all fibers ok, no last user APS request shown, MGX card 7 active sequence of actions: a. Disconnect MGX to BPX 7.1 fiber (just one fiber) b. “switchapsln s 8" on MGX c. Remove MGX slot 7 back card d. “switchcc” on MGX e. Remove MGX slot 7 front card f. Insert MGX slot 7 back card with the previously disconnected fiber reconnected g. Insert MGX slot 7 front card h. “switchcc” on MGX i. “switchapsln s 7" on MGX Workaround: None
CSCdv54796	Symptom: The downloaded information from the switch shows the backcard as removed even if it is not present. Conditions: When the back card of an ausm-8t1e1 is removed. Workaround: None known

Bug ID	Description
CSCdv55459	Symptom: FRSM card loses configuration after power black out. Conditions: Total power failure on the MGX node. PXM was running 1.1.31 Workaround: 'clrsmcnf' and reload configuration.
CSCdv56773	Symptom: Command line is hung issuing display requests. Customer experienced hung Command Line Interface and could not issue any normal display requests. Commands such as “dspcds”, “dspcons” or “dspalms” would cause the CLI to hang. Conditions: Conditions with the customer's node and network were deemed as normal. System idle was at 95%. Workaround: Switchcc was found to be one workaround for this problem.
CSCdv62206	Symptom: stdby pxm reset due to software error Conditions: Node in alarms state, while script is running to monitor the node, and possible provisioning during this event. Workaround: WDT cleared the softerror, upon completion of reset from shell.
CSCdv69491	Symptom: When two lines on the same AUSM card are connected to each other with only one line enabled, the other line will be in alarm. But if you reset the card, alarm goes away. Conditions: Lines on the same card Workaround: None
CSCdv79466	Symptom: Sometimes oldiag fails on standby PXM Conditions: oldiag fails attempting ipc with the standby PXM. Node is placed in major alarm due to the standby PXM oldiag failure. Workaround: none

Bug ID	Description
CSCdv84678	Symptom: RPM card got stuck in boot state. Conditions: Have bad IOS image on the PXM disk. Workaround: Download the IOS image again.
CSCdv84864	Symptom: When adding a connection, get error message saying 'dlci already in use' Conditions: unknown. Workaround: Need to manually correct the situation.
CSCdv85890	Symptom: addcon/dspchans/dspchan (number) does not display connection service as vbr-nrt. Conditions: Whenever addcon/dspchans/dspchan is executed. Workaround: None.
CSCdv86457	Symptom: PXM1 counter is not accurate when packet size is 128. Conditions: Whenever packet size of 128 is used for sending traffic between PE to PE, pxm counters in dspchancnt shows wrong value. Workaround: None.
CSCdv88025	Symptom: Improper access level control for some command Conditions: Login through console port and execute some special command Workaround: None
CSCdv88082	Symptom: Unable to pump traffic at full port speed. Causes discards. Conditions: Traffic at full port speed. Workaround: None at present.

Bug ID	Description
CSCdv89819	Symptom: An MGX1 feeder node was unreachable from the BPX node due to a Comm failure. Conditions: lmi task failure Workaround: Switchcc
CSCdv90088	Symptom: POPEYE with PXM1 went logically/LMI unreachable. Connections were failed, All SMS and standby pxm showed failed to active PXM. Could Console into standby PXM and it showed “standby” Conditions: Normal Workaround: Reset of active PXM caused switchover to the standby pxm. Node returned to normal after that.
CSCdv90213	Symptom: Watch dog timeout on active PXM switched over to standby and core was dumped. Conditions: Normal operation Workaround: None
CSCdw00670	Symptom: Interface and connection provisioning failed due to IPC timeouts. But CC to RPM, IPC polling and heartbeat works fine. RPM card looks healthy in terms of CPU and memory. Conditions: The events and commands which lead to this situation are unknown at this point in time. Workaround: Controller card switchCC cleared this issue. Further Problem Description: If this problem happens again, please contact the TAC and follow the instructions given by TAC to capture more information.

Bug ID	Description
CSCdw00713	Symptom: Major Communication Failure on trunk between 8250 and IGX. Conditions: Trunk between 8250 and IGX is in Major Communication Failure causing the feeder to be unreachable. Workaround: Under shellConn invoke init_bbif_cnf(), to reprogram QE1, so that QE1 will stop discarding cells. However this is a partial fix. Under investigation.
CSCdw01992	Symptom: PXM spontaneously switched over. The following error messages scrolled across the screen ################################## ###### SYSTEM ERROR 20182 -426933 2025115134 50338856 -2029099400 ################################## vsim fatal: can't get message buffer Conditions: flapping DS3 lines on SM/SRM, which can cause buffer depletion on controller card. Workaround: clear the alarm or add loopback on the line.
CSCdw02483	Symptom: Couldn't add maximum number of connections on FRSM-HS2/B card under certain conditions. Conditions: The complete steps leading to this problem are still unknown. clrsmcnf was executed at some point. Workaround: Under investigation.
CSCdw03223	Symptom: Primary card resets twice during upgrade of FRSM-VHS Conditions: Have some 500 to 1000 connections on the SM. With 10.0.15 running on 2CT3 pair which are in hotstandby, download the 10.2.01 version of VHS firmware (from the 1.2.01 bundle). Now reset the standby card. The standby comes back up with the new firmware. Also, the redundancy pair will now not be in Hotstandby. Do a softswitch from pri to sec. When the primary resets and comes back to standby, it goes through the reset twice before settling down at Standby state & becoming Hotstandby. Workaround: None known.

Bug ID	Description
CSCdw03737	Symptom: The connection from FRSM-2CT3 to FRSM-8T1 through BPX cloud, does not pass traffic. tstcon on the connection fails though the connection is state reported is OK. dspsarcnt shows Rx=0. Conditions: Unknown Workaround: Delete and add back the connection.
CSCdw05153	Symptom: statistics on MGX goes to BadFileList since they are invalid files. Conditions: Collect PXM stats on MGX node which is connected to MGX 2.0 node. Probability of the hitting the problem increases if there are more number of connections. Workaround: None
CSCdw09234	Symptom: The lines of Service Module go into alarm Conditions: Lines should be in bulk mode and the front card of Active SRM should be pulled out Workaround: If you need to pull out the Active SRM front card, perform a switchcc first.
CSCdw10343	Symptom: There is no cli to display and clear the slip counters Conditions: There is no cli Workaround: None
CSCdw20217	Symptom: The FRSM-HS1/B module for the MGX8220/8230/8250 fails. In dspcds the FRSM shows as Failed. Conditions: This has been observed in PXM version 1.1.34, FRSM firmware 10.0.22. Workaround: No known workaround. Resetting the card via resetcd <CmdArg>slot<noCmdArg>.

Bug ID	Description
CSCdw24938	Symptom: PXM switchover due to software error reset Conditions: Happened spontaneously Workaround: None as the new PXM should take over if there is core card redundancy Further Problem Description: None. We need to review the core dump to find out what caused the software error reset.
CSCdw28812	Symptom: No “card removed” trap from node when PXM is removed. Conditions: When the active PXM is pulled out Workaround: None.
CSCdw30961	Symptom: Both Primary and secondary redundant pair become active. Condition: Reset active card twice and do a switchcc Workaround: Do switchcc only when primary or secondary is in active state.
CSCdw33684	Symptom: A route disappears on the shelf (routeShow command shows the routes) Conditions: It disappears when the user tries to ping the route from a workstation. Work Around: Add back the route using the routeAdd command.
CSCdw40562	Symptom: Customer experiencing intermittent PXM Switchover with software Error reset message and Core Dumps. Conditions: Unknown. The switchover happens spontaneously. Workaround: None

Bug ID	Description
CSCdw40834	Symptom: SNMP traps are sent from the PXM to management station indicating a DS3 alarm on the SRM of the MGX8250/8850. When checking via CLI command dspalmcnt there are no alarm counters incremented. In the PXM log, viewed via dsplog there is an entry similar to: 01/02/2002-22:00:15 08 tSnmpFeTx VSI-4-VSIS_TRAP 01475 VSIS_TRAP: DS3 Minor Alarm hence not reporting 805371649 Conditions: This has been seen on MGX version 1.1.33, when using the DS3 lines on the SRM. Workaround: None known at this time.
CSCdw42720	Symptom: Repeated add/Del channels on cesm-8t1e1 causes card to reset. Conditions: Whenever you add and delete channels on cesm-8t1e1 no of times then card resets. Workaround: None.
CSCdw45527	Symptom: TFTP get fails for a saved configuration file on an MGX8250 Conditions: Unknown Workaround: None Further Problem Description: Further investigation shows that although the file is there, the log shows errors during save operation, no errors logged in the dsperr output. Savesmcnf was also performed and again although the files are there, dsperr this time produces errors.
CSCdw49130	Symptom: Cannot execute cnfslftst command on standby FRSM 4T1 card even though cnfslftststbysm can be executed on the ASC. Conditions: Happens under all conditions. Workaround: None

Bug ID	Description
CSCdw51070	Symptom: dspdiagresults show that the CBC access test fails multiple times. Conditions: Happens spontaneously Workaround: None Further Problem Description: The PXM was reset and the CBC error shown in the cbcDspCounts command disappeared but the CBC access test still fails.
CSCdw51344	Symptom: FRSM reports out of buffers condition while adding connections Conditions: It happens for these firmware versions intermittently while using scripts to add connections. MGX:1.2.01 FRSM:10.0.20 Workaround: None
CSCdw51765	Symptom: Error messages on screen while try to enable stats Conditions: Happens intermittently. Workaround: None
CSCdw52453	Symptom: No trap is generated for APS directional mismatch. Conditions: Add aps line at both local and remote end. Configure APS so that it has directional mismatch. Now there the trap 50614 is not generated. Configure APS so that there is no directional mismatch. Now the trap 50615 is not generated. Workaround: None.
CSCdw62653	Symptoms: FRSM introduces 25% delay spikes. Conditions: Sending frames using channelized T1 FRSM interface. Workaround: None

Bug ID	Description
CSCdw62933	Symptom: switchcc on pxm, bxm with uni-directional, non-revertive aps fails Conditions: Happens when aps is configured as unidirectional and nonrevertive Workaround: Unknown at present Further Problem Description: PXM active takes over as standby and on the BXM the protection line takes over, which is not the expected behavior. The switchcc under the above mentioned conditions should be blocked.
CSCdw63605	Symptom: Total input traffic on sub-switch interfaces does not equal input traffic on main switch interface. Conditions: Trunk configured on RPM to 30Mbps, this problem appears when traffic is above 12 Mbps. Workaround: none
CSCdw65157	Symptom: Channel state inconsistency between CPE and the FRSM card Conditions: SIW(service interworking) connection between BXP and FRSM on MGX8220 feeder. RDI alarm generated in ATM network. Traffic load is none or normal. Workaround: None Further Problem Description: The RDI (Remote defective identifier) coming from the ATM network by a Service Interworking connection, is not correctly mapped into a-bit on the Frame Relay side(AXIS - FRSM card) of the same connection. Therefore, the Frame Relay CPE won't be able to detect this far end failure.
CSCdw66303	Symptom: MGX 1 stops providing backplane clock to the SM and this causes CESM card to rebuild itself Conditions: Happens when the UI-S3 backcard is pulled out with the current clock configured as external Workaround: Perform a switchcc and the make the current PXM standby before pulling out the UI-S3 backcard.

Bug ID	Description
CSCdw69926	Symptom: MGX1 does not latch onto the inband clock source after switchcc Conditions: PXM should have a UI-S3 backcard and the current clock source is inband from the feeder trunk Workaround: Manually using the command cnfclksrc configure the clock source back to inband.
CSCdw69982	Symptom: FRSM-8E1 keeps resetting. Condition: When more than 189 ports are enabled on the card and all port and channel statistics are enabled with the peak enabled flag set. Workaround: Enable fewer channel/port stats for the card.
CSCdw70376	Symptom: tftp of the config file by the CWM from the RPM-PR card takes long time. Conditions: Happens under all conditions. Workaround: None
CSCdw70530	Symptom: PXM does not display all 16k connections as part of the dspcons command. Conditions: Unknown. The problem is a one time occurrence. Workaround: Under investigation.
CSCdw70652	Symptom: When new connections are added on a Channelized E1 line/port, bit Errors will be logged on a BERT Tester connecting to the same line on a DAX connection. Conditions: Adding/deleting connections on the line will cause the problem regardless if it has been added via CWM or CLI. Workaround: None

Bug ID	Description
CSCdw70810	Symptom: Cannot perform SM upgrade while the secondary PXM is in Hold state. Conditions: Happens under all conditions. Workaround: Finish the PXM upgrade before performing the SM upgrade.
CSCdw70847	Symptom: Failed to perform switchcc on a 8250 node due to core card unavailability. Conditions: This is a one time occurrence Both the PXM cards shows as Active and Standby respectively. According to developer SCM queue overflow occurred. Workaround: None
CSCdw72599	Symptom: SES errors in the dspalmcnt does not show the correct historical information on the HEC errors received by the AUSM card Conditions: Happens under all conditions. Workaround: None Further Problem Description: The problem of loss of cell delineation is visible only if it is a current event and not appearing in any historical counters.
CSCdw76276	Symptom: Could not cc to the RPM card while upgrading from 1.1.32 to 1.1.41 Conditions: PXM 1.1.32, 1.2.01 RPM:12.2 4(T)3 Workaround: Do not use extended pings while upgrading

Compatibility Notes

MGX 8230/8250/8850 Software Interoperability with Other Products

Platform Software:	PXM 1.2.01
Compatible BPX Switch Software:	In 9.2 Baseline, Switch Software 9.2.30 and higher In 9.3 Baseline, 9.3.36 and higher
Compatible MGX Release 2 Switch Software:	MGX Rel. 2 Software 2.0.15 and 2.1.75
Compatible VISM Software:	VISM Release 2.1(1)
Network Management Software:	10.5.10 Patch 1

Boot File Names and Sizes

The following table displays the boot file names and sizes for this release.

Table 4 Boot File Names and Size

File Name	File Size (in bytes)
ausm_8t1e1_AU8_BT_1.0.02.fw	377836
cesm_8t1e1_CE8_BT_1.0.02.fw	264592
cesm_t3e3_CE8_BT_1.0.02.fw	303936
frsm_8t1e1_FR8_BT_1.0.02.fw	297988
frsm_hs1_HS1_BT_1.0.02.fw	293052
frsm_vhs_VHS_BT_1.0.04.fw	468228
pxm_bkup_1.2.01.fw	1341176
rpm-boot-mz.122-4.T3	2622352

MGX 8250/8850 Firmware Compatibility

The following firmware compatibility matrix is for this release.

Table 5 MGX 8250 Switch and MGX 8850 Switch Firmware Compatibility Matrix

PCB Description	CW2000 Name	Latest F/W	File Name	File Size (in bytes)
PXM1	PXM-1	1.2.01	pxm_1.2.01.fw	2592264
PXM1-2-T3E3	PXM1-2T3E3	1.2.01	pxm_1.2.01.fw	2592264

Table 5 MGX 8250 Switch and MGX 8850 Switch Firmware Compatibility Matrix

PCB Description	CW2000 Name	Latest F/W	File Name	File Size (in bytes)
PXM1-4-155	PXM1-4OC3	1.2.01	pxm_1.2.01.fw	2592264
PXM1-1-622	PXM1-OC12	1.2.01	pxm_1.2.01.fw	2592264
MGX-SRM-3T3/B	SRM-3T3	—	—	—
MGX-SRM-3T3/C	SRM-3T3	—	—	—
MGX-SRM-E	SRM-E	—	—	—
MGX-AUSM-8E1/B	AUSMB-8E1	10.2.01	ausm_8t1e1_10.2.01.fw	1310736
MGX-AUSM-8T1/B	AUSMB-8T1	10.2.01	ausm_8t1e1_10.2.01.fw	1310736
AX-CESM-8E1	CESM-8E1	10.2.00	cesm_8t1e1_10.2.00.fw	700496
AX-CESM-8T1	CESM-8T1	10.2.00	cesm_8t1e1_10.2.00.fw	700496
MGX-CESM-8T1/B	CESM-8T1	10.2.00	cesm_8t1e1_10.2.00.fw	700496
MGX-CESM-T3	CESM-T3	10.2.00	cesm_t3e3_10.2.00.fw	607792
MGX-CESM-E3	CESM-E3	10.2.00	cesm_t3e3_10.2.00.fw	607792
AX-FRSM-8E1/E1-C	FRSM-8E1	10.2.01	frsm_8t1e1_10.2.01.fw	838716
AX-FRSM-8T1/T1-C	FRSM-8T1	10.2.01	frsm_8t1e1_10.2.01.fw	838716
MGX-FRSM-HS2/B	FRSM-HS2/B	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-HS2	FRSM-HS2	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-2CT3	FRSM-2CT3	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-2T3E3	FRSM-2T3	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-2T3E3	FRSM-2E3	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-HS1/B	FRSM-HS1/B	10.2.01	frsm_hs1_10.2.01.fw	773524
MGX-RPM-128M/B	RPM	12.2(4)T3	rpm-js-mz.122-4.T3 (IOS)	8588036
MGX-RPM-PR	RPM	12.2(4)T3	rpm-js-mz.122-4.T3 (IOS)	8588036

MGX 8230 Firmware Compatibility

The following firmware compatibility matrix is for this release.

Table 6 MGX 8230 Firmware Compatibility Matrix

PCB Description	CW2000 Name	Latest F/W	File Name	File Size (in bytes)
PXM1	PXM-1	1.2.01	pxm_sc_1.2.01.fw	2588124
PXM1-2-T3E3	PXM1-2T3E3	1.2.01	pxm_sc_1.2.01.fw	2588124
PXM1-4-155	PXM1-4OC3	1.2.01	pxm_sc_1.2.01.fw	2588124
PXM1-1-622	PXM1-OC12	1.2.01	pxm_sc_1.2.01.fw	2588124
MGX-SRM-3T3/B	SRM-3T3	—	—	—
MGX-SRM-3T3/C	SRM-3T3	—	—	—

Table 6 MGX 8230 Firmware Compatibility Matrix (continued)

PCB Description	CW2000 Name	Latest F/W	File Name	File Size (in bytes)
MGX-SRM-E	SRM-E	—	—	—
MGX-AUSM-8E1/B	AUSMB-8E1	10.2.01	ausm_8t1e1_10.2.01.fw	1310736
MGX-AUSM-8T1/B	AUSMB-8T1	10.2.01	ausm_8t1e1_10.2.01.fw	1310736
AX-CESM-8E1	CESM-8E1	10.2.00	cesm_8t1e1_10.2.00.fw	700496
AX-CESM-8T1	CESM-8T1	10.2.00	cesm_8t1e1_10.2.00.fw	700496
MGX-CESM-8T1/B	CESM-8T1	10.2.00	cesm_8t1e1_10.2.00.fw	700496
MGX-CESM-T3	CESM-T3	10.2.00	cesm_t3e3_10.2.00.fw	607792
MGX-CESM-E3	CESM-E3	10.2.00	cesm_t3e3_10.2.00.fw	607792
AX-FRSM-8E1/E1-C	FRSM-8E1	10.2.01	frsm_8t1e1_10.2.01.fw	838716
AX-FRSM-8T1/T1-C	FRSM-8T1	10.2.01	frsm_8t1e1_10.2.01.fw	838716
MGX-FRSM-HS2/B	FRSM-HS2/B	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-HS2	FRSM-HS2	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-2CT3	FRSM-2CT3	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-2T3E3	FRSM-2T3	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-2T3E3	FRSM-2E3	10.2.01	frsm_vhs_10.2.01.fw	987332
MGX-FRSM-HS1/B	FRSM-HS1/B	10.2.01	frsm_hs1_10.2.01.fw	773524
MGX-RPM-128M/B	RPM	12.2(4)T3	rpm-js-mz.122-4.T3 (IOS)	8588036
MGX-RPM-PR	RPM	12.2(4)T3	rpm-js-mz.122-4.T3 (IOS)	8588036

Comparison Matrix

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

Table 7 MGX 8220, MGX 8230, MGX 8250, and MGX 8850 Comparison Matrix

Feature	MGX 8220	MGX 8230	MGX 8250	MGX 8850, PXM1
Slot Capacity				
Total Number of Slots	16 single-height	14 single-height/ 7 double-height, or combination	32 single-height/ 16 double-height, or combination	32 single-height/ 16 double-height, or combination
Slots for Processor cards (PXM1s)	2 single-height (plus 2 slots reserved for BNM)	2 double-height	2 double-height	2 double-height
Slots for Service Modules (SMs)	10 single-height	8 single-height/ 4 double-height or combination	24 single-height/ 12 double-height, or combination	24 single-height/ 12 double-height combination

Table 7 MGX 8220, MGX 8230, MGX 8250, and MGX 8850 Comparison Matrix (continued)

Feature	MGX 8220	MGX 8230	MGX 8250	MGX 8850, PXM1
Slots for SRM Cards (Service Resource Modules)	2 single-height	2 single-height	4 single-height	4 single-height
Physical Attributes	**8220**	**8230**	**8250**	**8850**
Height (in inches)	8.75	12.25	26.25 to 29.75	26.25 to 29.75
Width (in inches)	17.45	17.72	17.72	17.72
Depth	20.0	23.5	21.5	21.5
Services	**8220**	**8230**	**8250**	**8850**
MPLS (IP +ATM)	No	Yes	Yes	Yes
Voice	No	Yes	Yes	Yes
ATM	Yes	Yes	Yes	Yes
Frame Relay	Yes	Yes	Yes	Yes
Frame Relay-to-ATM network interworking	Yes	Yes	Yes	Yes
Frame Relay-to-ATM service interworking	Yes	Yes	Yes	Yes
Circuit Emulation	Yes	Yes	Yes	Yes
Local Switching	**8220**	**8230**	**8250**	**8850**
	No	Yes	Yes	Yes
Feeder	**8220**	**8230**	**8250**	**8850**
Feeder to BPX 8600	Yes	Yes	Yes	Yes
Feeder to MGX 8850 PXM-45	No	Yes	Yes	Yes
Feeder to IGX	No	Yes	Yes	Yes
Automatic Protection Switching (APS 1+1)	**8220**	**8230**	**8250**	**8850**
APS on PXM-1	No	Yes	Yes	Yes
APS on SRM-3T3/B	No	Yes	Yes	Yes
APS on SRM-3T3/C	No	Yes	Yes	Yes
APS on SRM-E	No	Yes	Yes	Yes
Switching Capacity	**8220**	**8230**	**8250**	**8850**
	320 Mbps	1.2 Gbps	1.2 Gbps	1.2 Gbps

Table 7 MGX 8220, MGX 8230, MGX 8250, and MGX 8850 Comparison Matrix (continued)

Feature	MGX 8220	MGX 8230	MGX 8250	MGX 8850, PXM1
Trunk/Port Interfaces	**8220**	**8230**	**8250**	**8850**
T3/E3	1	2 (one feeder trunk)	2 (one feeder trunk)	2
OC-3c/STM-1	1	4 (one feeder trunk)	4 (one feeder trunk)	4
OC-12c/STM-4	No	1	1	1
OC-48c/STM-16	No	No	No	No
n x T1/E1	Yes	Yes	Yes	Yes
Front Cards	**8220**	**8230**	**8250**	**8850**
AX-FRSM-8T1	Yes	Yes	Yes	Yes
AX-FRSM-8E1	Yes	Yes	Yes	Yes
AX-FRSM-8T1-C	Yes	Yes	Yes	Yes
AX-FRSM-8E1-C	Yes	Yes	Yes	Yes
MGX-FRSM-HS2	Yes	Yes	Yes	Yes
MGX-FRSM-HS2/B	No	Yes	Yes	Yes
AX-FRSM-HS1	Yes	No	No	No
MGX-FRSM-HS1/B	Yes	Yes	Yes	Yes
MGX-FRSM-2T3/E3	No	Yes	Yes	Yes
MGX-FRSM-2CT3	No	Yes	Yes	Yes
AX-AUSM-TE1	Yes	No	No	No
MGX-AUSM-8T1/B	Yes	Yes	Yes	Yes
AX-AUSM-8E1	Yes	No	No	No
MGX-AUSM-8E1/B	Yes	Yes	Yes	Yes
AX-IMATM-8T1/B	Yes	No	No	No
AX-IMATM-8E1/B	Yes	No	No	No
AX-CESM-8T1	Yes	Yes	Yes	Yes
AX-CESM-8E1	Yes	Yes	Yes	Yes
MGX-CESM-T3E3	No	Yes	Yes	Yes
MGX-CESM-8T1/B	Yes	Yes	Yes	Yes
AX-SRM-T1E1/B	Yes	No	No	No
AX-SRM-3T3	Yes	No	No	No
MGX-SRM-3T3/B	Yes	Yes	Yes	Yes
MGX-SRM-3T3/C	Yes	Yes	Yes	Yes
MGX-SRM-E	No	Yes	Yes	Yes
MGX-VISM-8T1	No	Yes	Yes	Yes
MGX-VISM-8E1	No	Yes	Yes	Yes

Table 7 MGX 8220, MGX 8230, MGX 8250, and MGX 8850 Comparison Matrix (continued)

Feature	MGX 8220	MGX 8230	MGX 8250	MGX 8850, PXM1
MGX-RPM-128/B	No	Yes	Yes	Yes
MGX-RPM-PR	No	Yes	Yes	Yes
PXM1	No	Yes	Yes	Yes
PXM1-2T3E3	No	Yes	Yes	Yes
PXM1-4-155	No	Yes	Yes	Yes
PXM1-1-622	No	Yes	Yes	Yes

Back Cards	8220	8230	8250	8850
AX-SMB-8E1	Yes	Yes	Yes	Yes
AX-RJ48-8E1	Yes	Yes	Yes	Yes
AX-RJ48-8T1	Yes	Yes	Yes	Yes
AX-R-SMB-8E1	Yes	Yes	Yes	Yes
AX-R-RJ48-8E1	Yes	Yes	Yes	Yes
AX-R-RJ48-8T1	Yes	Yes	Yes	Yes
MGX-SCSI2-2HSSI/B	Yes	Yes	Yes	Yes
MGX-12IN1-4S	Yes	Yes	Yes	Yes
MGX-12IN1-8S	No	Yes	Yes	Yes
MGX-BNC-2T3	No	Yes	Yes	Yes
MGX-BNC-2E3	No	Yes	Yes	Yes
MGX-BNC-2E3A	No	Yes	Yes	Yes
MGX-BNC-3T3-M	No	Yes	Yes	Yes
PXM1-UI	No	Yes	Yes	Yes
PXM-UI-S3	No	Yes	Yes	Yes
MGX-MMF-4-155/B	No	Yes	Yes	Yes
OC3/STM1	No	Yes	Yes	Yes
MGX-SMFIR-4-155/B	No	Yes	Yes	Yes
MGX-SMFLR-4-155/B	No	Yes	Yes	Yes
MGX-SMFIR-1-622/B	No	Yes	Yes	Yes
MGX-SMFLR-1-622/B	No	Yes	Yes	Yes
MGX-RJ45-FE	No	Yes	Yes	Yes
MGX-MMF-FE	No	Yes	Yes	Yes
MGX-RJ45-4E	No	Yes	Yes	Yes

RPM Compatibility Matrix

MGX SW version	1.1.32	1.1.34	1.1.40	1.2.00	1.2.01
IOS Version	12.1(5.3)T_XT	12.2(2)T2	12.2(4)T	12.2(4)T1	12.2(4)T3
CWM	10.4.01	10.4.01 Patch 1	10.5	10.5.10	10.5.10 Patch 1

MGX 8850, MGX 8250, and MGX 8230 Release 1.2.01 Hardware

Table 8 shows the front card and back card compatibility for the hardware supported in this release. The table lists the card model/ name, part numbers, the minimum version and the minimum revisions of each card supported in Release 1.2.01. Note that there may be more than one 800 level part numbers for the same front cards. The minimum version is identified by the last 2 digits of the 800 level numbers.

Table 8 Hardware Compatibility Matrix

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
PXM1	800-05084-02	A0	PXM-UI	800-03688-01	A0
	800-05760-01	A0	PXM-UI-S3	800-05787-01	A0
	800-07888-01				
PXM1-4-155	800-05086-02	A0	PXM-UI	800-03688-01	A0
	800-05762-01	A0	PXM-UI-S3	800-05787-01	A0
	800-06229-02	A0	MGX-MMF-4-155/B	800-05053-01	A0
			MGX-SMFIR-4-155/B	800-05351-01	A0
			MGX-SMFLR-4-155/B	800-05352-01	A0
PXM1-1-622	800-05085-02	A0	PXM-UI	800-03688-01	A0
	800-05763-01	A0	PXM-UI-S3	800-05787-01	A0
	800-06228-02	A0	MGX-SMFIR-1-622/B	800-05379-01	A0
			MGX-SMFLR-1-622/B	800-05381-01	A0
PXM1-2-T3E3	800-05087-02	A0	PXM-UI	800-03688-01	A0
	800-05602-01	A0	PXM-UI-S3	800-05787-01	A0
	800-06230-02	A0	MGX-BNC-2E3	800-04056-02	A0
			MGX-BNC-2E3A	800-04743-02	A0
			MGX-BNC-2T3	800-04057-02	A0
MGX-SRM-3T3/B	800-04092-01	**E0**	MGX-BNC-3T3-M	800-03148-02	A0
MGX-SRM-3T3/C	800-05648-01	A0	MGX-BNC-3T3-M	800-03148-02	A0
MGX-SRME	800-14224-02	A0	MGX-SMFIR-1-155	800-14460-02	A0
			MGX-STM1-EL-1	800-14479-02	A0

Table 8 Hardware Compatibility Matrix

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
MGX-AUSM-8E1/B	800-04810-01	A0	AX-SMB-8E1	800-02287-01	A0
			AX-R-SMB-8E1	800-02410-01	A0
			AX-RJ48-8E1	800-02408-01	A0
			AX-R-RJ48-8E1	800-02409-01	A0
			MGX-RJ48-8E1	800-19310-01	A0
MGX-AUSM-8T1/B	800-04809-01	A0	AX-RJ48-8T1	800-02286-01	A0
			AX-R-RJ48-8T1	800-02288-01	A0
AX-CESM-8E1	800-02751-02	A0	AX-SMB-8E1	800-02287-01	A0
			AX-R-SMB-8E1	800-02410-01	A0
			AX-RJ48-8E1	800-02408-01	A0
			AX-R-RJ48-8E1	800-02409-01	A0
			MGX-RJ48-8E1	800-19310-01	A0
AX-CESM-8T1	800-02750-02	A0	AX-RJ48-8T1	800-02286-01	A0
		A0	AX-R-RJ48-8T1	800-02288-01	A0
MGX-CESM-8T1/B	800-08613-02	A0	AX-RJ48-8T1	800-02286-01	A0
		A0	AX-R-RJ48-8T1	800-02288-01	A0
MGX-CESM-T3E3	800-03864-02	A0	MGX-BNC-2E3	800-04056-02	A0
			MGX-BNC-2E3A	800-04743-02	A0
			MGX-BNC-2T3	800-04057-02	A0
AX-FRSM-8E1	800-02438-04	A0	AX-SMB-8E1	800-02287-01	A0
			AX-R-SMB-8E1	800-02410-01	A0
			AX-RJ48-8E1	800-02408-01	A0
			AX-R-RJ48-8E1	800-02409-01	A0
			MGX-RJ48-8E1	800-19310-01	A0
AX-FRSM-8E1-C	800-02462-04	A0	AX-SMB-8E1	800-02287-01	A0
			AX-R-SMB-8E1	800-02410-01	A0
			AX-RJ48-8E1	800-02408-01	A0
			AX-R-RJ48-8E1	800-02409-01	A0
			MGX-RJ48-8E1	800-19310-01	A0
AX-FRSM-8T1	800-02437-04	A0	AX-RJ48-8T1	800-02286-01	A0
			AX-R-RJ48-8T1	800-02288-01	A0
AX-FRSM-8T1-C	800-02461-04	A0	AX-RJ48-8T1	800-02286-01	A0
			AX-R-RJ48-8T1	800-02288-01	A0
MGX-FRSM-2CT3	800-02910-04	A0	MGX-BNC-2T3	800-04057-02	A0
	800-06335-01	A0			

Table 8 Hardware Compatibility Matrix

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
MGX-FRSM-2T3E3	800-02911-03	A0	MGX-BNC-2E3	800-04056-02	A0
			MGX-BNC-2E3A	800-04743-02	A0
			MGX-BNC-2T3	800-04057-02	A0
MGX-FRSM-HS1/B	800-05129-01	A0	MGX-12IN1-4S	800-04981-01	A0
			MGX-SCSI2-2HSSI/B	800-05463-02 800-05501-01	A0 A0
MGX-FRSM-HS2	800-02909-03	A0	MGX-SCSI2-2HSSI/B	800-05463-02 800-05501-01	A0 A0
MGX-FRSM-HS2/B	800-17066-01	A0	MGX-12IN1-8S	800-18302-01	A0
MGX-RPM-128M/B	800-05743-01	A0	MGX-RJ45-FE	800-02735-02	A0
			MGX-MMF-FE	800-03202-02	A0
			MGX-RJ45-4E	800-02737-02	A0
			MGX-MMF-FDDI	800-02857-01	A0
			MGX-MMF-FDDI/FD	800-03820-01	A0
			MGX-SMF-FDDI	800-02736-01	A0
			MGX-SMF-FDDI/FD	800-03822-01	A0
MGX-RPM-PR-256	800-07178-02	A0	MGX-RJ45-FE	800-02735-02	A0
			MGX-MMF-FE	800-03202-02	A0
			MGX-RJ45-4E/B	800-12134-01	A0
MGX-RPM-PR-512	800-07656-02	A0	MGX-RJ45-FE	800-02735-02	A0
			MGX-MMF-FE	800-03202-02	A0
			MGX-RJ45-4E/B	800-12134-01	A0
MGX-VISM-8E1	800-04398-01	A0	AX-SMB-8E1	800-02287-01	A0
			AX-R-SMB-8E1	800-02410-01	A0
			AX-RJ48-8E1	800-02408-01	A0
			AX-R-RJ48-8E1	800-02409-01	A0
			MGX-RJ48-8E1	800-19310-01	A0
MGX-VISM-8T1	800-04399-01	A0	AX-RJ48-8T1	800-02286-01	A0
			AX-R-RJ48-8T1	800-02288-01	A0

Special Installation and Upgrade Requirements

Existing customers should use the upgrade procedure Service Module Upgrades, page 65 to upgrade. A graceful upgrade from any release previous to the current release is supported. For new customers, the image will be pre-installed and should use the PXM installation procedure to upgrade to future maintenance releases.

A graceful upgrade from any release previous to the current release is supported, but a graceful *downgrade* is not supported. Abort or fallback to the previous release is supported at any stage during the upgrade. For abort instructions, refer to Instructions to Abort PXM Upgrade, page 61.

Special Instructions for Networks Containing FRSM 2 CT3

When upgrading from any release prior to Release 1.1.32, under certain conditions with the FRSM 2 CT3, a script must be ran in order to properly upgrade the software. The script resolves the FREEDM buffer issue described in anomaly CSCds66176; namely, that ports are lost sometimes after softswitch or resetcd. The algorithm to allocate FREEDM buffers was changed in order to fix this anomaly. Because of the algorithm change, ports might be lost when upgrading from a release (FRSM version < 10.0.22) with the older algorithm. The script identifies cards which will lose ports if the card is upgraded to Release 1.1.32 or greater.

A README file contained in the Release bundle TAR file located on CCO describes how to run the script and shows an example of the script output.

Executing the Script

Execute the script:

- On all shelves with FRSM-2CT3 prior to an upgrade from any version to Release 1.1.32 (FRSM VHS version 10.0.22) or higher.
- For upgrades from releases prior to Release 1.1.32 for the MGX 8250, MGX 8230, or MGX 8850. To fix this issue, an algorithm change was made in Release 1.1.32 (10.0.22 version of FRSM 2 CT3).

Script Functionality

The script applies the new algorithm for buffer allocation to existing ports to determine if all the ports will remain intact during the upgrade process. After application of the new algorithm, a log file is created for each FREEDM chip on all the FRSM 2CT3 cards on the shelf. The log file contains confirmation that the buffer allocations are OK or NOTOK. If the log file contains NOTOK for a card, then upgrading the card to the new release will cause the card to lose ports. Therefore, ports must be moved to another card before upgrading this card.

Upgrade Procedure for Non-Redundant PXM

Step 1 Save your current configuration.

```
saveallcnf
```

Step 2 Get the filename by listing the CNF directory:

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

```
free  space :  787787 K bytes
```

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

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

Step 4 Download the release to upgrade PXM Backup boot image to the PXM. For example:

```
unix-prompt> tftp <node_name or IP address>
tftp> bin
tftp> put pxm_bkup_<new_rel>.fw POPEYE@PXM.BT
tftp> quit
```

Step 5 Download the release to upgrade PXM runtime image to the PXM. For example:

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

Step 6 Download the `ComMat.dat` file to the `C:/FW` directory of the Active PXM. Enter the TFTP **put** command:

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

Step 7 On the PXM type the following when the transfer is done:

```
PXM.a> copy ComMat.dat /FW/ComMat.dat
```

Step 8 Enter **install bt <***new_rel***>**.

Step 9 Enter **install <***new_rel***>**. At the end of the display, enter **yes**.

```
PXM.a> install <new_rel>
redundancy is not available
the other card is not available
you are not in redundant mode,
do you want to try an ungraceful upgrade
(yes or no)?yes
```

Upgrade Procedure for Redundant PXMs

This section applies to upgrades from 1.1.23 and all later releases.

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

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.

Step 1 Save your current configuration.

```
saveallcnf
```

Step 2 Get the filename by listing the CNF directory:

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

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

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

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

Step 5 From the workstation, download the PXM Backup boot image.

```
unix-prompt> tftp <pxm.ip.address>
tftp> bin
tftp> put pxm_bkup_<new_rel>.fw POPEYE@PXM.BT
tftp> quit
```

Step 6 From the workstation, download the PXM FW.

```
unix-prompt> tftp <pxm.ip.address>
tftp> bin
tftp> put pxm_<new_rel>.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
```

Note Bytes sent, program length, and receive time vary per release. Also, see the Compatibility Matrixes for current file sizes and file names.

Step 7 Download the `ComMat.dat` file to the `C:/FW` directory of the Active PXM. Enter the TFTP **put** command:

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

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

```
PXM.a> copy ComMat.dat /FW/ComMat.dat
```

Step 9 Enter the command **install bt <***new_rel***>**.

Step 10 Enter the command **install <***new_rel***>**.

Step 11 After the Standby card is reset and successfully enters the hold state, on the Active PXM, enter the command **newrev <***new_rel***>**.

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

After the **newrev,** enter the command **dspcd** to show the firmware revision on the new, active PXM.

Caution If at this stage (after newrev) the upgrade needs to be aborted, follow the instructions under "Instructions to Abort PXM Upgrade, page 61."

During the 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 still have the MISMATCH. To correct the mismatch, you must check your back cards; they must be identical.

Step 12 After the Active PXM is reset and successfully enters the hold state, on the new Active PXM, enter **commit <***new_rel***>**.

Instructions to Abort PXM Upgrade

A graceful *downgrade* is not supported. However, abort or fallback to the previous release is supported at any stage during the upgrade. The following procedure should be used to abort to a previous release.

Upgrade from Release 1.1.3x

If the upgrade needs to be aborted for any reason during the upgrade process, follow these instructions.

Step 1 Execute **abort <***release no***>**

```
PXM.a> abort <release no>
```

Upgrade from Release 1.1.2x

If the upgrade needs to be aborted for any reason during the upgrade process, follow these instructions.

Step 1 If the abort is required before the **newrev** command is entered, skip to Step 2.

a. Enter the following commands if the upgrade process is past the **newrev** stage.

b. On the Active PXM, enter **shellConn**

c. Enter **smCardMibVer = 21**

d. Enter **saveDBToArchive <***PXM SlotNo***>, 0**

e. Enter **uploadBram <***PXM SlotNo***>, <***PXM SlotNo***>**

The <*PXM SlotNo*> should be **7** for the MGX8850 Switch and for the MGX 8250 Switch (even if the Active PXM is in slot 8, use slot **7**).

The <*PXM SlotNo*> should be **1** for the MGX8230 Switch (even if the Active PXM is in slot 2 use slot **1**).

The example that follows is for the MGX8850.

```
PXM.a > shellConn
-> smCardMibVer=21
-> saveDBToArchive 7, 0
-> uploadBram 7, 7
```

f. If RPM cards also are on this node, perform the following for each RPM card:

Inside shellConn on Active PXM, enter:

saveDBToArchive <*RPM_slot#*>, 1

d &arcMem+<*RPM_slot#*>*4

Copy down the 4 byte address that is displayed after executing the **d&arcMem+**<*RPM_slot#*>***4** command and enter it in the following command.

rmSlotArchFileSave <*RPM_slot#*>, <*4 byte address*>

For example, for an RPM in slot 9, the result is:

```
-> d &arcMem+36
d &arcMem+36
8051cb90:            8702 bad8 0000 0000 0000 0000   *      ..........*
8051cba0:  0000 0000 0000 0000 0000 0000 0000 0000
-> rmSlotArchFileSave 9,0x8702bad8
```

Step 2 Execute **abort <***release no***>.**

```
PXM.a> abort <release no>
```

Service Module Boot/Firmware Download Procedure

The following procedure describes how to download the boot and the service module firmware for slot-independent and slot-dependent images.

Step 1 Download the boot image for the service module onto the PXM hard disk.

```
unix-prompt> tftp <node_name or IP address>
tftp> bin
tftp> put <backup boot> POPEYE@SM_1_0.BT
tftp> quit
```

Step 2 Download the boot image onto the respective service module using the command:

install bt sm <*slot #*> <*version*>

Repeat for each of the service modules on the node.

Step 3 Now, choose instruction for slot-independent or slot-dependent firmware. See below.

For slot-independent image:

Download the selected revision of service module firmware onto the PXM hard disk.

```
unix-prompt>tftp <node_name or IP address>
tftp> bin
tftp> put <FW file> POPEYE@SM_1_0.fw
tftp> quit
```

You cannot do two puts in the same TFTP session.

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

For slot-dependent image:

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

```
unix-prompt> tftp <ip address of the MGX 8850 shelf>
tftp> bin
tftp> put <sm FW file name> POPEYE@SM_1_1.fw
```

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.

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

Manual Configuration of Chassis Identification

MGX as a Standalone Node

If any MGX box is to be used as a standalone node for testing, the intended model number from the PXM firmware configuration should be matched MANUALLY by running the "runConfigurator" utility.

Example: node1 was running 1.1.24 as a 8850 node:

If the node's model number is set to 8250 by default after a 1.1.32 firmware upgrade, but the node1 is still configured as a 8850 standalone node on the CWM side, then CWM will reject the node on discovery, and the node will remain undiscovered.

Solution: On every standalone node, manually verify that the runConfigurator settings match the switch.

Chassis Identification During a Firmware Upgrade

On the CWM side, the emd.conf must be modified to a one second wait time so it can help clean up the emc process's internal cache and CWM database (regarding any slot that has sent the functional removal trap). This ensures that CWM will sync up whatever is current with the switch after the upgrade.

Before a firmware upgrade is begun, complete the following steps:

Step 1 Change the following line in emd.conf:

"Hold for **300** secs before deleting the card after a func module trap is received".

to

"Hold for **1** secs before deleting the card after a func module trap is received".

Note This prevents race conditions in updating the database table from the firmware version upgrade.

Step 2 After emd.conf is changed, send HUP signals to all EMC processes.

Step 3 After the firmware upgrade is complete, reset the hold time back to **300** seconds.

Step 4 Send HUP signals to EMC processes to confirm the changeback.

Interoperability of Service Module on MGX 8220 and MGX 8250 Switches

Caution Graceful downgrade for the Service Module is not supported.

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

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

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

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

Plug in the card into the MGX 8220 shelf.

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

```
unix-prompt> tftp <ip address of the MGX 8220 shelf >
tftp> bin
1tftp> put <boot filename> AXIS_SM_1_<slot#>.BOOTkj
```

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

Login to the shelf.

```
unix-prompt> tftp cc <slot #>
tftp> chkflash
```

Verify that the two checksums are the same.

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

Service Module Upgrades

The following steps need to be followed for service module upgrades. Service module firmware images cannot be downloaded as specific versions, because only 1 slot independent image can be present on the disk. Hence, the user cannot revert back during the installation process.

Step 1 Download the service module firmware to the shelf. Refer to Service Module Boot/Firmware Download Procedure, page 62.

Note To upgrade all the service modules, load all the firmware files and boot files to the node. Then execute the command **resetsys**. Make sure that the configuration is saved.

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

Step 3 Enter the following command to install the service module boot file:

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

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

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

Step 4 For graceful upgrades, a secondary card should be backing up the service module that needs to be upgraded. Configure the redundancy and enter the following command:

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

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

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

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

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

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

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

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

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

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

Note There is no abort command for service module upgrade.

Route Processor Module (RPM) Addendum

This section describes the installation requirements and guidelines for RPM modules installed with this release.

All IOS firmware can be downloaded from CCO from the following location:

http://www.cisco.com/kobayashi/sw-center/sw-ios.shtml

About the Cisco IOS 12.2(4)T3 Release

The Cisco IOS 12.2(4)T3 or higher is used with MGX Release 1.2.01. This IOS release supports existing features on the MGX-RPM-PR and MGX-RPM-128M/B cards.

About the Cisco IOS 12.2(4)T1 Release

The Cisco IOS 12.2(4)T1 or higher is used with MGX Release 1.2.00. This IOS release supports new RPM features and continues to support existing features on the RPM-PR and MGX-RPM-128M/B cards.

Note that MPLS inter AS, MPLS TE, and POS port-adapter are not supported features on RPM for this release.

About the Cisco IOS 12.2(4)T Release

The Cisco IOS 12.2(4)T or higher is used with MGX Release 1.1.40. This IOS release supports new RPM features and continues to support existing features on the RPM-PR and MGX-RPM-128M/B cards.

Note that MPLS inter AS, MPLS TE, and POS port-adapter are not supported features on RPM for this release.

About the Cisco IOS 12.2(2)T2 and 12.2(2)T3 Release

The Cisco IOS 12.2(2)T2 and the 12.2(2)T3 Releases are used with MGX Releases 1.1.34 and 1.1.40. This IOS release does not support new RPM features, but has been tested with 1.1.34 and continues to support existing features on the RPM-PR and MGX-RPM-128M/B cards.

Please note the following anomaly in IOS Release 12.2(2)T2:

Problem Description:

Customers upgrading to 12.2(2)T2 image with RPMs might see some e-BGP sessions not coming up when the CE router is running an older version of IOS (12.0, 12.0.xT). This issue was first encountered with CE running 12.0(7)T image. In such cases, the CEs running old IOS versions were not able to create BGP sessions to PEs with the newer image (12.2(2)T2).

The issue is fixed in 12.2(2)T3. Customers who face the problems described with the 12.2(2)T2 image, may upgrade to 12.2(2)T3 image.

Symptom

MPLS PE doesn’t advertise BGP network to CE router running an older IOS image

Conditions

A Cisco router that is running Cisco IOS Release 12.2(3.1)T or 12.2(2)T and is configured as a provider edge (PE) router may not support Label Distribution Protocol (LDP). This defect might cause the PE router not to advertise any Border Gateway Protocol (BGP) routes to a Cisco 2600 series customer edge

(CE) router that is running Cisco IOS Release 12.0(18). However, the CE router will advertise routes to the PE router. Entering the neighbor ce-ipaddress don-capability-negotiate command on the PE router does not correct this defect.

Workaround:

Upgrade the CE router from Cisco IOS Release 12.0(18) to Cisco IOS Release 12.2(2)T3.

About the Cisco IOS 12.1(5.3)T_XT Release

The Cisco IOS 12.1(5.3)T_XT or higher is used with MGX Release 1.1.32 and provides support for:

- RPM-PR in any MGX chassis
  (Note: RPM-PR is FCS with Release 1.1.32; and General Availability with Release 1.1.34.)
- MGX-RPM-128M/Bs in an MGX 8230 chassis
- Multiple RPM card types
- IOS 12.1(5.3)T_XT offers no other software features for the RPM.

Note To locate IOS-related anomalies or problems fixed, please refer to IOS release notes.

Problems Fixed with IOS 12.1(5.3)T_XT

Please refer to the IOS 12.1 Release Notes at:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121relnt/index.htm

Bypass Feature for RPM in 12.2(4)T IOS Release

Note Information about the bypass feature and the IOS commands used to support it was not available at the time of the printing of the RPM documents; therefore, it is included in the these release notes.

RPM cards have a maximum storage of 128 KB for the NVRAM. This size limitation creates a problem for customers with large configurations, who find it impossible to store the complete configuration in the NVRAM, even with compression enabled.

In order to support storage of large configuration files, a new bypass feature is now available in the 12.2(4)T IOS Release. With the bypass feature enabled, the enhanced “write memory” is used to bypass the NVRAM and save the configuration on:

- For MGX Release 2, the file auto_config_slot## located in E:/RPM.
- For MGX Release 1, the file auto_config_slot## located in C:/RPM.

Where”##” represents the zero-padded slot number in which the RPM card is seated in the MGX chassis.

To enable the bypass feature, issue the command **rpmnvbypass** from the IOS run time image—not in the IOS boot image.

To disable the bypass feature, issue the command **no rpmnvbypass**.

To verify that the bypass feature is either enabled or disabled, issue the **show running-configuration** command. If the bypass feature is enabled, **rpmnvbypass** is seen on the display. If it is not seen, the feature is not enabled.

Note Since the bypass feature bypasses NVRAM, it is not necessary to compress the configuration file using the command **service compress-config**.

Table 8contains cautions important to the successful usage of the bypass feature.

Table 9 Boot Cautions

Caution	Why is This Important?
When using the bypass feature, you can only load the run time IOS image from the PXM hard-drive or from the boot flash.	In the case of an RPM module, the IOS image can be loaded in 3 ways: 3. From the PXM hard-drive. 4. From the boot flash. 5. From the network (e.g. via TFTP) from the RPM backcard (Ethernet or Fast Ethernet). When the bypass feature is enabled, the “boot config” statement: c:auto_config_slot## is automatically generated. The NVRAM configuration is cleared upon a “write memory”. In order to load from the network, the RPM has to have an IP address for its backcard. This information is part of the NVRAM configuration, which was just cleared by enabling the bypass feature. Hence, it is not possible to load the IOS image from the network upon a reload of the RPM after the “rpmnvbypass” and “write memory” have been executed.

Table 9 Boot Cautions

Caution	Why is This Important?
Do not execute the command **no boot config** because doing so may prevent the bypass feature from working properly.	When the bypass feature is enabled, the "boot config" statement: `c:auto_config_slot##` is automatically generated, and the NVRAM configuration is cleared. Any writes now are directed to the "boot config" file. This is essential, as a "write memory" expects the "boot config" statement to be present. If the "boot config" statement isn't present, it would write the configuration into the NVRAM, which of course, is not desirable when the objective is to save a complete configuration when the configuration is large and requires more space.
If the command **write memory** is issued with the bypass feature enabled, and is consequently followed by an RPM card reset, previous versions of the boot image will trigger the RPM card to go into boot mode (unable to load run-time IOS).	For safety purposes, the location of the system image is stored in a special area (called the ROMMON area) in the NVRAM. The ROMMON is always intact. The 12.2(4)T boot image accesses and reads ROMMON in order to load the IOS image. Boot images prior to 12.2(4)T do not read the ROMMON area. Generally, the IOS boot and run-time images are of the same versions. However, if the user changed his boot image to one prior to 12.2(4)T, on a reload, the boot image would see that the NVRAM configuration is empty (of course, this is normal when the bypass feature is enabled). However, since boot images prior to 12.2(4)T cannot access the ROMMON area, it cannot read there the location of the IOS image. Unable to see the IOS image, it instead loads itself.

Example 1 through Example 5 illustrate how the bypass feature is enabled and disabled, and how to validate each of these actions from the configuration display.

Example 1 Running configuration without the bypass feature enabled

```
rpm_slot02#show running-config
Building configuration...

Current configuration : 470 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm_slot02
!
boot system c:rpm-js-mz.<new_rel>
enable password cisco
!
ip subnet-zero
!
!
```

```
!
!
interface Switch1
 no ip address
 no atm ilmi-keepalive
 switch autoSynch off
!
ip classless
no ip http server
ip pim bidir-enable
!
!
snmp-server community public RO
snmp-server community private RW
!
!
line con 0
line aux 0
line vty 0 4
 no login
!
end
```

Example 2 Enable the bypass feature (rpmnvbypass)

```
rpm_slot02#
rpm_slot02#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
rpm_slot02(config)#rpmnvbypass
The "boot config" statement has been (re)added to your
running configuration. Do not remove it else risk not
using the nvbypass feature

rpm_slot02(config)#end
rpm_slot02#
```

Example 3 Running configuration with bypass feature enabled (note rpmnvbypass at end of output)

```
rpm_slot02#show running-config
Building configuration...

Current configuration : 515 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm_slot02
!
boot system c:rpm-js-mz.<new_rel>
boot config c:auto_config_slot02    <==== Line added as per output above
enable password cisco
!
ip subnet-zero
!
!
!
!
interface Switch1
 no ip address
 no atm ilmi-keepalive
 switch autoSynch off
!
ip classless
no ip http server
ip pim bidir-enable
!
!
snmp-server community public RO
snmp-server community private RW
!
!
line con 0
line aux 0
line vty 0 4
 no login
!
rpmnvbypass
end
```

Example 4 Disable the bypass feature (no rpmnvbypass)

```
rpm_slot02#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
rpm_slot02(config)#no rpmnvbypass
rpm_slot02(config)#end
rpm_slot02#
```

Example 5 Running configuration after the bypass feature is disabled

```
rpm_slot02#show running-config
Building configuration...

Current configuration : 503 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname rpm_slot02
!
boot system c:rpm-js-mz.<new_rel>
boot config c:auto_config_slot02
enable password cisco
!
ip subnet-zero
!
!
!
!
interface Switch1
 no ip address
 no atm ilmi-keepalive
 switch autoSynch off
!
ip classless
no ip http server
ip pim bidir-enable
!
!
snmp-server community public RO
snmp-server community private RW
!
!
line con 0
line aux 0
line vty 0 4
 no login
!
end

rpm_slot02#
```

Refer to Route Processor Module (RPM) Addendum, page 65 for more specific information about the RPM.

Upgrading from an MGX-RPM-128M/B Card to an RPM-PR Card

To replace an MGX-RPM-128M/B card with an RPM-PR card, the PXM must be running MGX Software Release 1.1.34 or later, and the RPM must be running IOS release 12.2(4)T or later. Then perform the following procedure.

Step 1 Insert the RPM-PR in a test node.

Step 2 Copy the new RPM-PR boot image to the flash. Verify that the boot image is the first file in the flash.

Step 3 Modify the configuration of the file to use the latest IOS image on the c: drive by entering the **boot system c:**<*IOS_filename*> command.

Step 4 Enter the **write memory** command to save the configuration file in NVRAM.

Step 5 Enter the **show bootvar** command to check the **BOOT** variable and to verify that the card us configured to boot from the latest image.

Now the RPM-PR card is ready to replace an MGX-RPM-128M/B card.

Step 6 Verify the following before inserting the RPM-PR in the node:

- PXM must be running a minimum firmware release of 1.1.34.
- PXM disk contains the latest IOS image specified for the RPM-PR.

Caution Once an MGX-RPM-128M/B card is replaced with a RPM-PR card, the MGX-RPM-128M/B card can not be re-installed. If an attempt is made to re-install the MGX-RPM-128M/B, the module will be put into 'Mismatch'.

Caution After installing the RPM-PR card, be sure not to mix card redundancy.

Upgrade Procedures for RPM Cards

The following sections describe how to upgrade boot and runtime software on RPM cards in detail.

Upgrading RPM Boot Software

At the factory, a boot file is installed in the bootflash on the RPM card and is used to boot the card. The runtime software is updated more frequently than the boot software. However, the boot software is updated occasionally. When you are updating runtime software, check Table 5 to see if a boot software upgrade is required.

The boot software is stored in bootflash memory on the RPM card. To manage the software in bootflash, you access it as if it were a hard disk. For example, in copy and delete file commands, files are identified as bootflash:*filename* (which is similar to *c:filename*).

The following example shows a directory of bootflash contents:

```
Router(boot)#show flash:
-#- ED --type-- --crc--- -seek-- nlen -length- -----date/time------ name
1   .D config   D4F7352A   40330   18      686 Jan 30 2001 18:18:41 auto_config_slot09
2   .D config   CBF007C1   40660    9      688 Feb 22 2001 15:33:11 slot9.cnf
3   .. image    F596869A  2973E8   27  2452744 Feb 28 2001 03:16:05
rpm-boot-mz_002.001.070.202
```

Note Although you can display directory contents with the **dir bootflash:** command, the **show flash:** command provides more detail. Also, although bootflash and flash are separate entities on other Cisco Systems Routers, both terms refer to the same entity on the RPM.

In the example above, the numbers in the left column indicate the order in which the RPM card will try to load software. The second column shows that the first two files are marked for deletion (D). The last column lists the names of the files stored in bootflash.

When managing the bootflash, you need to keep in mind the following:

- When the RPM card is reset, it tries to load the first undeleted bootable image in bootflash.
- Files are not removed from bootflash until the **squeeze flash:** command is entered.

Caution If all bootable images are deleted from bootflash, try to reinstall the bootflash file using the Xmodem download procedure found in Using XModem to Download Flash to RPM Cards, page 84. If this does not work, the card must be returned to the factory to be reprogrammed.

Upgrading RPM Runtime Software

The runtime software on the RPM can be loaded from the following sources:

- The C:RPM directory on the PXM1 hard disk
- Bootflash
- A TFTP server on a LAN to which an RPM back card is connected.

Cisco Systems recommends that you configure the RPM card to load from the C:RPM directory on the PXM1 hard disk. Note that images will load much faster from bootflash, but if you are using multiple RPM cards, it takes longer to complete an upgrade because the runtime software must be copied to each RPM card's bootflash instead of to a single location.

At startup, the RPM card attempts to load the software in the order listed in the startup-config file. The following example shows an excerpt from a startup-config file:

```
!
boot system c:rpm-js-mz_122-4.T
boot system bootflash:rpm-js-mz_122-4.T
boot config c:auto_config_slot09
logging rate-limit console 10 except errors
enable password cisco
!
```

In the startup-config file example, the RPM card attempts to load the runtime software from the PXM1 card (C:rpm-js-mz_122-4.T) first, and if that fails, it attempts to load the image copy stored in bootflash. This configuration takes longer to upgrade, but it assures the card can reboot if someone accidentally removes the file on the PXM1 hard disk.

Note The convention is lowercase *c* for RPM commands and uppercase *C* for switch commands.

To configure the RPM to load upgraded runtime software from the PXM1 hard disk, you need to do the following:

- Copy the upgraded file to the PXM1 hard disk
- Update the boot system variable in the router startup-config file to load the new file.
- Reset the RPM card so that it loads the new file.

RPM cards can be configured for 1:N redundancy as well as for non-redundant configurations. The procedures for both types of configuration are in the sections that follow.

Tips To simplify runtime software updates, copy the runtime file in the C:RPM directory and rename it to a generic name such as rpm-js-mz. The production runtime filenames have version numbers appended to them, but you can change this. This approach allows you to perform future upgrades by copying the file to the hard disk, renaming a copy of the file to your generic name, and resetting each card. The approach eliminates the need to reconfigure IOS on each card to recognize the new filename.

Upgrade Procedure for Boot Software and Runtime Software for Non-Redundant Cards

The following procedure describes how to upgrade boot software and runtime software.

Note The first part of this procedure describes boot software upgrade and the second part describes runtime software upgrade. RPM boot software can be upgraded either in boot mode or in runtime mode. The procedure described here shows an example for runtime mode. The same commands are applicable for upgrading boot software in boot mode.

Step 1 Copy the new boot software file for the RPM card to the switch (C:RPM) as described in "Copying Software Files to the Switch," which appears earlier in this section.

Step 2 Establish a configuration session using any valid user name.

Step 3 Use the **cc** command to select the RPM card to update.

```
8850_LA.7.PXM.a > cc 9

(session redirected)

Router>
```

The switch displays the IOS prompt for the router on the RPM card. From this point on, all commands are Cisco IOS commands.

Note This procedure assumes that you are familiar with Cisco IOS, which is a topic that is beyond the scope of this book. This procedure details only those commands that are unique to setting up RPM on the switch. For general Cisco IOS commands, examples are given to show how to complete the task.

Step 4 Enter Enable mode for the router.

```
Router>enable
Password:
Router#
```

Step 5 To verify router access to the PXM1 hard disk and display the boot file name, enter **dir c:** command.

```
Router#dir c:
Directory of c:/

65539  -rw-        815   Sep 13 2001 23:51:10  auto_config_slot09
65540  -rw-    2588780   May 22 2001 19:06:54  rpm-boot-mz_002.001.070.201
84611  -rw-    2452768   Apr 05 2001 05:34:44  rpm-boot-mz.122-4.T
66805  -rw-    8529104   May 22 2001 19:09:00  rpm-js-mz_002.001.070.201
85809  -rw-    7936012   Apr 05 2001 06:28:54  rpm-js-mz.122-4.T

104857600 bytes total (83068928 bytes free)
```

Step 6 To display the files in the bootflash, enter the **show flash:** command.

```
Router#show flash:
-#- ED --type-- --crc--- -seek-- nlen -length- -----date/time------ name
1   .. image    F596869A  296D88   27  2452744 Feb 28 2001 03:16:05 rpm-boot-mz_122-4.T

30315128 bytes available (2452872 bytes used)
```

Step 7 To copy new boot software to the bootflash, use the **copy** command.

```
Router#copy c:rpm-boot-mz_002.001.070.201 bootflash:
Destination filename [rpm-boot-mz_002.001.070.201]?
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCC
2334044 bytes copied in 35.768 secs (66686 bytes/sec)
```

Tips When prompted for the destination filename, press enter to use the source filename shown in the prompt. To change the destination filename, type a new filename after the prompt.

Step 8 To verify that the file was copied, enter the **show flash:** command.

Step 9 To mark an older boot file for deletion from the bootflash, use the **del bootflash:** command as shown in the following example:

```
Router#del bootflash:
Delete filename []? rpm-js-mz
Delete bootflash:rpm-js-mz? [confirm]
Router#
```

Tips To unmark a bootflash file so that it won't be deleted when the **squeeze flash:** command is run, enter the undelete <*number*> command, where *number* is the file number displayed in the left-most column of the *show flash:* command display.

Step 10 To delete all files that are marked for deletion from bootflash, enter the **squeeze flash:** command as shown in the following example:

```
Router(boot)#squeeze flash:
All deleted files will be removed. Continue? [confirm]y
Squeeze operation may take a while. Continue? [confirm]

Squeeze of bootflash complete
```

Step 11 Enter the **show flash:** command to verify that the bootflash files are as you want them.

Caution If all bootable images are deleted from bootflash, try to reinstall the bootflash file using the Xmodem download procedure found in Using XModem to Download Flash to RPM Cards, page 84 and restart the RPM card. If this does not work, the card must be returned to the factory to be reprogrammed. When you are done managing the bootflash, the **show flash:** command should display at least one bootable image, and **the image you want the card to boot from must be the first bootable image in the list.**

Tips If the **show flash:** command does not display a bootable image, copy a bootable image to bootflash as described earlier in this procedure. You can continue to manage the bootflash, even when there are no files in bootflash, until the router is restarted.

Tips If the bootflash contains bootable images and the sequence is such that the card will not start, you can enter rommon mode and load the bootable image. To get into rommon mode, establish a console connection to the RPM card, reset the RPM card using the **resetcd** <*slot*> command from the active PXM1 card, then quickly enter the **CTRL-[**, **Break** sequence at the RPM console. The command to send a **Break** depends on the computer platform and software you are using. It may take a couple of attempts to successfully get into rommon mode. When you are in rommon mode, the RPM card displays the *rommon 1* > prompt.

Once in rommon mode, you can enter the **dir bootflash:** command to display the images in bootflash. To boot one of the images, enter a **boot** command the following format: **boot bootflash:***filename*.

See Using XModem to Download Flash to RPM Cards, page 84.

This ends the boot software upgrade procedure. The following steps are for upgrading the runtime software. If you do not want to upgrade the runtime software, you need to restart the RPM card by entering the reload command.

Step 12 Copy the new runtime software file for the RPM card to the switch (C:RPM) as described in "Copying Software Files to the Switch," which appears earlier in this section.

Step 13 If you are using a generic filename for your runtime images, copy the file on the PXM1 hard disk and rename the copy. For example:

```
8850_LA.8.PXM.a > copy rpm-js-mz_122-4.T rpm-js-mz
```

Step 14 Establish a configuration session using any valid user name.

Step 15 If your RPM is already configured to use a file with a generic name, skip to Step 24.

Step 16 Use the **cc** command to select the RPM card to update.

```
pop20two.7.PXM.a > cc 9

(session redirected)

Router>
```

The switch displays the IOS prompt for the router on the RPM card. From this point on, all commands are Cisco IOS commands.

Note This procedure assumes that you are familiar with Cisco IOS, which is a topic that is beyond the scope of this book. This procedure details only those commands that are unique to setting up RPM on the switch. For general Cisco IOS commands, examples are given to show how to complete the task.

Step 17 Configure the RPM card to store its configuration on the PXM1 hard disk by entering the following command:

```
Router> boot config c:auto_config_slot#
```

Step 18 Enter Enable mode for the router.

```
Router>enable
Password:
Router#
```

Step 19 Display the startup runtime software filename by entering the **show bootvar** command.

```
Router#show bootvar
BOOT variable = c:rpm-js-mz_122-4.T,12;
CONFIG_FILE variable = c:auto_config_slot09
BOOTLDR variable does not exist
Configuration register is 0x2
```

In the example above, the startup runtime software file is C:rpm-js-mz_122-4.T, and it has a version number attached to it. Another way to view the boot list is to enter the **show startup-config** command and look for the **boot system** commands.

Step 20 Enter the router global configuration mode.

```
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
```

Step 21 If you need to change the boot system filenames, remove the existing boot list using the **boot system** command as follows:

```
Router(config)# no boot system
```

Step 22 Create a new boot list by entering one or more **boot system** commands as follows:

```
Router(config)# boot system c:filename
```

Replace the filename variable with the name of the new runtime file that was previously transferred to the C:RPM directory on the switch. For example:

```
Router(config)# boot system c:rpm-js-mz
```

If you want to enter additional boot system commands, enter them in the order in which you want the RPM card to use them. The following example adds a statement to load from bootflash if the runtime file is not found on the PXM1 hard disk:

```
Router(config)# boot system bootflash:rpm-js-mz_122-4.T
```

Note Before the RPM card can load runtime software from bootflash, you must copy the runtime software to the bootflash. The procedure for copying files from the PXM1 hard disk to bootflash is described in the previous section.

Step 23 Exit global configuration mode and save the new configuration.

```
Router(config)#^Z
Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
```

Step 24 To verify the change, enter the **show bootvar** or **show run** commands.

Step 25 Switch to the active PXM1 card and reset the RPM card. For example:

```
Router#cc 8

(session redirected)

8850_LA.8.PXM.a > resetcd 9
The card in slot number 9, will be reset. Please confirm action
resetcd: Do you want to proceed (Yes/No)? y
```

Upgrading RPM Boot Software and Runtime Software for 1:N Redundancy

Redundancy must be established before you use the procedure in this section. If redundancy has not been established, upgrade each RPM card using the procedure in the next section, "Upgrading Without Redundancy".

To upgrade the RPM runtime software for 1:N redundancy, use the following procedure. (Note that the directory on the PXM1 card uses (C:) and the directory within the router card uses (c:).)

The following procedure describes how to upgrade boot software and runtime software.

Note The first part of this procedure describes boot software upgrade and the second part describes runtime software upgrade. RPM boot software can be upgraded either in boot mode or in runtime mode. The procedure described here shows an example for runtime mode. The same commands are applicable for upgrading boot software in boot mode.

Step 1 Copy the new boot software file for the RPM card to the switch (C:RPM) as described in "Copying Software Files to the Switch," which appears earlier in this section.

Step 2 Establish a configuration session using any valid user name.

Step 3 Use the **cc** command to select the RPM card to update.

```
8850_LA.7.PXM.a > cc 9

(session redirected)
```

```
Router>
```

The switch displays the IOS prompt for the router on the RPM card. From this point on, all commands are Cisco IOS commands.

Note This procedure assumes that you are familiar with Cisco IOS, which is a topic that is beyond the scope of this book. This procedure details only those commands that are unique to setting up RPM on the switch. For general Cisco IOS commands, examples are given to show how to complete the task.

Step 4 Enter Enable mode for the router.

```
Router>enable
Password:
Router#
```

Step 5 To verify router access to the PXM1 hard disk and display the boot file name, enter **dir c:** command.

```
Router#dir c:
Directory of c:/

65539  -rw-         815   Sep 13 2001 23:51:10  auto_config_slot09
65540  -rw-     2588780   May 22 2001 19:06:54  rpm-boot-mz_002.001.070.201
84611  -rw-     2452768   Apr 05 2001 05:34:44  rpm-boot-mz.122-4.T
66805  -rw-     8529104   May 22 2001 19:09:00  rpm-js-mz_002.001.070.201
85809  -rw-     7936012   Apr 05 2001 06:28:54  rpm-js-mz.122-4.T

104857600 bytes total (83068928 bytes free)
```

Step 6 To display the files in the bootflash, enter the **show flash:** command.

```
Router#show flash:
-#- ED --type-- --crc--- -seek-- nlen -length- -----date/time------ name
1   .. image    F596869A  296D88   27  2452744 Feb 28 2001 03:16:05 rpm-boot-mz_122-4.T

30315128 bytes available (2452872 bytes used)
```

Step 7 To copy new boot software to the bootflash, use the **copy** command.

```
Router#copy c:rpm-boot-mz_002.001.070.201 bootflash:
Destination filename [rpm-boot-mz_002.001.070.201]?
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCC
2334044 bytes copied in 35.768 secs (66686 bytes/sec)
```

Tips When prompted for the destination filename, press enter to use the source filename shown in the prompt. To change the destination filename, type a new filename after the prompt.

Step 8 To verify that the file was copied, enter the **show flash:** command.

Step 9 To mark an older boot file for deletion from the bootflash, use the **del bootflash:** command as shown in the following example:

```
Router#del bootflash:
Delete filename []? rpm-js-mz
Delete bootflash:rpm-js-mz? [confirm]
Router#
```

Tips To unmark a bootflash file so that it won't be deleted when the **squeeze flash:** command is run, enter the undelete <*number*> command, where *number* is the file number displayed in the left-most column of the *show flash:* command display.

Step 10 To delete all files that are marked for deletion from bootflash, enter the **squeeze flash:** command as shown in the following example:

```
Router(boot)#squeeze flash:
All deleted files will be removed. Continue? [confirm]y
Squeeze operation may take a while. Continue? [confirm]

Squeeze of bootflash complete
```

Step 11 Enter the **show flash:** command to verify that the bootflash files are as you want them.

Caution If all bootable images are deleted from bootflash, try to reinstall the bootflash file using the Xmodem download procedure found in Using XModem to Download Flash to RPM Cards, page 84 and restart the RPM card. If this does not work, the card must be returned to the factory to be reprogrammed. When you are done managing the bootflash, the **show flash:** command should display at least one bootable image, and **the image you want the card to boot from must be the first bootable image in the list.**

Tips If the **show flash:** command does not display a bootable image, copy a bootable image to bootflash as described earlier in this procedure. You can continue to manage the bootflash, even when there are no files in bootflash, until the router is restarted.

Tips If the bootflash contains bootable images and the sequence is such that the card will not start, you can enter rommon mode and load the bootable image. To get into rommon mode, establish a console connection to the RPM card, reset the RPM card using the **resetcd** <*slot*> command from the active PXM1 card, then quickly enter the **CTRL-[**, **Break** sequence at the RPM console. The command to send a **Break** depends on the computer platform and software you are using. It may take a couple of attempts to successfully get into rommon mode. When you are in rommon mode, the RPM card displays the *rommon 1* > prompt.

Once in rommon mode, you can enter the **dir bootflash:** command to display the images in bootflash. To boot one of the images, enter a **boot** command the following format: **boot bootflash:***filename*.

See Using XModem to Download Flash to RPM Cards, page 84.

This ends the boot software upgrade procedure for the primary card. The following steps are for upgrading the runtime software. If you do not want to upgrade the runtime software for the primary card, skip steps 12 through 24 and go to step 25 to upgrade the boot software on the secondary card.

Step 12 Copy the new runtime software file for the RPM card to the switch (C:RPM) as described in "Copying Software Files to the Switch," which appears earlier in this section.

Step 13 If you are using a generic filename for your runtime images, copy the file on the PXM1 hard disk and rename the copy. For example:

```
8850_LA.8.PXM.a > copy rpm-js-mz_122-4.T rpm-js-mz
```

Step 14 Establish a configuration session using any valid user name.

Step 15 If your RPM is already configured to use a file with a generic name, skip to Step 25.

Step 16 Use the **cc** command to select the RPM card to update.

```
pop20two.7.PXM.a > cc 9

(session redirected)

Router>
```

The switch displays the IOS prompt for the router on the RPM card. From this point on, all commands are Cisco IOS commands.

Note This procedure assumes that you are familiar with Cisco IOS, which is a topic that is beyond the scope of this book. This procedure details only those commands that are unique to setting up RPM on the switch. For general Cisco IOS commands, examples are given to show how to complete the task.

Step 17 Configure the RPM card to store its configuration on the PXM1 hard disk by entering the following command:

```
Router> boot config c:auto_config_slot#
```

Step 18 Enter Enable mode for the router.

```
Router>enable
Password:
Router#
```

Step 19 Display the startup runtime software filename by entering the **show bootvar** command.

```
Router#show bootvar
BOOT variable = c:rpm-js-mz_122-4.T,12;
CONFIG_FILE variable = c:auto_config_slot09
BOOTLDR variable does not exist
Configuration register is 0x2
```

In the example above, the startup runtime software file is c:rpm-js-mz_122-4.T, and it has a version number attached to it. Another way to view the boot list is to enter the **show startup-config** command and look for the **boot system** commands.

Step 20 Enter the router global configuration mode.

```
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
```

Step 21 If you need to change the boot system filenames, remove the existing boot list using the **boot system** command as follows:

```
Router(config)# no boot system
```

Step 22 Create a new boot list by entering one or more **boot system** commands as follows:

```
Router(config)# boot system c:filename
```

Replace the filename variable with the name of the new runtime file that was previously transferred to the C:RPM directory on the switch. For example:

```
Router(config)# boot system c:rpm-js-mz
```

If you want to enter additional boot system commands, enter them in the order in which you want the RPM card to use them. The following example adds a statement to load from bootflash if the runtime file is not found on the PXM1 hard disk:

```
Router(config)# boot system bootflash:rpm-js-mz_122-4.T
```

Note Before the RPM card can load runtime software from bootflash, you must copy the runtime software to the bootflash. The procedure for copying files from the PXM1 hard disk to bootflash is described in the previous section.

Step 23 Exit global configuration mode and save the new configuration.

```
Router(config)#^Z
Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
```

Step 24 To verify the change, enter the **show bootvar** or **show run** commands.

Step 25 Switch to the active PXM1 card. For example:

```
Router#cc 8

(session redirected)
```

Step 26 Switch to the secondary card using the **softswitch** command as follows:

```
8850_LA.8.PXM.a > softswitch <fromSlot> <toSlot>
```

Replace <*fromSlot*> with the slot number of the primary card. Replace <*toSlot*> with the slot number of the secondary card.

This step makes the secondary card active and resets the primary RPM card. When the Primary card resets, it loads the upgraded software.

Step 27 **cc** to the secondary slot.

Step 28 Repeat steps 1through 11.

This ends the boot software upgrade on the secondary card. If you do not want to upgrade the runtime software, go to step 30.

The following steps are for upgrading runtime software on the secondary card.

Step 29 Repeat steps 12through 24.

Step 30 Switch back to the primary card using the **softswitch** command as follows:

```
8850_LA.8.PXM.a > softswitch <fromSlot> <toSlot>
```

Replace <*fromSlot*> with the slot number of the secondary card. Replace <*toSlot*> with the slot number of the primary card.
This step makes the primary card active and resets the secondary RPM card. When the reset is complete, the secondary card is ready to run the upgraded software.

Step 31 To verify that the router reboot is complete, enter the **dspcds** or **dspcd** <*slot*> commands. The reboot is complete when the card state displays as *Active*. Another way to verify router operation is to use the **cc** slot command. If you can access the router from the switch prompt, the router reboot is complete.

Step 32 If there are other primary cards with redundant (secondary) cards, repeat this procedure for each primary card.

Using XModem to Download Flash to RPM Cards

Use the xmodem feature to download the flash to an RPM/B or RPM-PR card. During this process, the card should be connected to a target machine through HyperTerminal with settings of 9600, n, 8, and 1.

Step 1 Put the node in monitor mode by entering the **priv** command to gain access to the privileged commands as follows:

```
rommon 1> priv
You now have access to the full set of monitor commands. Warning:
some commands will allow you to destroy your configuration and/or
system images and could render the machine unbootable.
```

Step 2 The xmodem command becomes available and the general syntax of this command and availability of this can be checked by giving xmodem command without any parameters on the CLI, as follows:

```
rommon 2 > xmodem
usage: xmodem [-cys]
-c  CRC-16
-y  ymodem-batch protocol
-s<speed> Set speed of download, where speed may be
          1200|2400|4800|9600|19200|38400
rommon 3 >
```

The command line options for xmodem are as follows:

Option	Definition
–c	xmodem performs the download using CRC-16 error checking to validate packets. Default is 8-bit CRC.
–y	xmodem uses Ymodem-batch protocol for downloading, which uses CRC-16 error checking.
–s	Specifies the download speed. Default is 9600 bps.

Note If you do not find the xmodem commands, then the xmodem feature is not available on this rommom version. In that case, you must return the card to Cisco.

Note The rommon “xmodem/ymodem” transfer only works on the console port. You can only download files to the router. You cannot use “xmodem/ymodem” to get files from the router.

For example:

```
rommon 4> xmodem -cys 38400
Do not start sending the image yet...
Invoke this application for disaster recovery. Do you wish to
continue? y/n [n]: y
Note, if the console port is attached to a modem, both the
console port and the modem must be operating at the same baud
rate. Use console speed 38400 bps for download [confirm]
```

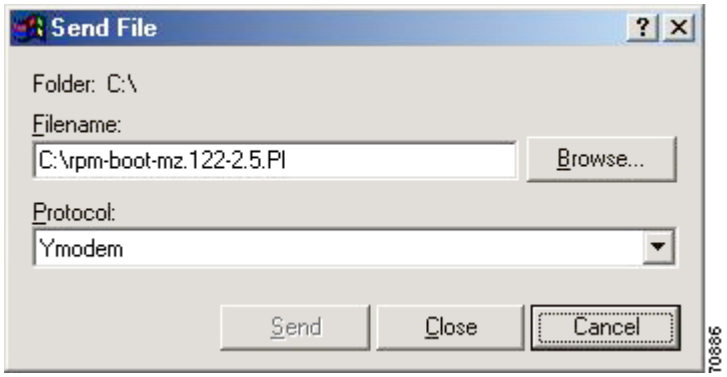
Step 3 At this point, change the preferences in HyperTerminal and adjust the speed from 9600 to 38400.

Note You can continue at the speed of 9600 as well by either not specifying the –s option in the command, or by specifying 9600 explicitly, but it will take longer.

The console will display the following message:

```
Download will be performed at 38400. Make sure your terminal
emulator is set to this speed before sending file. Ready to
receive file ...
```

Step 4 Use the Transfer-->Send File option in HyperTerminal to start the image transfer.



In the Filename box, browse and choose the image file to be downloaded. Also since we used the “y” option while invoking the xmodem, set the transfer protocol to ymodem or use Xmodem protocol by not specifying the –y option on the command line.

The transfer screen comes up and transfer starts. (The transfer may not start immediately; wait for some time and it should start.)

After the transfer is completed (it should typically take about 10-15 minutes), the following messages are displayed on HyperTerminal console:

```
Returning console speed to 9600.

Please reset your terminal emulator to this speed...
```

Step 5 Return the console speed back to 9600 through HyperTerminal's Preferences menu option.

Usually, due to time lag between changing HyperTerminal speed back to 9600, you might see a bunch of garbage. To avoid this, disconnect and reconnect the HyperTerminal to get the console back again.

The system will reset itself from here and will boot with new software image.

Historical Information from the 1.2.00 Baseline

Features Introduced in Release 1.2.00

Release 1.2.00 is a feature release. The following table contains a short description of the features which are available with Release 1.2.00.

Features
FRSM-HS2/B, page 86. In addition to the current HSSI interface support, the new service module supports V.35 and X.21 Frame Relay interfaces.
SRM-E Service Redundancy Module is an enhanced version of the current SRM-3T3 card, supporting a new one-port OC3/STM1 back card. The new card supports BERT, 1:N redundancy for the 8 port service modules and both T1 and E1 bulk distribution for the 8 port service modules. APS support will be available in a future release.
ITU APS Annex-A, All Configurations Supported on PXM1, page 93. This feature was introduced in Release 1.1.40 with some configurations supported; now all are supported. Compatible with CWM 10.5 and higher.
CESM 8T1 Model B, page 94 eliminates problem in DS0 throughput reduction when CESM channels are configured in CAS mode (not applicable for E1 lines).
PXM-UI-S3, page 95, provides support for Stratum-3 clocking. This card was first supported in Release 1.1.31. Release 1.1.31 was compatible with CWM 10.3. The upgrade to Release 1.2.00 provides important fixes to this feature.

FRSM-HS2/B

The FRSM-HS2/B service module supports v.35 and x.21 frame relay interfaces in addition to the current HSSI interface. A new 8 port back card 12IN1-8S is introduced. The new front card supports the current HSSI back card and the new 12IN1-8S back card. All the current FRSM-HS2 features are supported in addition to the FRSM-HS1/B features. Each interface in the 12IN1-8S can be individually configured as x.21 or v.35 interface. The new service module supports a maximum of 4000 connections with the 12IN1-8S back card and 2000 connections with the HSSI back card when no LMI is configured. When LMI is configured, the maximum number of connections per port for strataLMI port is 560 and Annex A/D UNI/NNI port is 898.

The FRSM-HS2/B supports both DCE and DTE modes with line rates between 48Kbps to 51.84 Mbps for HSSI interface and 48Kbps to 8.192 Mbps for v.35/x.21 interface. In FRSM-HS2B, for DTE interfaces the clock frequency threshold %ge is introduced and is configurable (1 - 5) % with a default value of 3%. The new front card and back card is supported in CWM 10.5.10.

Warning **Do not configure an interface to a DTE mode when a physical loopback plug is plugged in. This will cause the line to go in and out of alarm, and cause software errors in the PXM. Use the command cnfln to configure the line as DCE to recover from this situation. For further information refer to bug CSCdv79470.**

A comparison of the FRSM-HS1/B, FRSM-HS2, and FRSM-HS2/B is shown in Table 10.

Table 10 Comparison of FRSM Modules

Quality	FRSM-HS1/B	FRSM-HS2	FRSM-HS2/B
back card supported	12IN1-4S	HSSI	HSSI, 12IN1-8S
port count	4	2	2 with HSSI 8 with 12IN1-8S
maximum line rate	8 Mbps	52 Mbps	52 Mbps with HSSI 8 Mbps with 12IN1-8S
individually configurable interface type	No	No	No with HSSI Yes with 12IN1-8S
DTE clock monitoring threshold	—	—	Available
maximum number of connections	200	2000	2000 with HSSI 4000 with 12IN18-S
redundancy support	No	1:1	1:1 with HSSI None with 12IN1-8S

Table 11 CLI New or Modified Commands

CLI	Changes
addln	Existing **addln** command is modified to support per line interface type configuration (used only with the 12IN1-8S). If the user doesn't specify <interface_type>, the default type V.35 is used.
cnfln	Existing **cnfln** command is modified on FRSM-HS2/B to support new MIB objects. **Note** Do not configure an interface to DTE mode when a physical loopback plug is plugged in. This will cause the line to go in and out of alarm and generate software errors on the PXM. If this situation occurs, use the command **cnfln** to configure the line as DCE to recover from the situation. For further information about this problem, refer to the Known Anomalies for Platform Software Release 1.2.01 and Service Module Firmware, page 26, number CSCdv79470.
cnfclktype	Existing **cnfclktype** command is added to FRSM-HS2B to configure line clock type for V.35/X.21 interfaces. This command is valid on the FRSM-HS2B-12IN1 card.
dspln	Existing **dspln** command is modified on FRSM-HS2/HS2B to display new objects.
dsplns	Existing **dsplns** command is modified on FRSM-HS2/HS2B to display interface type.

The following table lists the cables necessary for card performance.

Table 12 Cables Supported for HSSI

DCE	DTE	Cable
FRSM-HS2/B	Cisco router	St. Cable 72-0710-01
FRSM-HS2/B	Non-Cisco standard DTE	St. Cable 72-0710-01
Cisco router	FRSM-HS2/B	St. Cable 72-0710-01
Non-Cisco standard DCE	FRSM-HS2/B	Cross Cable 72-1265-01
FRSM-HS2/B	FRSM-HS2/B	Cross Cable 72-1265-01

SRM-E

The new Service Redundancy Module is an enhanced version of the current SRM-3T3 card. The new card supports a one-port OC3/STM1 back card or functions without a back card.

Features Supported Without a Back Card	Features Supported With a Back Card
BERT	Bulk Distribution
1:N redundancy	BERT
--	1:N redundancy

The new card supports BERT, 1:N redundancy for the 8 port service modules and both T1 and E1 bulk distribution for the 8 port service modules. Support for both GR-253 and ITU- Annex A and B APS 1+1 will be provided in a future release.

The new front card will function without the back card for BERT and 1:N redundancy features. CWM and CiscoView will support the new front and back card.

You can have either 0, 2 or 4 SRM's with redundant processors and 0, 1 or 2 with non-redundant processors. The MGX8250 or MGX 8850 shelf has two bays while the MGX8230 has only one bay. Each bay of the MGX8x50 requires its own SRM-E card along with its respective back card. For full redundancy for the shelf, you need 4 SRM-Es and their respective back cards for MGX8850 or MGX 8250 switch (2 SRM-Es for MGX8230). Since the SRM-E is part of the core card set, if redundancy is required for the PXM, then redundancy also should be provided for the SRM-E.

SRM-E cards do not require any firmware to be downloaded to them. They are controlled by platform software running on the PXM. When a switch-over occurs from active PXM to standby PXM, the corresponding SRM-E cards (as part of the core card set) will also switch.

The interfaces available (through the appropriate back cards below) are:

- OC3 optical
- STS3 electrical
- STM1 optical
- STM1 electrical

The following cards are supported on both MGX8850 or MGX 8250 switch and the MGX8230 switch.

SMFIR: Single Mode Intermediate Range Fiber

STM1-EL-1: Synchronous Transport Module level 1

Limitations	Limits
Physical Interfaces • Data Communication Channel (DCC) bytes in the Sonet/SDH overhead bytes are not supported. • Byte-synchronous mapping will be implemented only for T1. Support for E1 will be implemented in a subsequent phase only if required. **Bulk-mode Distribution** • Service module lines should be mapped to bulk-distributed channels on an all-or-none basis, i.e. a service module should get all of its lines either from its back card or from the distribution bus but not both. **BERT** • When BERT is active, regular user traffic cannot flow on the port/line being tested. • Only one BERT session per SRME can be active at any one time. • You must stop an ongoing BERT operation to configure a different pattern. • Far end loopbacks and V.54 polynomial loopbacks are not verified (they are always reported to have succeeded). • if BERT is in progress, it will be stopped (and not resumed) if core card switch-over takes place. • If BERT is in progress, it will be stopped (and not resumed) if APS switch-over is required. • Only redundancy with 2 backcards is supported.	**Bulk-mode distribution and redundancy** • A maximum of 84 T1 lines and 63 E1 lines can be distributed. Note that 12 slots are available in MGX8x50 for distribution with a capacity to support 96 T1/E1 lines if 8 line service modules are used. • On MGX8x50, SRME in a given bay can distribute only to service modules in that bay. • Only one set of service modules can be covered for redundancy in non-bulk mode using redundancy bus. (Multiple sets of service modules can be covered for redundancy in bulk mode) • A redundancy group can not span both bays of MGX8x50. **Non-bulk mode redundancy** • Multiple redundancy groups can be defined but only one redundancy group in each half of the shelf can be using the redundancy bus at any time. **BERT** • The BERT functionality described in this document is for use with the SRME card. The following Service Modules are supported: FRSM-8T1/E1, AUSM-8T1/E1, CESM-8T1/E1, VISM-8T1/E1, FRSM-2CT3 • PN127 patterns are not supported because SRME can only generate the PN127 patterns and the detection is left to the service modules, which can not currently detect the PN127 patterns. • BERT support in the service module is necessary. Service module must support specific services such as verify the existence of a port/line, switch the physical lines to the BERT bus etc.
Automatic Protection Switching • APS will be supported in a future release.	

Table 13 SRM-E LED Descriptions

LED	State	Red	Yellow	Green	Off
ACT	Card State	N/A	N/A	Card is active and ready	Card is not yet ready
STDBY	Card State	N/A	Card is in standby mode or a mismatch occurred for active card	N/A	Card is not in standby mode or a mismatch did not occur for the active card
FAIL	Card State	Indicates a major failure with the card	N/A	N/A	Card is working
1:N RED	Card State	N/A	N/A	1:N on-bulk mode redundancy is in force	1:N on-bulk mode redundancy is not in force
BERT	Card State	N/A	N/A	BERT is in progress	BERT is not in progress
Line LED(s)	Line State	Service affecting alarms (LOS, LOF, LOP, AIS etc.)	Non-service affecting alarms (RDI)	Normal operation	Line is not connected

Table 14 SRM-E Commands

CLI	Change
addln	Physical interface. Existing command **addln** is modified to include interface type.
cnfln	Physical interface. Existing command **cnfln** is modified to support new MIB objects and new enumerations for line rate. For tributary type, option VT2 (carries E1 signals in Sonet) is not supported in Release 1.2.00. For tributary mapping type, only option, 2 byte-synchronous mapping, is supported for T1.
dspln	Physical interface. Existing command **dspln** is modified to include new MIB objects.
dsplns	Physical interface. Existing command **dsplns** is modified to the interface type.
delln	Physical interface. Existing command **delln** is modified to disable a line on the new card. **Note** A line cannot be deleted if distribution links are configured for that line.
addlnloop	Physical interface. Existing command **addlnloop** is modified to add a logical loopback on a line on the new card.

Table 14 SRM-E Commands (continued)

CLI	Change
dellnloop	Physical interface. Existing command **dellnloop** is modified command is modified to delete a logical loopback on a line on the new card.
cnfsrmclksrc	Managing clock sources. Existing command **cnfclksrc** is modified to configure a clock source on the new card. **Note** If configured for loop timing and the clock is lost (say, due to LOS), SRM-E switches to the backplane clock and reverts to loop timing when the signal is restored. This protection feature is available only for loop timing.
dspsrmclksrc	Managing clock sources. Existing command **dspsrmclksrc** is modified to display the card types of the current and previous SRM card.
clralm	Managing alarms. Existing command **clralm** is modified to clear alarms on a line on the new card.
dspalm	Managing alarms. Existing command **dspalm** is modified to display alarms on a line on the new card.
dspalms	Managing alarms.Existing command **dspalms** is modified to display alarms on all lines of a slot on the new card.
clralmcnt	Managing alarms. The existing command **clralmcnt** is modified to clear alarm counts on a line on the new card.
dspalmcnt	Managing alarms.The existing command **dspalmcnt** is modified to display alarm counts on a line on the new card.
xcnfalm	Managing alarms.The existing command **xcnfalm** is modified to configure alarms for a line on the new card. The **xcnfalm** command allows only DS3 and E3 alarm thresholds to be configured.
dspalmcnf	Managing alarms.Display alarm configuration for a line.
addlink	Bulk redundancy/distribution. The existing command **addlink** is modified to link a certain number of T1/E1 channels from a bulk interface on SRM-E to a service module's T1/E1 lines. This command checks the card type of the service module in the target slot. The service module must be a T1/E1 type, depending upon the tributary type configured for the SRM-E line using the **cnfln** command. A service module will switch all its lines to bulk mode even if only one line is mapped to a tributary from SRM-E. **Note** You must enable the lines on the SRM-E cards (using the **upln** and **cnfln** commands) before you can configure them for distribution.
cnflink	Bulk redundancy/distribution. The existing command **cnflink** is modified to configure the link for T1 byte-sync mapping on the new card. For byte-sync mapping on sonet interfaces, the T1 framing format should be configured. The framing format can be specified at line level for all links using the **cnfln** command. It can be then overridden on a per link basis using the **cnflink** command. **Note** The **cnflink** command is not applicable to 3T3 back cards. Also, byte-sync mapping is supported only for Sonet --> T1 mapping. Therefore, this command is not applicable if an SRM-E's line are configured for SDH --> E1 mapping.

Table 14 SRM-E Commands (continued)

CLI	Change
dsplink, dspslotlink	Bulk redundancy/distribution. The existing commands **dsplink/dspslotlink** are modified to display distribution links on the new card.
dellink, delslotlink	Bulk redundancy/distribution. The existing commands **dellink/delslotlink** are modified to delete distribution links on the new card. After the last distribution link to a service module is deleted, the service module switches all its lines to non-bulk mode (to its back card).
clrsrmcnf	Managing configuration. The existing command **clrsrmcnf** is modified to clear all card configuration including distribution links. The configuration cannot be cleared if redundancy is enabled.
dspsrmcnf	Managing configuration. The existing command **dspsrmcnf** is modified to display the current card configuration.
addred	Redundancy activities. The existing command **addred** is modified to configure redundancy on the new card.
dspred	Redundancy activities. The existing command **dspred** is modified to display the redundancy configuration on the new card.
delred	Redundancy activities. The existing command **delred** is modified to delete the redundancy configuration on the new card.
softswitch	Redundancy activities. The existing command **softswitch** is modified to manually switch to the redundant module for the SRM-E.
switchback	Redundancy activities. The existing command **switchback** is modified to switch back to the primary module from the redundant module for the SRM-E.
cnfbert	BERT activities. The existing command **cnfbert** is modified to configure a line or port for BERT and start the test on the new card.
dspbert	BERT activities. The existing command **dspbert** is modified to display the parameters and the results of an ongoing operation on the new card.
modbert	BERT activities. The existing command **modbert** is used to modify BERT parameters.
delbert	BERT activities. The existing command **delbert** is modified to delete/terminate the operation in progress on the new card.
adddiagtest	Diagnostics.The following commands are modified for test number 8-SRM M13 Access. The commands will perform SRM or SRME hardware online diagnostics, depending upon what kind of cards are in the slot. Refer to the *Release Notes for Cisco WAN MGX 8850, MGX 8230, and MGX 8250 Software Version 1.1.40* at http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/14/rnotes/rn1140.htm
clralldiagtests	Same as above.
clrdiagresults	Same as above.
cnfdiagparams	Same as above.
cnfdiagtest	Same as above.
deldiagtest	Same as above.
dspdiagtests	Same as above.
dspdiagresults	Same as above.

Table 14 SRM-E Commands (continued)

CLI	Change
dsplog	The command **dsplog** will include SRME online diagnostics failure if it happens.
pausediag **resumediag**	Same as above.
rundiagtest	Same as above.
showdiagtests	Same as above.

ITU APS Annex-A, All Configurations Supported on PXM1

In the previous MGX1 release (1.1.40), limited ITU-APS Annex-A configuration was validated and made available in MGX 8230, 8250 and 8850 with support for a 1+1 bidirectional non-revertive configuration. In Release 1.2.00, the remaining configurations are supported.

Features	Limitations
Software Supported configurations for OC3/STM1 (SMFIR) interface and OC12/STM4 (SMFLR and MMF) interface are: • Bi-directional revertive • Bi-directional non-revertive • Unidirectional revertive • Unidirectional non-revertive	**Hardware** There is no support for intracard APS configuration. **Firmware** Interoperability between 1+1 unidirectional and 1+1 bidirectional is not supported.

Table 15 CLI Modified and New Commands

CLI	Change
addapsln	The parameter “archmode” sets the APS architect mode to be used on the working/protection line pairs. The new value “5” is added to specify 5: 1+1 Annex A.
dspapsln	The display “1+1_Anex A” is added to when a line has been set to Annex A.
switchapsln	The command is modified to include the following options: 3 = forced working-> protection 4 = forced protection->working 5 = manual working->protection 6 = manual protection-> working

CESM 8T1 Model B

CESM-8T1 and CESM-8E1 cards provide TDM circuit emulation capabilities over ATM networks, according to ATM forum CES-IS standards.

During field testing, it was found that in the case of CESM-8T1 cards (and not applicable for CESM-8E1 cards), when a CESM channel was configured in CAS mode, the first byte of an AAL1 structure may not be aligned to the first byte of T1 physical level multiframe (SF/ESF). This causes the effective DS0 throughput to reduce from 62.67 Kbps to 60 Kbps. This throughput reduction causes bit errors when the CESM-8T1 is used in certain kind of applications; for example, during transfers of modem calls.

Both hardware and firmware changes were required to eliminate this anomaly. The hardware changes are implemented as CESM-8T1/B revision of the hardware with a minimum Firmware Release 1.2.00. No earlier versions of firmware are supported. The model "B" does not show up via CLI on the PXM or via CWM. However, if the command **dspcd** is executed from the CESM Model B, it will display "CESM8T1B" next to the Fab number. This can be used to differentiate between CESM model A and B cards. The CESM8T1/B card also is identified by a new face plate on which the card name is suffixed with a "B.".

Model A and Model B card are interchangeable, except when multi-framing is enabled on Model-B. In that case, multi-framing must be disabled before changing cards. Note that the default framing mode is non-multiframe (in order to have a compatibility between Model-A & Model-B).

The CESM8T1/B card supports 1:N redundancy.

Table 16 CESM-8T1 and CESM-8T1 /B Feature Comparison

CESM-8T1	CESM-8T1/B
Exhibits multiframe-AAL1 structure misalignment.	Multiframe-AAL1 structure aligned if MF enabled.
The clocking feature of deriving service module line clock can be used.	If MF is enabled, the service module line clock cannot be used to drive the PXM.
Ingress Cell Bus Slave FIFO reset in rare cases may not be synchronized to Cell Bus clock after switchcc.	Fixed FIFO reset logic in hardware (independent of software). This fixes the switchcc related problems.

Table 17 CLI Modified and New Commands

CLI	Change
dspcd	The dspcd command on the CESM model B card is modified to display "CESM8T1B" next to the Fab number. This can be used to differentiate between CESM model A and B cards. CLI changes The channels on a particular line can be either all MF (SF MF or ESF SF) or all non-mf (SF or ESF). The first connection type added on a particular line (mf/non-mf) decides the sync mode. The second connection must have the same cesCas type and so on.
addcon and xcnfcon	Two new values have been introduced for cesCas type to configure a channel with the multiframe option enabled. The values are ds1SfCasMF and ds1EsfCasMF. The channels on a particular line can be either all MF (SF MF or ESF SF) or all non-mf (SF or ESF). The first connection type added on a particular line (mf/non-mf) decides the sync mode. The second connection must have the same cesCas type, and so on.

PXM-UI-S3

Standard clocking in the MGX is supported with a built-in Stratum-4 clock source. For network applications that require a higher clock accuracy, the PXM-UI back card used with the Stratum-4 can be replaced with an optional PXM-UI-S3 back card that carries a Stratum-3 clock. This clock reference conforms to AT&T T1.5 and ITU G.824 specifications. A provision is also made for a Service Provider to connect an external clock source, if necessary.

The default clock is the internal Stratum-4. Pertinent CLI and MIB support are provided for Stratum-3 configuration. The PXM-UI-S3 back card is also recognized by the Cisco WAN Manager.

The Stratum-3 Clocking feature on the PXM-UI-S3 was introduced in Release 1.1.31, but support was removed in subsequent releases. It is being supported again in Release 1.2.00 and higher.

Hardware Changes

The new PXM-UI-S3 supports both T1 and E1 interfaces through an RJ-45/48 connector.

CLI

A new CLI **cnfclklevel** permits the user to set the STRATUM level desired.

Default Settings

VISM Release 2.2 on MGX 8250, MGX 8850 Release 1, and MGX8230 Switches supported on the PXM-UI-S3 or this release. The external clock interface cannot be used for Stratum 4 with UIS3 backcard.

Warning **If an External clock was configured to drive the node in Stratum-4 clocking with the old UI back card, and this UI card is replaced with the new PXM-UI-S3 back card, the Stratum-3 clocking must be explicitly configured on the node to continue using the External clock source. The following CLI's must be executed:**

*** cnfclklevel 3**
*** cnfextclk (with T1/E1 option)**

Problems Fixed in Release 1.2.00

The following is the list of problems fixed in the service module firmware and the Release 1.2.00 software. 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
CSCdr61328	Symptom: The delete bit is not set in the Async Lmi Packet when a connection is deleted. Conditions: The delete bit in the Annex-A/Annex-D has been masked hence the delete bit is not set in the Async Lmi Packet when a connection is deleted. Workaround: None. Further Explanation: Scenario: 1. Configure a port with PVC Asynchronous Status Report enable. 2. Add a PVC. 3. Delete the PVC. Problem: 1. The “Delete bit” in the PVC IE is not turned on.
CSCdr88604	Symptom: The alarm on SRM lines are not getting updated. Even when the line is deleted the alarms exist. Conditions: Workaround: Do **clralm** on the deleted line which has the alarms.
CSCds01403	Symptom: There is a mismatch in usage syntax in **dspportq**. Conditions: When execute the dspportq without parameters and with non-numeric characters. Workaround: None.
CSCds02030	Symptom: cnfcon and xcnfcon allows mcr value = 0, which is different from given syntax. Condition: When execute **cnfcon** and **xcnfcon** with mcr = 0. Workaround: None.

Bug ID	Description
CSCds05040	Symptom: The major alarm LED on the active and the standby PXM on MGX8850 are on, while the CLI commands do not show any indication of alarm. Conditions: If the SRM backcard in the redundant core card set is removed and reinserted, the alarms on the shelf will be clear, but the MAJ alarm LED alone will be left turned on. Workaround: Perform switchcc to clear the LED.
CSCds07944	Symptom: **clralmcnt** -ds3 does not clear the counters. Conditions: Workaround: Use **clralms** -ds3 Further Problem Description:
CSCds10270	Symptom: When a OC-12 feeder trunk is configured as 1+1 unidirectional mode, the PXM-622 OC-12 line on slot 7.1 of peartx40 MGX node did not have the option in specifying whether the “working” or “protection” line would be applied upon an external request such as “Manual Switch” and “Forced Switch”. This will prevent the capability to allow a user to change a request from “MS: W->P” to “FS: W->P” directly. The options allowed under the “switchapsln” command are listed as below: Conditions: With APS configured and trying to do switchapsln. Workaround: None Further Problem Description: None
CSCds21131	Symptom: The LineOOFCriteria on a PXM card with DS3 daughter card shows “fBitsOf16” when configured for “fBits3Of16”. Conditions: Applies to PXM with T3 trunk module. Workaround: None.

Bug ID	Description
CSCds26477	Symptom: Displays wrong Front card description for CESM T3/E3 cards. Conditions: For CESM T3/E3 card, Cisco View displays wrong description for front card description field. Workaround: No workaround.
CSCds27547	Symptom: The BERT test were running on two Service modules: one in the upper bay of the Popeye node and one in the lower bay of the popeye node but **dspbert** was displaying only one of them. Once the BERT was deleted on that slot, then only **dspbert** showed that the BERT is running on the other slot. Conditions: Workaround: Use **dspbert** <second slot#> to verify whether the BERT is running on the second slot or not.
CSCds29448	Symptom: The line status for disabled lines in line table shows inconsistent in database. Conditions: This happens when repeated queries are being done on the switch for line alarm_state from the CWM workstation. Workaround: Under investigation.
CSCds34186	Symptom: LMI is not functioning as per requirement for FUNI. Also, attempting to configure LMI for a FrFowarding port is not allowed but the error message is somewhat confusing. Conditions: Whenever LMI is configured for FUNI. Workaround: Under Investigation.
CSCds37553	Symptom: Port shows ILMI failure though there is no failure. Condition: Happens on 5.x firmware with version 5.0.12 Workaround: Card reset or softswitch clears this problem.

Bug ID	Description
CSCds38145	Symptom: Lmi debugging facilities to be ported from AXIS. Conditions: Not applicable Workaround: Not applicable Further Problem Description: The LMI debugging facilities provided in the FRSM_HS1 of AXIS is to be ported to POPEYE branch.
CSCds38166	Symptom: On PXM with Stratum-3 backcard (UI-S3), the external clock src, configured as E1, seems to revert to T1 after a switchcc. The **dspclkinfo** command output says it is a T1 clock. ***APPLIES to UI-S3 backcards _and_ the external clock source of E1 only. Conditions: No service impact. Display is wrong. The clock source is still external and E1. However, the workaround MUST be implemented to after every switchcc to make sure there is no further service impact after subsequent switchcc's. Workaround: After every switchcc, execute the command: cnfextclk 2 This will update the necessary fields, correct the dspclkinfo output, and prepare the shelf for subsequent swithcc operations. Further Problem Description: 1) The bug only effects Stratum-3 backcards. 1) The bug is not service effecting (display issue) 2) a workaround exists 3) there are indirect indicators that show the actual state of the clock source. Here is a brief description: Synopsis: CSCds38166 -- External clock cnf of E1 lost on switchcc In reality, the logic that reads the HW registers and displays the output of the dspclkinfo command is flawed. Root cause: Actually, what happens is, the field that determines the value of the clock input jack is used to determine whether the source is an E1 or a T1 clock. This works fine for Stratum-4 backcards, but for Stratum-3 backcards, the same input is used for T1 and E1, so the logic defaults the display to t1. The clock source is still external clock, and no service is impacted. Impact: After the first switchcc, there is no service impact. However, there is a danger for a subsequent switchback: Since once the field is wrongly updated to “t1”, on switchcc, the PXM that takes over will try to find a T1 clock input, and will fail, switching to internal clock. Workaround: After every switchcc, login to the shelf and do a:“cnfextclk 2". This will cause all fields to get updated correctly, and will enable a subsequent switchcc to not lose external E1 clock. This command will also straighten out the display of the command **dspclkinfo**.

Bug ID	Description
CSCds48471	Symptom: When an IMA port and ATM port are added in a AUSM card and ILMI is enabled on both, after ILMI failure clears, dspcd still shows Minor alarm with PORT ILMI fail. Condition: Happens on 5.0.13 AUSM firmware. Workaround: Execute find_out_port_fail_for_shelf_alarm under shellConn in AUSM. This will clear the problem.
CSCds58040	Symptom: Cannot login into 8250 using a newly created userid. Conditions: In 8250 releases 1.1.30 to 1.1.32, new user account is created with adduser CLI and subsequent xcnfuser CLI. Workaround: Create the new user account with adduser CLI. Then before the xcnfuser CLI is used for the newly created account, login using the new account from another terminal and logout.
CSCds67365	Symptom These bug is opened to resolve the warnings reported by a code coverage tool PREfix. The warnings reported include “uninitialized variables” etc. Hence the symptom for this bug is unknown. Conditions Normal working conditions Workaround None.
CSCds77223	Symptom: Changing the ingressq to the minimum value of 4510 on a FRSM card causes all traffic to be discarded. This occurred on 1.1.23 and 1.1.31. Conditions: Change of ingressq to the minimum value of 4510 Workaround: Changing the minimum ingressq to 4511 fixes the problem.
CSCds81198	Symptom: **dspcons** display on FRSMHS1B is not aligned starting from channel field Conditions: addcon on FRSMHS1B on POP1/1.1.32 then run dspcons Workaround: None.

Bug ID	Description
CSCds87189	Symptom RcvLOS count toggles between 0 and 252. Conditions When executing **addds1loop/delds1loop**. Workaround None. Further Problem Description None.
CSCds90673	Symptom: The card is in Bulk Mode Now as the SRM Line is in alarm the line/port/connection are also in alarm. Now if we reset the card, the line/connection are still in alarm as expected but the port i Conditions: When the card is put in Bulk Mode & then a reset card is done. Workaround: Problem under investigation.
CSCds91080	Symptoms; The command **addport** with wrong port type causes Data Bus Error Condition: The command **addport** on frsmhs1b using wrong port type (other value than 1 or 2 or 3). Workaround: Use only valid port type values (1, 2 & 3)
CSCdt05984	Symptom: The command **xcnfchan** does not display the setup options correctly Conditions: **xcnfchan** command on FRSM3T3 Workaround: None.
CSCdt18908	Symptom: The command **dspcons** on FRSM-2T3 increments ChanNumNextAvailable field and skips 1 channel when adding next connection. Conditions: Issue **addcon** command and monitor ChanNextNumAvailable field. Workaround: None.

Bug ID	Description
CSCdt19174	Symptom: **dspcons** increments ChanNextNumavailable field and hence addcon skips next channel number by one. Conditions: When adding connections and using **dspcons**. Workaround: None.
CSCdt19187	Symptom: **dspcons** or **dspchans** increments the LocalVpIdNextAvailable by 2. Conditions: When performing **dspcons/dspchans**. Workaround: None. Not Service Impacting.
CSCdt28566	Symptom: Frames are getting dropped due to port queue overflow without any frames being tagged on the egress direction. dspchanct for the channel would show increasing values for FramesDiscarded count and FramesByteDiscarded in the Tx direction. dspportcnt for the port would show increasing values for XmtFramesDiscXceedQDepth and XmtBytesDiscXceedQDepth in Tx direction. Conditions: This occurs when the Queue threshold for the port is configured very low. Workaround: use cnfegrq cli to configure the queue threshold accordingly. Note that in case of Ratio Based Servicing, the queue number of high priority is 1 and low priority is 2. In case of WFQ use the class of service index to refer to the queue number. Verify that the values are set properly using the shellConn command “eseQueInfoShow” This command takes two parameters, the port number and the queue number. After setting the threshold to proper values, reset the card to get the changes into effect. Further Problem Description: The **cnfegrq** does not update the cached copy of the port queue thresholds. Hence reset is necessary to get the configuration into effect. More over, dspegrq clis should be unblocked to make it available irrespective of the type of servicing algorithm used in the card. Also, the cnfegrq should be fixed to update the cached data structure and display proper queue numbers to use during different servicing algorithms.

Bug ID	Description
CSCdt40267	Symptom: CAC override is not sent to the CWM in the config upload file Condition: This parameter is not included in the config upload files. Workaround: No work around till the CAC override parameter is added to the config upload file. This has been added to the config upload file to fix this bug.
CSCdt43225	Symptom: Some channels are stuck in alarm. dspchancnt shows that the channels are receiving OAM AIS, but dspsarcnt does not show that OAM AIS is received. The far end is not sending OAM AIS either. Conditions: This problem happened when the CPE equipment was connected to the port. Workaround: Fail the port and recover it (by changing the port signalling).
CSCdt45615	Symptom: Misleading log message when back card is missing. Conditions: When Backcard is missing. Workaround: None.
CSCdt76729	Symptom: Remote Loopback operation is not blocked by CiscoView on a AUSM 8T1 line. There will be no traffic continuity on the line after a remote loopback is added and removed.Conditions: Add a remote loopback on AUSM8T1 and remove it. Data continuity is lost. Workaround: Workaround is after adding and removing the remote loopback on the AUSM line one has to add and remove a local loop on that line again through CiscoView
CSCdt87411	Symptom: With an MGX configured and connected to an External clock source it has been observed that on a switchcc the newly active PXM fails the external clock and switches to internal for up to 10 seconds. This is a problem as it causes errors on 64K unrestricted data calls and could also cause problems on high speed modem calls. Conditions: External clock configured on the node. Workaround: None.

Bug ID	Description
CSCdt90660	Symptom: The FRSM-VHS card goes to failed state and after Redundant card takes over all lines go into alarm. Conditions: Trunk errors on the BPX trunk through the failed card has connections routed through. Workaround: Reset the Failed VHS card.
CSCdu00363	Symptom: Connections shows invalid PCR after deleting links from ima grp. Conditions: When you have connections configured under an ima group & then you try to delete few links from the existing ima group by executing CLI: dellnsfmaimgrp. Workaround: None.
CSCdu02695	Symptom: When MGX is running on external clock and SM lines are set to local timing, we intermittently see slips on attached device interface even though both the attached device and the MGX show they are both taking clock from the same external source. Conditions: This happens when external clock is the current clock for the node. Workaround: If the external clock is disconnected and reconnected from the Active PXM UI card, the clock slips then stop and all is OK.
CSCdu03185	Symptom: Allowing more than expected CLP1 cells into the network by the policing function on VBR.2 (rt/nrt) connections on AUSM 8T1. Condition: This could potentially lead to network congestion. Workaround: Unknown.
CSCdu06781	Symptom: Back-to-back forced/manual (W->P followed by P->W) switch was permitted when the latter external user request is initiated from the remote end. Condition: Check for remote request of equal priority is not in place. Workaround: None.

Bug ID	Description
CSCdu12589	Symptom: The value of the varbind 'sonetLineCurrentStatus' is not consistent in the sonet line traps: 50108 (line alarm trap) and 50109 (line no alarm trap) Conditions: When the sonet line on PXM goes in and out of alarm Workaround: None. Further Problem Description: Till now, CWM was just looking at the value of this varbind 'sonetLineCurrentStatus' to decide whether to put the lines into alarm or not irrespective of the trap no. So because of this inconsistent definitions, sometimes it use to put the connections in alarm even after receiving 50109. Now it has been agreed that they will make this decision based on the trap no rather than the varbind value. Once that is done, the impact of this issue will become less.
CSCdu14185	Symptom: Unable to add RPM connection Conditions: Condition was caused by using CM and adding the ATM(RPM) to ATM(RPM) connection from mgx8250 to mgx8230 and the error was: Connection add request to PXM failed. Workaround: Using CM to add 3-segment connection: ATM(RPM) - ATM(RPM).
CSCdu17049	Symptom: On an MGX 8250 running version 1.1.25, if an addcon is done on an RPM and the remote end of the connection is on port 256 of a FRSM-2CT3, the command is rejected with the following message “Error:addcon:0:Connection add request to PXM failed”. If an attempt is made to add a connection from the RPM to a port numbered 255 or lower, the connection is added. If an attempt is made to add a connection from another module (e.g. AUSM) to port 256 on the FRSM, the connection is added. This problem is reproducible in version 1.1.32. Conditions: Connection is provisioned from RPM to FRSM-2CT3 with the port number on the FRSM as 256. Workaround: The current workaround is to use a port number less than 256 when adding connections between the FRSM-2CT3 and the RMP.

Bug ID	Description
CSCdu17838	Symptom: Line alarms clear after a card reset if lines are connected back to back on the same card. Conditions: Only when 2 lines on the same card are connected back to back. Workaround: Up the other side of the lines (and delete it).
CSCdu21136	Symptom: Channels do not come up to the active state. Conditions: After a softswitch is done between slots 22, and 30, then a switchcc. Workarounds: Do a second switchcc, and the channels come up to the active state. Increase the value of gu32TimeoutValue to 500 in shellConn on the AUSM before doing a switchcc. Further Problem Description: The problem happens because of management buffer depletion causing the IMA active trap to get lost, so the PXM never gets the information that the port has become active. The problem has been fixed by increasing the value of the alarm integration timer to 5 secs. This is done by changing the value of gu32TimeoutValue in the code..this timer prevents the channels from going into alarm for the duration of the timer even after the port fails. This is also a fix for CSCdv90898, but for that problem it might be required to increase the above value in shellconn depending on the cpe device.
CSCdu24006	Symptom: Non-Existing connections are displayed on AUSM cards Condition: MGX:8250 AUSM: 10.0.22 PXM 1.1.33Ak Workaround: None.

Bug ID	Description

CSCdu27251	Symptom:
	CESM card sometimes gets stuck in the failed state if a resetcd is done on it. The CESM may also go in the failed state if a cc is done to the card or the addcon command is executed on it.
	Conditions:
	This happens if the PXM has a UI-S3 back card and a switchcc is done. The shelf needs to be running on Stratum 3 level internal oscillator for this problem to occur.
	Workaround:
	If the shelf is running on Stratum 3 level internal oscillator and there is a switchcc, re-execute the following command on the new active card:
	cnfclklevel 3
	Further Problem Description:
	Please contact cisco TAC for a workaround referencing this bug id.
	CESM shows up as failed on the PXM. A shellConn command scmConnShow will not show a connection built to the failed card, e.g.
	`-> scmConnSho scmConnShow 6`
	`<SCM> Connection with standby PXM is up <SCM> Connection with SM 1 is up <SCM> Connection with SM 2 is up <SCM> Connection with SM 5 is up <SCM> Connection with SM 13 is up <SCM> Connection with SM 14 is up <SCM> Connection with SM 17 is up <SCM> Connection with SM 18 is up <SCM> Connection with SM 30 is up value = 1 = 0x1`
	Here we do not see the connection with SM 6 and this the card 6 (cesm) shows up as failed when you do a dspcds on the PXM.

CSCdu28072	Symptom: The command **dspcd** shows channel failure even though connections does not exists on the card. Conditions: This happens if before deleting the last connection on a card, that channel had an alarm on it. Workaround: Delete the port and line on which that channel was present and re-add the port/line back.
CSCdu29422	Symptom: Trap Manager doesn't get deleted from the standby Condition: XM Ver: 1.1.33Al Trap Managers are added, this gets updated on standby too. On Aging, they are deleted only on the Active Card and not on the Standby. (on switchcc, Trap Managers are seen as Enabled inspite on aging.) Workaround: Not Known.

Bug ID	Description
CSCdu29788	Symptom: Cannot configure line type on FRSM 2E3 other than G.751. Conditions: MGX:8250 PXM:1.1.33Al FRSM-2E3. Workaround: Under Investigation.
CSCdu34346	Condition: Issue the 'addred <primary> <secondary> 2' command. The primary and secondary RPM cards should have different (number or type) of backcards.This condition also applies to the case when each card has one backcard each, both of the same type, but in different slots. Result: The following warning is to be expected---- addred:Prim and Sec LineModule type Mismatch. Command will proceed for the card type.
CSCdu37806	Symptom: The command **xcnfln -lpb 3** is not supported on FRSM-HS2 Conditions: Always. Workaround: None.
CSCdu39150	Symptom: The command **dspchancnt 2000** gives an error message on FRSM-2CT3 Conditions: MGX 8230/8250 FRSM-VHS card has channel number 2000 enabled. Workaround: None.
CSCdu42117	Symptom: The **dsplog** has a message that says “Unable to config requested clock source because clock source 8 is unknown.” Conditions: This message will be seen when the clock source or the node changes. Workaround: None.

Bug ID	Description
CSCdu42490	Symptom: After MGX1 Power On boot, dspclkinfo shows StratumLevel = none. If the PXM1 back card is UI-S3, StratumLevel should be 3 or if the back card is UI, it should be 4. Condition: MGX1 Power On boot. Workaround: After MGX1 Power On boot, program: cnfclklevel = 3 for UI-S3 back card cnfclklevel = 4 for UI back card.
CSCdu43261	Symptom: AUSM does not display line alarm information correctly. Conditions: When the T1 interface is shut from the 3810. Workaround: None.
CSCdu43980	Symptom: The Qdepth range is shown incorrectly on AUSM card. Conditions: MGX:8250 AUSM 8T1/E1. Workaround: Use valid values from 33 to 16000.
CSCdu45583	Symptom: Slot #30 that was covering for Slot #28 rebooted. Conditions: After a switchcc on the PXM while secondary card is covering primary card. Need to have two IMA ports on this card connected with a cisco 3660 router. Workaround: Softswitch back to primary before **switchcc**. Further Problem Description: The problem only happens with IMA configuration.

Bug ID	Description
CSCdu51929	Symptom: After External Reference is lost, Stratum3 clock controller on UI-S3, PXM1 back card may not go into Holdover mode or Internal Free Run. Condition: Cable removed from CLK1 or external clock reference signal loss. Workaround for Rls up to and including 1.1.34: No need, if external reference is restored. Stratum3 clock controller will lock back to the external reference automatically. If external reference is lost permanently, clock controller should be reprogrammed to be Stratum4 by executing CLI command cnfclklevel=4 and selecting INBAND reference from a feeder trunk.
CSCdu54264	Symptom: The command **switchapsln s x** does not work. Conditions: APS configured. Workaround: None.
CSCdu54804	Symptom: Wrong ChanConnPCR value displayed after xcnfcha. Conditions: Always. Workaround: None.
CSCdu55116	Symptom: The command **dspchstats** will not work on a FRSM-VHSHS2 card. When executed a unknown command response is returned. The command is listed in the help menu. Conditions: Workaround: None.
CSCdu55166	Symptom: IMA lines removed from the IMA grp when slot #28 is covering for slot #30. Conditions: When a switchcc is performed. Workaround: Just restart the imagrp, and all lines come up as present.

Bug ID	Description
CSCdu58229	Symptom: APS switches working to protect on the BXM side but not on the PXM side. Conditions: BPX APS configured as Bidirectional, Nonrevertive and the remote node is Pop1 PXM with the same APS configuration. There is a following sequence of events: 1> Due to either a MANUAL switch or a FORCE switch, the protection line is the active line. 2> There is a fiber-cut/LOS on the receive side of protection line at the BPX end. Workaround: Perform APS lock on the PXM and do a APS clear.
CSCdu61609	Symptom: CiscoView shows inconsistent status for lines in 1:1 FRSM-2T3 in MGX8250 Conditions: 1:1 red. between cards Workaround: None. Further Problem Description: When FRSM-VHS cards are configured for 1:1 Hotstandby redundancy, the standby card's database will be in sync with the primary card's database. If the lines on the Active card are enabled, then snmpget for the same lines on the standby card returns them as enabled. The line LED's on the standby card will show no color, as the lines are not made ready to handle traffic since the card is in standby state.
CSCdu62613	Symptom: On BXM, clearing request APS Force W->P switches the active line to Working. Conditions: APS 1+1, Bidirectional nonrevertive. BXM connected to PXM. In Sequence Both nodes start on Protect with no requests On PXM, Manual P->W On BXM, Force W->P On BXM, Clear requests Workaround: Clear any request on PXM before issuing a request on the BXM.
CSCdu63090	Symptom: Input rate less than EIR but 'dspchancnt' shows frames discarded due to UPC. Also, 'RcvFramesDiscUPC' and 'FramesDiscXceedDEThresh' did not sum to the total discarded frames. Condition: Happened on FRSM-VHS cards when EIR > Input rate > PIR. Workaround: Unknown.

Bug ID	Description
CSCdu63686	Symptom: The portM32EgressQueThresh is not preset int the .CF file. This impacts CWM. Conditions: TFTP of .CF file. Workaround: None.
CSCdu66317	Symptom: Trap 50609 was received with a invalid failure code. Conditions: Unknown. Workaround: None Further Problem Description:
CSCdu66738	Symptom: Trap 50041 coreCardsPeerMismatch received with invalid shelfSlotNum. Conditions: When there is core card mismatch. Workaround: None.
CSCdu67926	Symptom: The traps 50231 and 50230 are received with incorrect varbind ids but the correct information for the varbind listLinksPresentInImaGrp, the varbind listLinksInImaGrp is sent instead. Conditions: These traps are always sent with the wrong varbinds, but the information contained does represent the correct varbind i.e even though the varbind listLinksInImaGrp is being sent it actually contains the list of links present in the ima group at present. Workaround: None.
CSCdu67938	Symptom: Trap 50350: LineEnabled received with an extra varbind. Conditions: A line was enabled on an AUSM card running 10.0.11 on a node running PXM 1.1.34. Workaround: None.

Bug ID	Description
CSCdu68044	Symptom: ds1 stays in alarm along with the ports on it. Conditions: Adding softloop on ds1 w/o soft/hard loop on ds3 holds ds1 & ports in alarm. Workaround: None Further Problem Description: After Executing 'addlnloop <ds1>' without soft/hard loop on ds3 on a FRSMVHS-2CT3 card, the ds1 stays in alarm along with the ports on it. Executing 'addds3loop <ds3>' clears the port alarms but not the ds1. Ds1 and Ds3 Loop should be independent of each other. We are keeping addition/deletion of ds1 loop independent of the state of the ds3 loop.
CSCdu68068	Symptom: CLI commands display the same info for ratio queue vs. weighted fair. Condition: On both the dspegrq, and the cnfegrq commands. Workaround: None.
CSCdu68073	Symptom: The **xcnfalmcnt** command accepts any parameters and does not display any error messages. Conditions: When **xcnfalmcnt** command is executed with invalid parameters. Workaround: None.
CSCdu68402	Symptom: Conditions: Workaround: Further Description: This is a bug opened to resolve all errors found by running the PREFIX utility on the MGXPXM12 baseline

Bug ID	Description
CSCdu72190	Symptom: Active PXM reset due to 'Software Error Reset'. Standby PXM took over. There is no service impact. Conditions: When CiscoView is running and SRM T3 lines are enabled. The time it takes for the PXM to reset depends on the number of instances of CiscoView running. The PXM reset happens approximately every 4 hours when running more than 80 instances of CiscoView. Workaround: None.
CSCdu74747	Symptom: Sometimes, while adding a new connection, ports are not showing up in the selection window properly in spite of their being present in the database. For example if the database has 4 ports for a card and shelf, it shows up only two of them or it does not show any. Conditions: It is intermittent and highly random. Workaround: Hit Cancel button so that the new connection window disappears. And restart the configure new connection window from connection manager gui. On the MGX side the problem is not seen if a physical(metallic) loopback is added instead of the soft loopback (through addlnloop).
CSCdu75928	Symptom: PXM E1 ext clock sync not working without the Daughter card. Conditions: In the absence of the Daughter card or Back card, the External E1 clock will not sync and the clock status update would fail. Workaround: None.
CSCdu76964	Symptom: When the CESM8T1E1 is in standby mode, it logs messages "Invalid message received from ACRED 3" in the log file. Conditions: Occurs when the SM is in standby mode. Workaround: None.

Bug ID	Description
CSCdu76974	Symptom: When the SM is in standby mode, it logs messages "Invalid message received from ACRED 3" in the log file. Conditions: Occurs when the SM is in standby mode. Workaround: None.
CSCdu76975	Symptom: When the SM is in standby mode, it logs messages "Invalid message received from ACRED 3" in the log file. Conditions: Occurs when the SM is in standby mode. Workaround: None.
CSCdu77367	Symptom: Conditions: Workaround: Before using the connections, it is advised to do node resync with the feeder nodes first. But if the connections are bouncing, this manual node resync may not help either.
CSCdu77367	Symptom: Conditions: Workaround: Before using the connections, it is advised to do node resync with the feeder nodes first. But if the connections are bouncing, this manual node resync may not help either.
CSCdu79008	Symptom: T1 alarm counters are missing. Conditions: FRSM-8T1E1. Workaround: None.
CSCdu83011	Symptom: Misleading message when trying to do softswitch. a warning message of 'possible red table corruption' might lead to confusion. Conditions: When redundancy card is cover card A and trying to softswitch from card B to redundant card. Workaround: None. No actual impact.

Bug ID	Description
CSCdu84628	Symptom: In 1+1 bidirectional mode, local manual switch preempts remote manual switch request. Conditions: Workaround: None.
CSCdu84643	Symptom: In 1+1 uni/bidirectional APS, forced switch of p->w preempts forced switch of w->p Conditions: Workaround: None.
CSCdu85051	Symptom: In 1+1 bidirectional APS, lockout of protection not blocked by remote lockout of protection. Conditions: Workaround: None.
CSCdu85063	Symptom: In 1+1 uni/bidirectional APS, manual switch of p->w preempts manual switch of w->p. Conditions: Workaround: None.
CSCdu86599	Symptom: On a 8 port CESM (AX-CESM-8T1) for the MGX8220, it is not possible to configure a line for ESF framing with AMI line coding. This is a valid configuration, and is possible on a 4 port CESM. Conditions: The problem is observed when configuring a T1 line. Example: xcnfln -ds1 1 -e 3 -lt 1 -lc 4 This appears to effect all current versions (at least up to 5.0.14) of 8 port CESM cards. 4 port cards operate as desired. Workaround: Only known workaround is to use a different configuration or 4 port CESMs.

Bug ID	Description
CSCdu88301	Symptom: On an FRSM-HS1/B card, when traffic in excess of CIR is pumped from the network side, it causes Egress buffer overflow, which in turn causes the card to reset. Egress data buffer overflow can be checked by using the shellConn command SarShow on the FRSM-HS1/B. Conditions: This happens only on the FRSM-HS1/B version 10.0.22 . Workaround: An upgrade of the FRSM-HS1/B firmware to 10.0.23.
CSCdu88914	Symptom: Not able to add channel with a error 'no more lcn available'. Conditions: Corruption in resource partition type Workaround: Use shell command to force update from service module to PXM.
CSCdv02276	Symptom: Primary card in failed state after softswitch Conditions: Setup: PXM is running 1.1.34 2 AUSM's in 1:N Redundancy & running 10.0.11 version Now we upgrade the AUSM to 10.0.22 by doing a softswitch twice. Problem: When doing the softswitch from secondary to primary when we do dspred we can see that the primary gets stuck in failed state. Workaround: Reset the secondary card before the first softswitch.

Bug ID	Description
CSCdv02328	Symptom **dspchans**, **dspifs** show empty table if an abort is done in between upgrade Condition: Perform an install of 1.1.30 newrev 1.1.30 abort 1.1.30 At this point we lose ifs and chans Workaround: Here is the workaround for this problem, this should be applied only if an abort is required after the newrev stage during the upgrade. Before executing the abort command execute the following commands: 1. Go to sh in the Active PXM 2. smCardMibVer = 21 /* Change the MIB version from 23 (1.1.30) to 21 (1.1.22 and above) */ 3. saveDBToArchive 7, 0 /* Create the archive file for slot 7 (VSM) with the changed MIB Version) 4. upLoadBram 7, 7 /* Write the newly created archive file to the Active and Standby disk database */ 5. spmdsparchinfo 7 (on Active PXM and Standby PXM) /* Verify that the MIB version has been changed to 21 */ 6. Proceed with abort. If the same shelf is upgrade later on to 1.1.30. After the upgrade is fully completed, execute the following to do cleanup. Execute the following after the shelf is upgraded to 1.1.30. 1. From sh in the Active PXM. 2. saveDBToArchive 7, 0 3. upLoadBram 7, 7 Further Description: The VSM module in the PXM goes into a mismatch state once we abort at this stage. This causes the SMs to lose ifs and chans (**dspifs** and **dspchans**)

Bug ID	Description

CSCdv03072	Symptom: **dspclkinfo**
	`****** Clock HW registers ******** SEL_T1 = t1 SEL100 = ON SEL120 = ON SEL75 = ON NOEXTCLK = OFF`
	`priMuxClockSource = INBAND_CLK1 prevPriMuxClockSource = INBAND_CLK1`
	`primaryInbandClockSourceLineNum = 1 secMuxClockSource = INTERNAL_OSC`
	`prevSecMuxClockSource = none secondaryInbandClockSourceLineNumber = 1`
	`currentClockSetReq = primary currentClockHwStat = primary StratumLevel = STRATUM4 PreviousClockHwStat = primary extClockPresent = Yes`
	`extClkConnectorType = RJ45 extClkSrcImpedance = 100 Ohms Internal Clock Status=255, Primary Clock Status=0`
	`Secondary Clock Status=0, Last inband Clock State=0 last Inband Clock state= 0, Last External Clock Present = 2`
	`h1a.1.7.PXM.a > dspclksrc Interface Clock Type Clock Source`
	`--------- ---------- ------------ 7.1 PRI INTERFACE`
	`h1a.1.7.PXM.a > cnfclklevel 3`
	`h1a.1.7.PXM.a > dspclkinfo`
	`****** Clock HW registers ******** SEL_T1 = t1 SEL100 = ON SEL120 = ON SEL75 = ON NOEXTCLK = OFF`
	`priMuxClockSource = INBAND_CLK1 prevPriMuxClockSource = INBAND_CLK1`
	`primaryInbandClockSourceLineNum = 1 secMuxClockSource = INTERNAL_OSC`
	`prevSecMuxClockSource = none secondaryInbandClockSourceLineNumber = 1`
	`currentClockSetReq = primary currentClockHwStat = primary StratumLevel = STRATUM4 PreviousClockHwStat = primary extClockPresent = Yes`
	`extClkConnectorType = RJ45 extClkSrcImpedance = 100 Ohms Internal Clock Status=255, Primary Clock Status=0`
	`Secondary Clock Status=0, Last inband Clock State=0 last Inband Clock state= 0, Last External Clock Present = 2 :wq`
	Conditions:
	Workaround:

CSCdv04213	Symptom: 1. Both primary and secondary cards in active state. 2. Secondary card locked. Unable to cc to the card. 3. Line on CESM T3 generates alarms. Conditions: To recreate the problem:' 1. softswitch' from primary(active) to secondary(stdby) 2. Then, reset active (secondary). Workaround: Unknown.
CSCdv08621	Symptom: IP connectivity to the MGX1 node stops working after sometime. Conditions: IP connectivity is via a PVC configured between an UNI port and 7.34 on the PXM. Workaround: Delete the connection and readd it.

Bug ID	Description
CSCdv09537	Symptom: R_AM on protection line Condition: Create LOS on protection, clear it and then create LOS on working. Workaround:
CSCdv13383	Symptom: Protection line status shows OK while remote SF condition on protection line exists. Condition: 1+1 bidirectional APS configured. Workaround: None.
CSCdv13391	Symptom: Late local equal priority request is selected in generating TxK1 after remote equal priority request is being acknowledged by PXM. Condition: 1+1 bidirectional APS configured. Workaround: None.
CSCdv13400	Symptom: PXM selects protection line and shows CH_MIS even though there is SF condition on remote BPX. Condition: 1+1 bidirectional APS configured. Workaround: None.
CSCdv15625	Symptom: When we do **addlnloop** on the srme card the alarms are still there. Basically the command does not work. Conditions: *)add line on srme oc3 card, **addlnlloop** on the srme line *)add a line in one of the SM's say FRSM on slot 1 line 1 *) addlink between slot1 line 1 to srme line. we can see that the line is still in alarm actually it should not be in alarm Workaround: The problem is because of hardware limitation. Supermapper chip has a version 2.0 which does not support the addlnloop. The newer version i.e. 2.1 or above supports **addlnloop** command. If we upgrade the supermapper to newer version then we should not see this problem.

Bug ID	Description
CSCdv25524	Symptom: The SNMP agent receives values 15, 16 and 17 for function module state which are not defined in the MIB. Conditions: When the card goes to CardInit state while booting up, the SRM card fails. Workaround: None. Further Problem Description: After the fix, state representing 15 and 16 have been removed. 17 has been defined as cardinit. That way when the old PXM image sends 17, the new SNMP agent will understand it properly.
CSCdv26309	Symptom: Connection configured on FRSM 8E1 on an MGX8250 unabled to be deleted due to error "Port does not exist". Port is well configured and has other connections already configured and passing traffic. Also further connections cannot be added to he logical port 248 as same response is returned. Connections successfully added and deleted on other logical ports of the same card without problem/errs. Conditions: `MGX8250 dspfwrevs Card Type Date Time Size Version File Name ----------- ------------------- -------- ------------------ ------------------ PXM1 08/02/2001 18:10:22 1301128 1.1.32 pxm_bkup_1.1.32.fw PXM1 08/02/2001 18:29:20 2241996 1.1.32 pxm_1.1.32.fw FRSM-8T1E1 08/02/2001 20:48:20 297988 FR8_BT_1.0.02 sm35.bt FRSM-8T1E1 08/02/2001 20:55:46 821064 10.0.21 sm35.fw` Workaround: No workaround found, switchcc had no effect.
CSCdv26571	Symptoms: communication between PXM and all RPM in the shelf is very slow. "sho ipc queue" shows that the queue is full. Conditions: cc to RPM using two parallel sessions and run extended ping on each of the session. Workaround: Run extended pings from telnet sessions instead of cc to the card
CSCdv29944	Symptom: Link addition on standby card successful. Condition: Add redundant back card and then add link on this. Workaround: None

Bug ID	Description
CSCdv31953	Symptom: Unable to collect all stat types from CESM Conditions: Customer enabled all stat types on CESM. Connection Stats for CESM(CE Connection) Object SubObjectId Statid Stat Description(as shown in GUI) 0 10 16 Seconds In Service 0 10 58 AAL1 Sequence Mismatch 0 10 60 Receive Bytes Discarded 0 10 62 Rx Buffer Underflows 0 10 63 Rx Buffer Overflows 0 10 64 HCS Correctable Error 0 10 65 Loss of Pointer 0 10 66 Loss of Cell Delineation 0 10 69 Tx Bytes Discarded-Q-Overflow 0 10 70 Tx Cells Inserted-Q-Underflow 0 10 71 Total Cells Tx to Line 0 10 72 Total Cells Rx to Line But only be able to get stats on AAL1 Sequence Mismatch HCS Correctable Error Loss of Cell Delineation Total Cells Tx to Line Total Cells Rx to Line Workaround: Under Investigation. Further Problem Description: Under Investigation.
CSCdv33089	Symptom: Link/Line configuration is not deleted on srme after **clrsrmcnf**. Condition: Configure link. Workaround: None.
CSCdv35890	Symptom: SRM-E stat files are bad intermittently. Condition: The node is synced up and used integrated SCM for collecting; only SRM-E Sonet line stats are enabled. Workaround: Not known.

Bug ID	Description
CSCdv37960	Symptom: PXM locks onto a bad clock added as a primary clock. Conditions: When PXM-UI-S3 back-card is used and clock level is Stratum 3. Workaround: Use the internal oscillator of the UI-S3 back card.
CSCdv39324	Symptom: When FRSM 8e1-t1 with 10.0.20 have been provisioned or added without specifying a channel service type the default is blank. IF the card is upgraded to 10.0.22 the channels are automatically put into CBR queue and if new channels are provisioned the default service type is CBR. This causes problems with enabling foresight on these connections. Conditions: If connections have been added on the FRSM with a default chanservtype. And the card is then upgraded. This default is changed to CBR rather than null. This causes problems with enabling foresight as it believes its a none ABR service. Code affected is when upgrading MGX8250 FRSM code from 10.0.20 to 10.0.22. Workaround: None, unless chanservtype has already been selected other than default to ABR servicetype.
CSCdv39679	Symptom: PXM does not try to lock onto the secondary clock. Conditions: When PXM-UI-S3 back-card is used and clock level is Stratum 3 and primary clock has failed for some reason. Workaround: Use the primary clock or the internal oscillator of the UI-S3 back card.
CSCdv43539	Symptom: Card not in alarm when line is. Conditions: One or more lines on V.35 interface are in major alarm. Workaround: Issue IntegrateCardAlarm(2,256,37) from shellConn.

Bug ID	Description
CSCdv45481	Symptom: Occurs when **dsplns**, **dspalm**, **dspcd** is used. Conditions: 1. When the line moves from major alarm to minor alarm, dspalm indicates the line in the appropriate alarm, but dspcd will still be at major alarm and does not get updated to minor alarm. Vice versa is also true. 2. When delds3loop is executed on a line which does not have a loop configured, card alarm is cleared if the alarm was because of this line and even though the line is still in alarm. Workaround: None.
CSCdv47050	Symptom: The command **xcnfalm** syntax shows -ds1 <line> instead of -x21 <line>. Conditions: Get help on **xcnfalm** command. Workaround: None.
CSCdv47076	Symptom: The command **xcnfport** syntax doesn't show -sig option. Condition: Get help on **xcnfport**. Workaround: None.
CSCdv47086	Symptom: The command **xcnfport** syntax description shows unwanted options Conditions: Issuing **xcnfport** with no or illegal parameters Workaround: None.
CSCdv48190	Symptom: Connection doesn't go into failed state on PXM upon subinterface admin shutdown Condition: When the subinterface is administratively shutdown, the connection under that subinterfaces should go into fail state or at least a failure trap should be sent to indicate no routing can take place. CWM was not getting this Failure trap. Workaround: None.

Bug ID	Description
CSCdv49617	Symptom: Output of **dspapsln** is not aligned between the header and APS line status. Conditions: Workaround: None.
CSCdv51362	Symptom: Not able to configure bert for lines greater than 8. Condition: Unknown. Workaround: Unknown.
CSCdv53166	Symptom: The clock status is inconsistent between dspcurclk and **dspclkinfo**. Conditions: When all of the following are true: 1. PXM-UI-S3 back-card is used and clock level is Stratum 3. 2. There is a clock-switch from primary due to an bad (incorrect frequency) clock source. 3. There is no Loss Of Action on primary clock interface. Workaround: Use **dspclkinfo** to find the status of the clock.
CSCdv53181	Symptom: PXM does not track a good SERVICE MODULE interface clock. Conditions: When PXM-UI-S3 back-card is used and clock level is Stratum 3 and the active clock source is SERVICE MODULE. Workaround: Use the external clock source, inband or internal oscillator of the UI-S3 back card.

Bug ID	Description
CSCdv56345	Symptom: With many ports added on a FRSM-VHS (FRSM-2CT3), addport may fail due to insufficient hardware resources for further ports. However, the display does not show this as the reason. Conditions: On the FRSM-VHS (e.g. FRSM-2CT3) there is a limit of 128 ports for each of - ds1 1-14,43-56 - ds1 15-42 When adding a port that exceeds this limit, the error message does not accurately indicate the cause of the failure. Workaround: There is no workaround, this is a limitation of the hardware. The bug is that the display does not give an appropriate error message.
CSCdv69785	Symptom: Remote Loopback operation is not blocked by CiscoView on a AUSM 8T1 line while the line is being added. Conditions: Add a remote loopback on AUSM8T1, the remote loopback takes effect inspite of an error message. Workaround: None.
CSCdv73784	Symptom: PXM reset due to LOG task suspension Conditions: Unknown. Workaround: None. Standby PXM will take over and become active.
CSCdv76611	Symptom: Line with soft loop does not go into minor alarm. Conditions: Line is added on FRSM-HS2/B using CV with a soft loop. Line is added but does not go into a minor alarms. If the line is modified using CV then it goes into minor alarm. Workaround: Modify the line using Cisco View OR add line using CLI.

Bug ID	Description
CSCdv76770	Symptom: PXM has a corrupted file system and the card gets reset sometimes Conditions: When CWM does a **saveallcnf** and then renames the file to the same file using different fashion Workaround: Switchcc to the standby PXM and format the corrupted PXM. Further Problem Description: Customer is using the CWM saveallcnf script to save config. However, due to the vxwork rename limitation. The script will trigger the problem by renaming the file to the same file. Hence, the PXM file system is corrupted and needs to be formatted to clean up.
CSCdv85789	Symptom: Voice calls dropped on a softswitch on ausm. Conditions: This happens mostly for channels on an IMA group. Workaround: None Further Problem Description: This happens because the IMA groups restart on a softswitch as the t1 lines are reprogrammed for the standby going active.
CSCdw07261	Symptom: Channel alarms are not propagated after deleting one end of the connection. Conditions: CESM-T3/E3 PXM:1.1.41Ac. Workaround: Under Investigation.
CSCdw07565	Symptom: PXM OC-3 ports (UNI) do not go into alarm when the line is fed Sonet PATH AIS from tester. Condition: HP Tester is connected to PXM-1 OC-3 port and Sonet AIS-P cells are injected. Line reports alarm, but, port remains active. Workaround: Unknown.

Related Documentation

Note that for Release 1.2.00, the product documents (Command Reference, Overview, and Installation and Configuration Guides) were not updated. Use the Release 1.1.3 documents in addition to the *Release Notes for Cisco WAN MGX 8850, MGX 8230, and MGX 8250 Software Version 1.2.00*.

Product documentation for MGX 8850 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/1_1_31/index.htm

Product documentation for MGX 8230 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8230/1_1_31/index.htm

Product documentation for MGX 8250 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8250/1_1_31/index.htm

Product documentation for VISM 2.2 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/vism22
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8250/vism22
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The following sections explain how to obtain documentation from Cisco Systems.

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

http://www.cisco.com

Translated documentation is available at the following URL:

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

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

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- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:

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

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

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Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

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http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

http://www.cisco.com/register/

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

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

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

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

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.

This document is to be used in conjunction with the Cisco WAN Switching MGX 8850 Release 1, MGX 8250, and MGX 8230 publications.