



# Release Notes for Cisco MGX 8230, MGX 8250, and MGX 8850 (PXM1) Software Version 1.3.16

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## About This Release

Release 1.3.16 supports all features introduced in prior releases and contains the new features listed in the [“New Features Introduced in Release 1.3.16”](#) section on page 4. For a list of all open and resolved caveats in this release, see the [“Open Caveats”](#) section on page 19.



### Note

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To verify that you have the latest version of Cisco IOS required to support the new features included in this release, please check Cisco IOS availability status at [Cisco.com](http://Cisco.com).

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For Release 1.3.16, the user documentation (command reference, overview, and installation and configuration guides) were not updated. Use the existing documents in addition to this release note.

Product documentation for MGX 8850 (PXM1) is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/index.htm>

Product documentation for MGX 8250 is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8250/index.htm>

Product documentation for MGX 8230 is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8230/index.htm>

Product documentation for VISM is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/mgx8850/>

Product documentation for RPM 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>

Product documentation for AUSM (and ATM services on MPSM 8-port T1/E1) is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/ausm/index.htm>

Product documentation for CESM (and circuit emulation services on MPSM 8-port T1/E1) is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/cesm/index.htm>

Product documentation for FRSM (and Frame Relay services on MPSM 8-port T1/E1) is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/frsm/index.htm>

Product documentation for MPSM 8T1/E1 hardware is available at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/hwdoc/hig/index.htm>

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## New Features Introduced in Release 1.3.16

This section lists features introduced in this release:

- [MPSM Licensing Changes, page 4](#)
- [PXM Online Diagnostic Test Improvements, page 4](#)
- [Self-test Support on Standby LSMs, page 5](#)
- [Improved Database Sync-up, page 5](#)

### MPSM Licensing Changes

This release enforces licenses through sales and support, rather than through software locks. You must purchase licenses for the services and features that you plan to use on each Multiprotocol Service Module (MPSM) card.

For more information, see *Cisco MGX 8800/8900 Series Software Configuration Guide*.

### PXM Online Diagnostic Test Improvements

This enhancement identifies hard disk errors and memory depletion of the DRAM regardless of the online diagnostic configuration. With this enhancement, the controller card is constantly validating the read/write errors on the hard disk and the fragmentation level on the DRAM by verifying the maximum block size available.

As part of enhancement, a predefined critical threshold (15000 \* 2 bytes) is set for the minimum block size required for normal system operation.

## Self-test Support on Standby LSMs

The self-test feature on a service module detects errors on the service module hardware by running certain predefined tests at regular intervals. With this release, self-tests are now available on both active and standby service modules.

## Improved Database Sync-up

When a standby PXM fails and gets stuck in the **CardInit** state (either due to **DBM sync**, **DISK sync**, or **FILE sync** not in the complete state) the PXM in **CardInit** state is reset for a maximum of three tries. After that, if the PXM does not come to the standby state, it is set to the failed state.

## Features Introduced in Release 1.3.14

None.

## Features Introduced in Release 1.3.12

Release 1.3.12 supports all of the features introduced in prior releases and introduces the feature listed in this section.

This release includes PER 12649, which resolves caveats CSCeh47077 and CSCeh18093.

## FRSM-VHS Configurable Burst Speed

In Release 1.3.12 you can configure the burst speed for FST ABR connections on FRSM-VHS cards.

The following new CLIs are introduced in this release:

- **cnffstburst**
- **dspfstburst**

### cnffstburst

To configure the FST burst speed, use the **cnffstburst** command.

```
cnffstburst <fstburstspeed>
```

Replace <fstburstspeed> with a value in the range 1536000–155520000 bps. The default is 155520000.

[Example 1](#) shows the syntax for configuring the burst speed as 1666671.

#### *Example 1* **cnffstburst** Command

```
pxm1.1.3.VHSHS2B.a > cnffstburst 1666671
```

```
pxm1.1.3.VHSHS2B.a >
```

## dspfstburst

To display the FST burst speed value, use the **dspfstburst** command.

### **dspfstburst**

This command does not have any arguments.

[Example 2](#) shows the syntax for displaying the burst rate in [Example 1](#).

#### *Example 2* **dspfstburst Command**

```
pxm1.1.3.VSHS2B.a > dspfstburst
SAR Max Burst Speed For FST ABR : 1666671
```

## Features Introduced in Release 1.3.11

None.

## Features Introduced in Release 1.3.10

Release 1.3.10 supports all features introduced in prior releases. (Refer to the 1.2.21 release notes for features introduced in the 1.2 baseline)

## MPSM 8-port T1/E1 Service Module and License Manager Support

Release 1.3.10 introduces support for the MPSM-8-T1E1. The MPSM-8-T1E1 (Multiprotocol Service Module) is a single-height replacement card for the AUSM-8T1/E1, FRSM-8T1/E1, and CESM-8T1/E1 narrowband service modules, and supports the back cards each of these service modules supports. The MPSM-8-T1E1 card has any service, any card (ASAC) capability. For more information on MPSM 8T1/E1 hardware, refer to the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/hwdoc/hig/index.htm>

Release 1.3.10 also introduces support for the MPSM-8-T1E1 License Manager which is required to turn on special licensed features of the MPSM card. The MPSM card can be licensed to provide the services of either a FRSM, AUSM or CESM service module on one MPSM-8-T1E1 card.

For information specific to License Manager configuration on the MPSM-8-T1E1 card in PXM1-based MGX switches, see the [“MPSM 8-port T1/E1 Licensing Overview”](#) section on page 47.

## Standard Available Bit Rate (ABR) Mapping Changes

According to ATM forum's TM4.0, ABR connections should have zero in the CLP and EFCI bits in the ATM cell. To follow this recommendation all Frame Relay cards reset the CLP and EFCI bits of all outgoing ATM cells to zero irrespective of the value of the DE and FECN bits of the incoming frames.

Release 1.3.10 introduces support for enabling or disabling standard ABR options at the port level, instead of the card level by using the CLI command **cnfportstdabrctrl** or **xcnfport**.

The resource management (RM) cell generation options will remain the same for the port level as they were for the card level. These options are:

1. No RM cell generation, no mapping
2. No RM cell generation, mapping
3. RM cell generation, no mapping
4. RM cell generation, mapping

In releases prior to 1.3.10, RM cell generation and DE --> CLP, FECN --> EFCI mapping control was available as a FRSM-8T1E1 card level feature for standard ABR connections. Users enabled or disabled RM cell generation and mapping through the command **cnfstadbctrl**. Once this command was enabled, all of the standard ABR connections on the card behaved in the same way. With release 1.3.10 and the introduction of port-based RM cell generation and DE --> CLP, FECN --> EFCI mapping control configuration, the CLI command **cnfstadbctrl** has been made obsolete.

## Unique Device Identifier

With Release 1.3.10 Cisco Multi Protocol Service Module products have an electronically retrievable identifier. This identifier is called the Unique Device Identifier (UDI) and consists of the Product Identifier (PID), the Version Identifier (VID), and the hardware Serial Number (SN). The UDI is programmed at the factory and is stored in non-volatile memory.

The UDI is used to identify specific equipment for inventory management, asset management, entitlement, business operations management, network implementation, and network management.

In network management, the UDI enables network administrators to easily track specific components in their network.

You can display the UDI by issuing the **show inventory** command from the command line interface (CLI). The **show inventory** command displays the information shown in [Table 1](#).

**Table 1** *Show Inventory Command Display Output*

Field	Description
NAME:	The name or number of the component set by Cisco. For example, "1" or "11".
DESCR:	The description of the component as defined by Cisco. For example, "Cisco MGX8850, 32 Slot chassis".
PID:	The product identifier – the model name of the device as defined by Cisco. For example, "MGX8850" or "AXSM-4-622".
VID:	The version identifier – the hardware version number defined by Cisco. For example, "000".
SN:	The hardware serial number inscribed at the factory. For example, "SN1234567890".

The following example shows the **show inventory** command and its output:

```
MGX8850.8.PXM.a > show inventory

NAME: "1"           , DESCR: "Cisco MGX8850 Backplane"
PID: MGX8850       , VID: 000, SN: SN1234567890

NAME: "1"           , DESCR: "Double-height ATM SM, 8 T1/E1"
```

PID: MPSM-8-T1E1 , VID: 000, SN: SN1234567890  
MGX8850.8.PXM.a >

## Features Introduced in Release 1.3.00

Release 1.3.00 supports all features introduced in prior releases. Refer to the 1.2.21 release notes for features introduced in the 1.2 baseline.

### SRME/B Service Module

Release 1.3.00 introduces the SRME/B. The SRME/B adds T3/E3 interfaces to the current SRME which already supported OC-3 and STM-1 Electrical interfaces. This new SRME/B service module supports T3/E3, OC-3 and STM-1 Electrical interfaces with the same front card. Bulk distribution to all 24 slots is now possible for the 8230/8250/8850 PXM1-based platforms.

SRME/B hardware information is found here:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/hwdoc/hig/index.htm>

SRME/B configuration information is found here:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/scg/index.htm>

SRME/B command information is found here:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/cmdref/index.htm>

### SNTP Support

In prior releases, SNTP support was only for the PXM45-based nodes. This feature allows all PXM1-based nodes to use SNTP or Simple Network Time Protocol to synchronize clocks within an internetwork of PXM1-based nodes. SNTP provides a comprehensive mechanism to access national time sources and adjust each nodes' clock to that time source. CWM support for SNTP on PXM1-based nodes is the same mechanism as supported by CWM on the MGX 8800 PXM45-based switches in prior releases.

SNTP configuration material can be found here:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/scg/index.htm>

SNTP command information is found here:

<http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850px45/re15/cmdref/index.htm>

### SSH Support

Release 1.3.00 introduces a Secure Remote Terminal Interface feature. This feature provides an SSH session whenever someone accesses into the PXM1-based node via the LAN port using telnet.

You configure this feature using the **cnftelnetenbl** CLI command. This command allows you to configure telnet access to the PXM1-based node. By default, telnet server access is enabled. When you disable telnet access remote, use the SSH protocol to login to the PXM1-based node.

## MIB Changes in Release 1.3.00

Release 1.3.00 introduces support for the entity MIB. The entity MIB allows a single agent to represent multiple logical entities. The entity MIB can be used to represent physical entities in a system (node, switch, and so forth). These physical entities include chassis, slots, modules, backplanes, power supplies, fans, sensors, and so forth.

## Features Not Supported in This Release

The following features are not supported in this release:

- Layer 2 support as an AutoRoute routing node
- Interworking with Cisco 3810

## Service Module Redundancy Support

MGX 8850 (PXM1) provides high-speed native ATM interfaces, which can be configured as ATM UNI ports or trunks. [Table 2](#) contains redundancy support information for service modules.

**Table 2** 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

**Table 2** Service Module Redundancy Support (continued)

Front Card Model #	Redundancy Supported
MGX-VISM-8E1	1:N redundancy
MGX-VISM-PR-8T1	1:N redundancy
MGX-VISM-PR-8E1	1:N redundancy

**Note** Support for 1:N redundancy is provided in conjunction with an MGX-SRM-3T3<sup>1</sup> card, an MGX-SRME<sup>2</sup> or an MGX-SRME/B<sup>3</sup> card.

1. SRM-3T3 cards only support bulk distribution for T1 lines.
2. Bulk distribution is supported for T1 and E1 lines using the SRME card.
3. The SRME/B card supports bulk distribution for T1 and E1 lines on the same backcards. The SRME card supports and adds support for bulk distribution for T3 lines on the MGX-BNC-3T3-M back card.

## Network Management Features

Network management features are detailed in the *CWM Release 15 Release Notes* at: <http://www.cisco.com/univercd/cc/td/doc/product/wanbu/svplus/index.htm>

## Port/Connection Limits

Connection limits can vary. [Table 3](#) shows total connections per card and 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 port, that port supports 560 connections. The other port, which is not configured for LMI, can support 1000 connections, for a total of 1560 connections.

Overall, connections per shelf are limited to 16,000 connections.

**Table 3** 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

Table 3 Port/Connection Limits (continued)

Card Type	Back Card(s)	Conns./Card	Physical Ports	Logical Ports	Per port with StrataLMI	Per port with Annex A/D NNI/UNI
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 MGX 8230 and MGX 8250 Edge Concentrators, 16,000 connections (PVCs) 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

The MIBs provided with Release 1.3.16 are included in the `mgx1rel1316mib.tar` file.

The MIBs are bundled in the firmware that is posted to Cisco.com.



### Note

The `old_mib_Format` has been discontinued as of Release 1.2.10. As of the Release 1.2.10, the `new_mibFormat` is named `mgx1rel<releasenum>mib.tar`

## Notes and Cautions

Before using this release, review the following notes and cautions.

## Using the `restoresmcf` Command

Before using the `restoresmcf` command, you must issue a `clrsmcf` to ensure that no dangling connections exist after the `restoresmcf` command.

## 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.

## 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. With such settings, the ISIS Protocol fails. The PCR value must be increased, depending upon the number of interfaces configured for ISIS on the RPM.

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. They both use Rate up and Rate down messages sent to the source of the connection to control the rate at which a connection runs. This rate is based on congestion within the switches along that connection path. Both systems use resource management (RM) cells to pass these messages. Consider the differences between the two systems.

### 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. Any rate modifications at the source end happen approximately every 100 ms. The time delay between the actual congestion at the destination and the source, which is getting to know about it, could be 100 ms.

In standard ABR a source generates FRM cells every ( $n$ RM) 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. The actual user data flow is lowered for an equivalent rate due to the additional RM cells. Therefore, the more traffic that is generated on a connection at any one time, the faster the feedback goes to the source.

In addition, a TRM parameter states that if no RM cells have been generated after this time has passed, one is automatically sent. Depending upon the speed, an ABR connection might, 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  $n_{RM}$  is 32, then approximately three RM cells are generated per second, or once every 300 msec. If it runs at 1000 cps, then an RM cell is generated approximately every 30 msec. In both cases, the equivalent ForeSight connection generates 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 this percentage is the rate increase percentage (RIP), then RIP is configurable at the card level (the default is 10 percent). If MIR is low, the ForeSight rate increase are 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  $(RIF * PCR)$ . The rate increase step sizes are much bigger than ForeSight for larger values of RIF (RIF has a range of 1/2, 1/4, ..., 1/32768). If RIF is not configured properly, standard ABR increases its rate much faster and to a higher value. 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) is configurable at the card level.

In standard ABR, rate decrease is by an amount  $(RDF * ACR)$ . The default value of RDF is 1/16 (6.25 percent). When this connection co-exists with ForeSight connections in the event of congestion, ForeSight connection reduces its rate by 13 percent. Standard ABR connection reduces its rate by only 6.25 percent. Therefore, in the case of co-existence with the same behavior across the two connection types, the RDF should be changed to 1/8, so that both connections decrease by the same amount (13 percent).

## Fast-Down

In ForeSight if the destination egress port drops any data due to congestion, 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 is generated. On reception of Fast Rate Down, the source reduces its current rate by 50 percent (a card-level configurable parameter).

Standard ABR does not distinguish between drops and the ECN/EFCI threshold being exceeded. In the 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 with 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 work together within the network, 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 do 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 might be biased toward connections running one of these algorithms over connections running the other.

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

- **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 msec. A suggested value is between 60–70 msec. This value is approximate as  $n$  is configurable in steps of  $2^{**}n$ . In the event of congestion, the ABR connection would start to react faster.

- **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.
- **RDF**: Rate Decrease Factor should be  $1/8$ . This approximates to 13 percent that ForeSight uses.

The following worked examples can 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 Speed 64K 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

ForeSight ABR

Rate-up equals  $(240*.1) = 24$  cps RIF 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 msec Nrm equals 32

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

## Node Related

This section contains node related notes.

- 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 (PXM1), MGX 8250, or MGX 8230, 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 (PXM1), MGX 8250, or MGX 8230 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 (PXM1), MGX 8250, or MGX 8230.

If loading of the correct common boot code image is required, it will have to be performed on an MGX 8220 chassis, and cannot be performed on an MGX 8850 (PXM1), MGX 8250, or MGX 8230 chassis.

Use the procedure below, which is also outlined in the *Cisco MGX 8850 (or MGX 8250 /MGX 8230) Installation and Configuration Guide*.

- 
- Step 1** Use FTP to transfer the MGX 8220 Release 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, you can safely remove the card. At this point the service module can be used in the MGX 8850 (PXM1) shelf.
- 



**Caution**

If the checksums are not the same when you remove the service module, the service module does boot when it is plugged in. The service module must 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 you try 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, reset the BXM card.

- In addition to clearing the entire configuration, **clralcnf** 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 upgrade 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 are 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 (PXM1) 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.
- You do not 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. The PXM is put in sleep mode, which 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:** Be aware of the need for extra power supplies and fans beyond certain limitations. A single fan tray supports all configurations that draw between 1200 and 1400 watts. For power requirements, the MGX 8850 (PXM1) requires a minimum of one power supply per line cord to support the power requirement for five cards (see [Table 4](#)).

**Table 4** Number of Power Supplies Per Line Cord Based on Cards Supported

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

The number of power supplies is based on an estimated worst-case power requirement of 190W plus margin per card slot.

## Connection Management Related

This section contains notes related to connection management.

- The name of the node cannot be changed if PVCs exist.

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

- Only one feeder trunk can be configured. BNI trunk to MGX 8850 (PXM1) as a feeder is not 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. If the slave end of the connection is deleted and re-added by itself, then unpredictable results occur.
- 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 **dsprscrptns** command shows the maximum connections as 32767, but you can only use  $32767 - 2 = 32765$ . One connection is used for LMI, and another one is used for IP Relay.
- No error handling detection exists 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. Do 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, one channel's CIR cannot be greater than the port speed, even if CAC is disabled. Two channels added up can exceed port speed. Therefore, 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 times 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. Since 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
  - Delete all connections on the partitions.
  - Delete the partitions
  - Delete the port.
  - Add the port with new VPI range.
- On an FRSM-2CT3, you 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)

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 no more ports can exist as in (D). The 129th port should be on lines 15 to 42 (as in B or C).

- If you add a connection between an RPM and a PXM and then delete the connection, the RPM shows no connection. However, the PXM still has the connection. The MGX is designed and implemented in such a way that only the connections that have the master end show up on the PXM (by **dspscons** 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 **dspscons** command, c2 and c3 are displayed, *not* c1. The connection does not show 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. When deleting the RPM side, which is the master, the connection does not show up on the PXM. However, keep in mind that the slave end (PXM) still exists.

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).

## Documentation Corrections

The documentation for the PXM1-based MGX switches incorrectly describes the cellbus to slot assignments.

For example, the MGX 8250 with a PXM1 has eight cellbuses. The distribution of these eight cellbuses to the appropriate slot numbers can be found by executing the CLI command **dspscbclk**.

```
m8250-4a.1.8.PXM.a > dspscbclk
```

CellBus	Rate (MHz)	Slot	AutoClkMode
CB1	21	1, 2	disable
CB2	21	3, 4	disable
CB3	21	5, 6	disable
CB4	21	17 - 22	disable
CB5	21	9, 10	disable
CB6	21	11, 12	disable
CB7	21	13, 14	disable
CB8	21	25 - 30	disable

## Limitations

This section contains the limitation that is applicable to Release 1.3.16.

### clrmscnf

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

- Slot in reserved state
- 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, an FRSM 8T1/E1 is in the slot with some configuration and you want to use this slot for an AUSM 8T1/E1 card.

The following configurations are NOT supported on the MGX 8850 (PXM1), 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.



Note

As designed, if RPM-PR is configured as a Label Switch Controller (LSC), execution of the **clrsmcnf** command on those LSC slots is rejected.

## Open Caveats

This section contains the open caveats in platform software Release 1.3.x and service module firmware.

### Open Caveats in Release 1.3.16

[Table 5](#) lists open caveats in the service module firmware and the Release 1.3.16 software at the time of this release. 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.

**Table 5** *Open Caveats in Release 1.3.16 Software*

Bug ID	Description
CSCek72143	<p>Headline: Clock alarm does not get integrated in some conditions.</p> <p>Symptom:</p> <ol style="list-style-type: none"> <li>1. Clock alarm does not get integrated properly.</li> <li>2. Tertiary SM clock does not take over if secondary clock fails</li> </ol> <p>Conditions:</p> <ol style="list-style-type: none"> <li>1. If primary clock slips, comes back up after 5 min, but in the mean time Secondary was failed or unconfigured.</li> <li>2. If Secondary clock fails and Tertiary is configured as MPSM-CES SM clock.</li> </ol> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1: re-configure the primary clock for problem.</li> <li>2: Do not use SM clock as tertiary.</li> </ol>
CSCir01630	<p>Headline: <b>snmpwalk</b> on MPSM8 gives unavailable channels output.</p> <p>Symptom: <b>snmpwalk</b> on objects gives unavailable channels on the switch.</p> <p>Condition: For the objects which requires channel numbers, xmtCells, sarChanNum, and rcvCells.</p> <p>Workaround: none.</p>

## Open Caveats in Release 1.3.14

Table 6 lists open caveats in the service module firmware and the Release 1.3.14 software as of December 21, 2005. 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.

**Table 6** Open Caveats in Release 1.3.14 Software

Bug ID	Description
CSCdw60302	<p>Headline: APS-B-PXM1 with WL in YEL alarm: <b>delapsln</b> and <b>addapsln</b> results WL active.</p> <p>Symptom: With 1+1 APS bi-directional configuration, working line 7.1 in YEL alarm, active line stays on working 7.1.</p> <p>Conditions: Removed the Rx of the working line from remote end to cause YEL alarm (RDI-L) on the working line. Executed the <b>delapsln</b> and <b>addapsln</b> commands. Then, configured to bi-directional mode.</p> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1. Execute a switchaps with Lockout.</li> <li>2. Execute switchaps with Clear.</li> </ol> <p>Then the active line switches to protection line 8.1.</p> <p>Further Problem Description: This problem is due to line condition prior to APS configuration.</p>
CSCdx27113	<p>Headline: Sometimes Seconds in Service reported 3601 seconds for one hour.</p> <p>Symptom: 'Seconds in Service' for the frame relay connections sometimes reports more than 100% in service, for example, the value of 'Seconds in Service' for one hour shows 3601 seconds.</p> <p>Conditions: None.</p> <p>Workaround: None.</p>
CSCdy51769	<p>Headline: User Frame was discarded on some channels without any alarm.</p> <p>Symptom: User Frame is discarded without any alarm. XmtFramesDiscCRCError has been counted. To count XmtFramesDiscCRCError stopped after softswitch.</p> <p>Conditions: None.</p> <p>Workaround: None.</p>
CSCdz16976	<p>Headline: PXM missing ports</p> <p>Symptom: Customer added port on AUSM cards and the port did not appear on the PXM.</p> <p>Conditions: Creating port on MGX with PXM1 processor and AUSM card, the port is created on the service module but fails to appear on the PXM. The log contains the port. The <b>add, dspports</b> on the service module shows the port, but <b>dsparifs</b> on the active PXM does not have the port.</p> <p>Workaround: Delete the port on the AUSM card and perform a softswitch. The port can then be added.</p>

Table 6 Open Caveats in Release 1.3.14 Software (continued)

Bug ID	Description
CSCeb59713	<p>Headline: PAR: Cannot increase Max VPC conid with <b>cnftrk</b></p> <p>Symptom: PAR does not allow you to change the number of VPCs from the default.</p> <p>Conditions: This occurs with rev 1.2.02.</p> <p>Workaround: None.</p>
CSCed28747	<p>Headline: Watchdog Timeout due to PAR tasks</p> <p>Symptom: PXM1 reset with clean switchover to redundant PXM1.</p> <p>Conditions: PXM reset due to H/W Watchdog Timeout. Successful switchover took place. From the core, PAR tasks cannibalized the CPU and hence other tasks including root task could not get a chance to run. The root task tickles a h/w timer, which is connected to the reset PLD of the PXM. If this circuit is not tickled periodically it resets the PXM.</p> <p>Workaround: None.</p>
CSCee21093	<p>Headline: tftp to RPM-PR card takes infinite long time get config file on PXM1</p> <p>Symptom: On MGX 8850 with PXM1 controller card platform, tftp of the config file by the CWM NMS application from the RPM-PR card takes a long time to complete.</p> <p>Conditions: CWM NMS application tries to sync up with the MGX node. This process invokes an SNMP get route to collect information from the node cards. For some reason, the RPM-PR config file cannot be collected as the SNMP get routine gets timed out. As the time out happens in this condition, CWM NMS application cannot sync up with the RPM-PR configuration.</p> <p>Workaround: Remove the running configuration of the RPM-PR card by executing the <b>clrsmcnf</b> command from the PXM1 controller card.</p> <p>Reload the original configuration (which must be saved in a temporary file before executing <b>clrsmcnf</b>) on the RPM-PR card. This should allow the card to resync properly with the CWM NMS application.</p>
CSCef57764	<p>Headline: MGX-BPX: Oflw CLP0 Dscd counts up on MGX FRSM port failure</p> <p>Symptom: MGX-BPX: "Oflw CLP0 Dscd" counts up on MGX FRSM port failure.</p> <p>Condition: This problem occurs on the MGX 8850 connected to a BPX 8620.</p> <p>Workaround: switchcc on PXM.</p>
CSCeg33627	<p>Headline: FRSM CLI hangs after adding a connection slave end.</p> <p>Symptom: Adding a connection slave end with <b>addcon</b> on the FRSM causes the CLI to hang.</p> <p>The CLI does not respond, but cc to the controller is allowed.</p> <p>Conditions: When <b>addcon</b> is issued with the tailing "2" to specify as a connection slave end.</p> <p>Workaround: Omit the mastership parameter.</p>

Table 6 Open Caveats in Release 1.3.14 Software (continued)

Bug ID	Description
CSCeh01699	<p>Headline: APS and SONET lines unrecognized when Act PXM reset and TBC out.</p> <p>Symptom: MGX 8850 (PXM1) does not recognize APS and SONET lines when Act PXM was reset when trunk back card of standby PXM was pulled out.</p> <p>Conditions:</p> <ol style="list-style-type: none"> <li>1. Remove the trunk back card of the standby PXM. Standby PXM goes into MISMATCH state.</li> <li>2. Reset the active PXM.</li> <li>3. When the previously standby PXM comes to active state then insert back the trunk backcard.</li> <li>4. PXM will show the PROT APS line is MISSING.</li> </ol> <p>Workaround: None.</p>
CSCin76324	<p>Headline: ACS does not return the default privilege level mentioned in the switch.</p> <p>Symptom: ACS server does not return to switch's default privilege level.</p> <p>Conditions: This issue occurs after fallback.</p> <p>Workaround: None.</p>
CSCin88494	<p>Headline: 1:N switchover happens between normal 8T1 backcards and issues with redundancy.</p> <p>Symptom: Establish 1:N redundancy between two CESM cards with redundant backcard for the standby card. Remove the redundant back card and insert a normal 8T1 back card. Try to switchover, no error message thrown and the switchover command passes successfully, but no switchover happens.</p> <p>Conditions: After adding 1:N redundancy with redundant back card, remove the redundant backcard. Insert a normal backcard and try to do a switchover.</p> <p>Workaround: None.</p>

## Caveat Status Changes from Previous Releases

Table 7 lists the caveats that have changed status as a result of Release 1.3.16.

**Table 7** *Anomaly Status Changes from Previous Releases*

Bug ID	Description
CSCdw60302	<p>Headline: APS-B-PXM1 with WL in YEL alarm: <b>delapsln</b> and <b>addapsln</b> results WL active.</p> <p>Symptom: With 1+1 APS bi-directional configuration, working line 7.1 in YEL alarm, active line stays on working 7.1.</p> <p>Conditions: Removed the Rx of the working line from remote end to cause YEL alarm (RDI-L) on the working line. Executed the <b>delapsln</b> and <b>addapsln</b> commands. Then, configured to bi-directional mode.</p> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1. Execute a switchaps with Lockout.</li> <li>2. Execute switchaps with Clear.</li> </ol> <p>Then the active line switches to protection line 8.1.</p> <p>Further Problem Description: This problem is due to line condition prior to APS configuration.</p> <p>Status: Unreproducible (U)</p>
CSCdz16976	<p>Headline: PXM missing ports</p> <p>Symptom: Customer added port on AUSM cards and the port did not appear on the PXM.</p> <p>Conditions: Creating port on MGX with PXM1 processor and AUSM card, the port is created on the service module but fails to appear on the PXM. The log contains the port. The <b>add, dsports</b> on the service module shows the port, but <b>dsparifs</b> on the active PXM does not have the port.</p> <p>Workaround: Delete the port on the AUSM card and perform a softswitch. The port can then be added.</p> <p>Status: Duplicate (D) of CSCea28215, Resolved (R)</p>

**Table 7** *Anomaly Status Changes from Previous Releases (continued)*

Bug ID	Description
CSCeb59713	<p>Headline: PAR: Cannot increase Max VPC conid with <b>cnftrk</b></p> <p>Symptom: PAR does not allow you to change the number of VPCs from the default.</p> <p>Conditions: This occurs with rev 1.2.02.</p> <p>Workaround: None.</p> <p>Status: Unreproducible (U)</p>
CSCeg33627	<p>Headline: FRSM CLI hangs after adding a connection slave end.</p> <p>Symptom: Adding a connection slave end with <b>addcon</b> on the FRSM causes the CLI to hang.</p> <p>The CLI does not respond, but cc to the controller is allowed.</p> <p>Conditions: When <b>addcon</b> is issued with the tailing "2" to specify as a connection slave end.</p> <p>Workaround: Omit the mastership parameter.</p> <p>Status: Unreproducible (U)</p>

## Resolved Caveats

This section contains the list of resolved caveats in Cisco IOS Releases 1.3.x.

### Resolved Caveats in Release 1.3.16

[Table 9](#) lists the caveats that are resolved in Release 1.3.16 at the time of this release.

**Table 8** *Resolved Caveats in Software Release 1.3.16*

Bug ID	Description
CSCeh95285	TRL in IMA lines is not moving after swithcc in node.
CSCej67401	Online Diags CBC ASIC Monitor Fail count incrementing.
CSCek01493	Connection goes into alarm for NNI-NNI interface.
CSCek30340	SNMP get for axisImaGroupNumRxActLnks gives incorrect value.
CSCek30963	Configuring FRSM-2T3 changing signal type caused stby card to reset.
CSCek36274	Allocated memory is not released during channel configuration change.
CSCek55439	Yellow alarm detected on unstructured mpsm-ces port.
CSCek01617	PXM resets and fails to come up due to Hard Disk Or DB synch up issues.
CSCek05262	dspcds and dspred are inconsistent in showing SM states sometime.
CSCek24603	Modifying the FGCRA bit on connections causes one-way traffic.
CSCek32016	Not able to collect stats due to task suspend. Switchcc reblds node rarely.
CSCek32113	MGX8850 PXM-1 does not have matching ifIndex to ipAddrTable Entry.
CSCek37659	RPM 1:N red switched back if another primary RPM reset.

**Table 8** Resolved Caveats in Software Release 1.3.16 (continued)

Bug ID	Description
CSCek46679	PXM card does not reset before standby fails in case of QE fatal error.
CSCek50387	ACI FIFO Full count increaments rapidly sometimes.
CSCek54289	SntpPktPro task become RUNAWAYTASK and PXM1 got reset.
CSCek55000	PXM goes into major alarm on switchcc.
CSCek60224	Lost connections and ports when replaced Act AUSM cards in MGX1E node.
CSCek66773	Standby frsm-vhs card resets when configuring selftest on active card.
CSCek67888	PAR:Lmi task is not getting any CPU time.
CSCek69347	Unable to addred to NBSM slots 9,10,25,26 in bulk mode with SRMEB3T3.
CSCef49970	1.2.21 PXM1 crashes when perform Nessus security check.
CSCek42447	MPSM - De-licensing Enhancement.
CSCdz42313	Merging MIB baseline with AXIPOPMBIBS for Columbia Release.
CSCei00779	wr mem fails w/startup-conf file open failed (Unknown error 1785358.
CSCek15048	Need to disable 64K mode for MPSM-8-FR with AMI coding.
CSCek15086	Need to disable 64K mode for FRSM-8 with AMI coding.
CSCeh18082	Private image for VID checking.
CSCek26584	PXM1 should close 17185 socket port to avoid possible DoS attack.
CSCek30251	POP1: Memory leak seen with rfss_open.
CSCek33810	Failure of command q<cr> to stop the dsp command.
CSCek66063	MPSM8: lineLength object needs to updated with supported values.
CSCek40294	Preventive fix for exception in sarQe1210QeStatInt().
CSCek57565	S3 clock MUX is not getting reprogrammed if primary clock fails before locking.
CSCek57570	Block failed interface from being configured as clock source.
CSCek62732	Database corruption during clrmscnf.
CSCek62755	Trap 50008 from MGX1E doesnt match MIB definition.
CSCek61067	PXM reset due to tRMM starvation.
CSCek70488	Inband clock slips to secondary and never reverts back.
CSCek71196	Clock does not latch to secondary SM clk(MPSM-CES) if Primary fails.
CSCin89031	Modification of Port For FRSM-T1 Cards take junk Value for LMIsig Paramete.
CSCin90687	MER+: Tx frame length editable to invalid values for IMA ver 1.0.
CSCin98396	Unable to configure clk source after deleting & readding the SM lport.
CSCin98487	Enhancing Diag test in the PXM for Hd/mem Depletion.
CSCin98991	DAL-4-DAL_CHAN_DEL error occurs when deleting IMA group.
CSCin88494	1:N switchover happens b/n normal 8T1 bccards & issues with redundada.
CSCin98001	Able to add redundancy between NBSMs(including MPSM) if FW is diff.
CSCin98141	APS:WL in pop1 goes into R_AM state forever.
CSCin98500	Enabling SM selftest on Standby SMs & enhancing selftest.

**Table 8** *Resolved Caveats in Software Release 1.3.16 (continued)*

Bug ID	Description
CSCin98849	Execution of dsplogs leads to PXM reset.
CSCir00919	Primary and secondary cards coming active due to red corruption(1:N).
CSCir00984	MibWalk not running after atmPhysicalGroup.1.1.5.7 = 3 on MPSM 8T1E1.
CSCir01503	MPSM-8 card resets on adding FST ABR connection in ATM mode.
CSCir01578	Alarm is seen on working line after removing cables from both the lines.
CSCin99452	APS: APS line struck in PL in Revertive mode.
CSCir01207	Unable to Add Redundancy between AUSM with same feature displayed.
CSCir01429	Not able to add redundancy after the graceful upgrade of one of the MPSM and ungraceful upgrade of another MPSM.
CSCir01685	Unable to clear the srm config with 1:1 Redundancy.
CSCir01713	Primary card stuck in boot state while softswitch between MPSM.

## Resolved Caveats in Release 1.3.14

[Table 9](#) lists the caveats that are resolved in Release 1.3.14 as of December 21, 2005.

**Table 9** *Resolved Caveats in Software Release 1.3.14*

Bug ID	Description
CSCdv53678	<b>switchapsln 1 c</b> command causes APS line switch over
CSCea04133	PXM1-2T3 continuously resets when adding management PVC with both DS3s active
CSCef60507	Novram on TBC has checksum failure while No trunk back card
CSCef83873	MPSM failed after PXM switchcc stress testing
CSCeg25540	Secondary external clock source switches to internal after switchcc
CSCeg33403	PXM1 memory leak
CSCeg42347	dspelkinfo not reflect the actual clock state
CSCeg78661	AUSM trap 50918 is missing two varbinds
CSCeh05429	MGX (PXM1) connected with MGX (PXM45) does not display correct LMI status.
CSCeh36613	CBC ASIC issues when card missing and connections configured
CSCeh41557	After removal of back cards, links and lines are missing in SRME
CSCeh53982	dspfeature allows disabling of IMA feature which is a wrong info
CSCeh71240	Handle tInTask being a runAway count
CSCeh71272	False APS switching when one of the APS lines failed
CSCeh71950	Upgrading FRSM HS2B DTE line causes line alarm
CSCeh72222	Standby PXM keeps rebooting when downloading FW from active card repeatedly
CSCeh76975	PXM card resets due to task deadlock situation

**Table 9** *Resolved Caveats in Software Release 1.3.14 (continued)*

Bug ID	Description
CSCeh79687	TACACS+ configuration on standby PXM set to default after resetsys
CSCeh92171	Not possible to configure 1:N redundancy between MPSM in the standby mode
CSCej53700	LMI failure between MPSM-8T1E1 and router due to LMI sequence number mismatch
CSCej73911	PXM gets switched when CBC trace is enabled
CSCei27689	Trap Frequency Monitor Online Diag raises an exception
CSCei51928	GLCN goes beyond 65534 and does not sync to STBY
CSCei64193	Load exception by task tTelnetDTas occurred
CSCei61908	Slips and dropped pings with AMI configured on MPSM
CSCej56914	PER-9794: Enhancement: Clock loss alarm to be reported under shelfIntg alarm.
CSCej89468	Integrate Clock Loss alarm to Shelf Integrated alarm
CSCej89472	<b>dspecds</b> command shows both primary card and secondary card as active
CSCek01493	Connection goes into alarm for NNI-NNI interface
CSCin82993	Wrong values for low and high VPID for ATM ports on PXM1 card
CSCin94631	VISM LCNs fail upon switchover to STBY (1:N redundancy)
CSCin97617	Unknown clock driver error when SRME/B card is inserted
CSCin98051	Clock does not revert back when line statistical alarm clears

## Resolved Caveats in Release 1.3.12

[Table 10](#) lists the caveats that are resolved in MPSM-8-T1E1 version .008 of Release 1.3.12 as of June 20, 2005.



Note

Version .008 also includes the caveats that are resolved in version .007.

**Table 10** *Resolved Anomaly in MPSM-8-T1E1 Version .008*

Bug ID	Description
CSCeh78289	Hardware migration for NBSM to MPSM failed

[Table 11](#) lists resolved caveats in the service module firmware and the Release 1.3.12 software as of April 28, 2005.

**Table 11** *Resolved Caveats in Release 1.3.12 Software*

Bug ID	Description
CSCea86502	CLI does not validate the parameters of mv command correctly
CSCec66018	PXM1B APS test coverage in diagnostic
CSCec72985	PXM failing CBC ASIC

**Table 11** *Resolved Caveats in Release 1.3.12 Software (continued)*

Bug ID	Description
CSCee35196	During APS switchover, ensure the registers are programmed
CSCee48365	QE Access Failed for QE1
CSCee61563	QE errors, Need to reset the pxm card when we have fatal QE errors
CSCef31686	PXM reboot continuously with SMFIR-1-622/B bad novram card
CSCef55238	config upload failing for ausm, tftp access violations on NMS
CSCeg05055	Console terminal hangs, causing PXM switchover after upgrade
CSCeg17462	AUSM-8T1E1 cannot delete a port, error Connections existing on port
CSCeg25173	MPSM-8-T1 dumped the core after reset
CSCeg32459	PXM resets when console receives external script containing %n
CSCeg36896	Cannot add AUSM-8T1E1/MPSM-8T1E1 as 1:N redundancy
CSCeg40704	Password gets corrupted after <b>dsppasswd</b> command is used
CSCeg45738	Deleting connection left connection resources un-initialized
CSCeg74315	PXM reset due to tRVT task exception
CSCeh01020	Improper PXM switchover while removing and inserting SRM FC or BC
CSCeh01675	During FW upgrade of FRSM-2CT3 (1:1 Red), after newrev PRI card reboots twice
CSCeh02083	Task Monitor erroneously detects a task hung on task delete
CSCeh13289	Active APS does not switch to protection even if active goes in ALM
CSCeh14484	ABR PCR not getting copied to channel PCR in MPSM-8T1-FRM
CSCeh17296	1:N RPM redundancy - second RPM state remains Failed after OIR
CSCeh18093	FST ABR connections burst at OC3 speed when AIR reaches PIR
CSCeh27816	Trap Number 50053, diagStatusTrap contains varbind in wrong order
CSCeh28217	Modify Logic for ESE/ISE clock rate identification
CSCeh33666	PXM is not reset if a task is hanging on Mutex semaphore
CSCeh39298	Port speed vs Line speed is different after upgrades from 1.2.01 to 1.3.11
CSCeh41551	Log showing NVRAM Failed and Checksum errors for SRME
CSCeh47077	Handling FST ABR connections burst at OC3 speed per card basis
CSCeh62784	TACACS+ Command Mode Authorization not working for standby PXM
CSCeh70841	dspshelfalm showing wrong status for power supply units
CSCeh71940	cliCmdTask suspends when clralms is executed
CSCin84104	FRSM-8P does not recognize SMB line connector type on upgrade
CSCin87527	Standby PXM reset on executing <b>dspcderrs</b>

## Resolved Caveats in Release 1.3.11

[Table 12](#) lists resolved caveats in the service module firmware and the Release 1.3.11 software as of October 5, 2005.

**Table 12** *Resolved Caveats in Release 1.3.11 Software*

Bug ID	Description
CSCee08054	Change the DMA semaphore timeout value for QE to 3 seconds
CSCef54552	ATM0 connectivity lost
CSCef80371	Unable to add redundancy between RPM cards
CSCef83943	Changing PXM refresh rate

## Resolved Caveats in Release 1.3.10

[Table 13](#) lists resolved caveats in the service module firmware and the Release 1.3.10 software as of August 23, 2004.

**Table 13** *Resolved Caveats in Release 1.3.10 Software*

Bug ID	Description
CSCdx35791	PXM card fails to boot
CSCea74880	MGX8250: PXM1-T3: switchcc may cause PXM to lose primary clock
CSCed48400	PXM1 needs better idtmon DRAM test
CSCed55773	addred between NBSM & MPSM-8 causes PXM SW error reset
CSCed74835	can not copy big rpm files to C: drive
CSCed92515	Bring VxWorks source into the VOB; fix timer wrap around after 466 days
CSCee05163	RPMPR doesn't come up IPC communication not established
CSCee18019	MPSM8-RAS: addln on PXM1 does not work after upgrade from 1.2.20
CSCee24657	trap 50024 received with 6 varbinds instead of 8
CSCee35171	Watchdog timeout reset due to readNvRam
CSCee40233	To resolve the ssiFunctrace issue
CSCee51143	Bad clk signal on external clock source
CSCee75100	UPG5+: Software exception blocked access to standby PXM1
CSCee76389	duplicate trap sequence number
CSCee79278	PXM1 goes to Mismatch and SRMs hang in CardInit after reset
CSCee89622	Switch sending corrupt varbind to CWM 15.0
CSCee95065	Reconfigure clk source when the pxm card comes to active state
CSCef07832	Adding 1:N redundancy not blocked for SM cards with different FW version
CSCef24248	Changes to handle the FRSM getting stuck in failed state
CSCef40614	PXM1-2-T2E3 resets while enabling second interface

## Resolved Caveats in Release 1.3.00

[Table 14](#) lists resolved caveats in the service module firmware and the Release 1.3.00 software as of April 14, 2004.

**Table 14** *Resolved Caveats in Release 1.3.00 Software*

<b>Bug ID</b>	<b>Description</b>
CSCdr65069	Agent returns GEN_ERR when rcv SET nextTrapseq with non-exist MgrIndex
CSCdv32986	100% data is getting dropped on some connections
CSCdz67816	AUSM CLI restartimagrp error msg typo
CSCea04133	PXM1-2T3 continuously resets when adding management pvc with both DS3s active
CSCea16127	PXM1e: dpsarcnt output is mis-aligned
CSCea33131	DB inconsistency between PAR and SPM
CSCea35799	snmpwalk does not get all PVCs on AUSM
CSCea66855	SRM_3T3 non-TLV Novram support
CSCeb05910	PM parameters on NBSMs are not accurate
CSCeb17823	Unreliable tstdelay results for axsm/B/E <--> frsm
CSCeb27697	delrscrptn not working properly
CSCeb40265	xcnfln shows the clkfrquency threshold 1-5. does not show what values mean
CSCeb46869	subagents table display should correspond to correct shelf/slot no
CSCeb46903	dsptotals should be blocked on CESM redundant cards thru CLI
CSCeb58981	MPSM8-DT: When pxm is daylight savings frsm-vhs time do not change
CSCeb59239	PM parameters on NBSMs are not accurate
CSCeb60499	Channel showing OK state with Controller Abit=0
CSCeb72485	CESM cannot clear RcvAIS when connected to physical loop
CSCeb72867	FRSM8 cannot add con with VCI > 9999 as master to AUSM
CSCeb75989	tRoot task switchover due to Software Error Reset
CSCeb76113	MPSM8-DT: AUSM does not force range check for VPID for resource partition
CSCeb77891	IMA-Auto: dspimagrp shows additional info with ima autorestart enable
CSCeb77913	SRMEB: NBSM in mismatch after upgrade from 21.0(2.x) to 22.x
CSCeb80600	corrupted stats on pxm1e -- cesm-t1e1 cards under corner configurations
CSCeb84360	ChanIngressClpSetCell counter not correct
CSCeb86832	License Management Enhancement
CSCec00744	Add cefcModuleOperStatus to trap 60052 on applicable platforms
CSCec01002	MPSM8-DT: xcnfchan allows changing non-UBR connection to 0 CIR
CSCec01073	FRSM HS2/B to support low speed rates like 2.4K
CSCec02145	CESM 8E1 connection addition fails when partial fill < 31 on E1 struct
CSCec04894	Port on FRSM Show failed due to line failure while lines are OK
CSCec07295	Xcnfcon -pt is not working on the CESM card
CSCec08533	CESM T3E3 1:1 Redundancy is not functional
CSCec11248	wrong connector value for frsm-8e1 lines in MGX8850 node
CSCec12595	CESM-T3E3 connection not in Fail state after LOS on T3 line

**Table 14** *Resolved Caveats in Release 1.3.00 Software (continued)*

Bug ID	Description
CSCec17957	MPSM8-DT: xcnfchan allows changing non-UBR connection to 0 CIR
CSCec20161	MPSM8-DT: primary LSM went into mismatch/active detects FC mismatch
CSCec23758	FRSM HS1 connections stuck in AIS alarm after card reset.
CSCec25164	One-way traffic sometimes on FRSM-VHS
CSCec25298	CWM: Ausm Ingress Discard Option missing in trap upload
CSCec29715	MPSM8-DT: card should flags License alarm instead invalid alarm
CSCec29899	MPSM8-DT: dspfeature command should be removed from MPSM8
CSCec30186	most of the instances of entPhysicalHardwareRev are not correct
CSCec30195	entPhysicalFirmwareRev is empty for FRSM/HS1B/HS2/B/2T3 and VISM-8T1/E1
CSCec31183	Port Alarm is asserted on standby CESM-T3E3 card after added
CSCec46539	PXM reset while using CLI and getting error logs - stays removed
CSCec59200	MGX rel 1 fails to complete sync up, TFTP requests timeout
CSCed32265	card reset and core dump because of the runaway task
CSCed36283	Monitoring the SRAM of QE/CBC/RCMP for errors and take recovery action
CSCed41792	Check in for MPSM-8T1E1 Core Dump
CSCed43229	Cannot telnet or ping PXM1 node
CSCed48400	PXM1 needs better idtmon DRAM test
CSCed55064	SRME sometimes loses the backplane reference clock and goes to recovery mode
CSCed55739	Request from PRT8535 issue-26
CSCed56014	UPG5: MGX-8230 stdby SRM stuck in Init after switchcc
CSCed70467	abort mpsm core dump gets logged no matter what
CSCed84883	pxm reset due to workQPanic
CSCee13131	FRSM-8T1 fails to boot after a power cycle running 1.3.00
CSCee20455	port resync on MGX (PXM1) updates wrong port ids

## Compatibility Notes

This section contains compatibility information for Release 1.3.16.

### MGX 8230, MGX 8250, and MGX 8850 (PXM1) Software Certification with Other Products

[Table 15](#) lists how MGX software version 1.3.16 interoperates with other products.

**Table 15**      *Software That was Certified with MGX Release 1.3.16*

Switch or Component	Certified Software Version
MGX 8230, MGX 8250, and MGX 8850 (PXM1)	MGX 1.3.16
MGX 8850 (PXM45), MGX 8850 (PXM1E), and MGX 8950	MGX 5.4.00 MGX 5.3.20 MGX 5.3.10 MGX 5.2.00 MGX 5.0.20 MGX 4.0.15 MGX 3.0.25
BPX Switch Software	9.4 Release: 9.4.12 9.3 Release: 9.3.53
BPX SES Shelf	SES 4.0.15 SES 3.0.25
Cisco WAN Manager	CWM 15.4.00,
MGX 8220 Shelf	MGX 8220 4.1.12 MGX 8220 5.0.20
VISM	VISM Release 3.3.30 VISM Release 3.3.25 VISM Release 3.3.10 VISM Release 3.2.11 VISM Release 1.5.09

## Boot File Names and Sizes

[Table 16](#) displays the boot file names and sizes for this release.

**Table 16**      *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_1.0.06.fw	298716
frsm_hs1_HS1_BT_1.0.02.fw	293052
frsm_vhs_VHS_BT_1.0.07.fw	468676
mpsm_t1e1_030.004.000.200_bt.fw	1430040

**Table 16** *Boot File Names and Size (continued)*

File Name	File Size (in bytes)
pxm_bkup_1.3.16.fw	1389692
rpm-js-mz.124-6.T5	4686920

## MGX 8250 and MGX 8850 (PXM1) Firmware Compatibility

The firmware compatibility matrix for this release is presented in [Table 17](#).

**Table 17** *MGX 8250 Switch and MGX 8850 (PXM1) Switch Firmware Compatibility Matrix*

PCB Description	CW2000 Name	Latest F/W	File Name	File Size (in bytes)
PXM1	PXM-1	1.3.16	pxm_1.3.16.fw	3304456
PXM1-2-T3E3	PXM1-2T3E3	1.3.16	pxm_1.3.16.fw	3304456
PXM1-4-155	PXM1-4OC3	1.3.16	pxm_1.3.16.fw	3304456
PXM1-1-622	PXM1-OC12	1.3.16	pxm_1.3.16.fw	3304456
MGX-SRM-3T3/C	SRM-3T3	—	—	—
MGX-SRME	SRME	—	—	—
MGX-SRME/B	SRME/B	—	—	—
MGX-AUSM-8E1/B	AUSMB-8E1	10.3.16	ausm_8t1e1_10.3.16.fw	1395072
MGX-AUSM-8T1/B	AUSMB-8T1	10.3.16	ausm_8t1e1_10.3.16.fw	1395072
AX-CESM-8E1	CESM-8E1	10.3.16	cesm_8t1e1_10.3.16.fw	743840
AX-CESM-8T1	CESM-8T1	10.3.16	cesm_8t1e1_10.3.16.fw	743840
MGX-CESM-8T1/B	CESM-8T1	10.3.16	cesm_8t1e1_10.3.16.fw	743840
MGX-CESM-T3	CESM-T3	10.3.16	cesm_t3e3_10.3.16.fw	641824
MGX-CESM-E3	CESM-E3	10.3.16	cesm_t3e3_10.3.16.fw	641824
AX-FRSM-8E1/E1-C	FRSM-8E1	10.3.16	frsm_8t1e1_10.3.16.fw	900204
AX-FRSM-8T1/T1-C	FRSM-8T1	10.3.16	frsm_8t1e1_10.3.16.fw	900204
MGX-FRSM-HS2/B	FRSM-HS2/B	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-HS2	FRSM-HS2	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-2CT3	FRSM-2CT3	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-2T3E3	FRSM-2T3	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-2T3E3	FRSM-2E3	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-HS1/B	FRSM-HS1/B	10.3.16	frsm_hs1_10.3.16.fw	789208
MPSM-8-T1E1	MPSM-8-T1E1	30.4	mpsm_t1e1_030.004.000.200.fw	2255392
MGX-RPM-PR	RPM-PR	12.4(6)T5	rpm-js-mz.124-6.T5 (IOS)	4686920

## MGX 8230 Firmware Compatibility

Table 18 lists the MGX 8230 firmware compatibility matrix for this release.

**Table 18** *MGX 8230 Firmware Compatibility Matrix*

PCB Description	CW2000 Name	Latest F/W	File Name	File Size (in bytes)
PXM1	PXM-1	1.3.16	pxm_sc_1.3.16.fw	3297968
PXM1-2-T3E3	PXM1-2T3E3	1.3.16	pxm_sc_1.3.16.fw	3297968
PXM1-4-155	PXM1-4OC3	1.3.16	pxm_sc_1.3.16.fw	3297968
PXM1-1-622	PXM1-OC12	1.3.16	pxm_sc_1.3.16.fw	3297968
MGX-SRM-3T3/C	SRM-3T3	—	—	—
MGX-SRME	SRME	—	—	—
MGX-SRME/B	SRME/B	—	—	—
MGX-AUSM-8E1/B	AUSMB-8E1	10.3.16	ausm_8tle1_10.3.16.fw	1395072
MGX-AUSM-8T1/B	AUSMB-8T1	10.3.16	ausm_8tle1_10.3.16.fw	1395072
AX-CESM-8E1	CESM-8E1	10.3.16	cesm_8tle1_10.3.16.fw	743840
AX-CESM-8T1	CESM-8T1	10.3.16	cesm_8tle1_10.3.16.fw	743840
MGX-CESM-8T1/B	CESM-8T1	10.3.16	cesm_8tle1_10.3.16.fw	743840
MGX-CESM-T3	CESM-T3	10.3.16	cesm_t3e3_10.3.16.fw	641824
MGX-CESM-E3	CESM-E3	10.3.16	cesm_t3e3_10.3.16.fw	641824
AX-FRSM-8E1/E1-C	FRSM-8E1	10.3.16	frsm_8tle1_10.3.16.fw	900204
AX-FRSM-8T1/T1-C	FRSM-8T1	10.3.16	frsm_8tle1_10.3.16.fw	900204
MGX-FRSM-HS2/B	FRSM-HS2/B	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-HS2	FRSM-HS2	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-2CT3	FRSM-2CT3	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-2T3E3	FRSM-2T3	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-2T3E3	FRSM-2E3	10.3.16	frsm_vhs_10.3.16.fw	1033156
MGX-FRSM-HS1/B	FRSM-HS1/B	10.3.16	frsm_hs1_10.3.16.fw	789208
MPSM-8-T1E1	MPSM-8-T1E1	30.4	mpsm_t1e1_030.004.000.200.fw	2255392
MGX-RPM-PR	RPM	12.4(6)T5	rpm-js-mz.124-6.T5 (IOS)	4686920

# MGX 8850 (PXM1), MGX 8250, and MGX 8230 Release 1.3.16 Hardware

Table 19 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 1.3.16. 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 19** 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/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
MGX-SRME/B	800-25902-01	F0	MGX-SMFIR-1-155	800-14460-03	B0
			MGX-STM1-EL-1	800-14479-04	C0
			MGX-BNC-3T3-MI	800-03148-02	B0
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

**Table 19** Hardware Compatibility Matrix (continued)

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
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			
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

Table 19 Hardware Compatibility Matrix (continued)

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
MGX-FRSM-HS1/B	800-05129-01	A0	MGX-12IN1-4S MGX-SCSI2-2HSSI/B	800-04981-01 800-05463-02 800-05501-01	A0 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 MGX-MMF-FE MGX-RJ45-4E MGX-MMF-FDDI MGX-MMF-FDDI/FD MGX-SMF-FDDI MGX-SMF-FDDI/FD	800-02735-02 800-03202-02 800-02737-02 800-02857-01 800-03820-01 800-02736-01 800-03822-01	A0 A0 A0 A0 A0 A0 A0
MGX-RPM-PR-256	800-07178-02	A0	MGX-RJ45-FE MGX-MMF-FE MGX-RJ45-4E/B	800-02735-02 800-03202-02 800-12134-01	A0 A0 A0
MGX-RPM-PR-512	800-07656-02	A0	MGX-RJ45-FE MGX-MMF-FE MGX-RJ45-4E/B	800-02735-02 800-03202-02 800-12134-01	A0 A0 A0
MGX-VISM-8E1	800-04398-01	A0	AX-SMB-8E1 AX-R-SMB-8E1 AX-RJ48-8E1 AX-R-RJ48-8E1 MGX-RJ48-8E1	800-02287-01 800-02410-01 800-02408-01 800-02409-01 800-19310-01	A0 A0 A0 A0 A0
MGX-VISM-8T1	800-04399-01	A0	AX-RJ48-8T1 AX-R-RJ48-8T1	800-02286-01 800-02288-01	A0 A0
MGX-VISM-PR-8E1	800-07991-02	A0	AX-SMB-8E1 AX-R-SMB-8E1 AX-RJ48-8E1 AX-R-RJ48-8E1 MGX-RJ48-8E1	800-02287-01 800-02410-01 800-02408-01 800-02409-01 800-19310-01	A0 A0 A0 A0 A0
MGX-VISM-PR-8T1	800-07990-02	A0	AX-RJ48-8T1 AX-R-RJ48-8T1	800-02286-01 800-02288-01	A0 A0

Table 19 Hardware Compatibility Matrix (continued)

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
MPSM-8-T1E1	800-24473-07	A0	AX-RJ48-8T1	800-02286-01	A0
			AX-R-RJ48-8T1	800-02288-01	A0
			AX-RJ48-8E1	800-02408-01	A0
			AX-R-RJ48-8E1	800-02409-01	A0
			AX-SMB-8E1	800-02287-01	A0
			AX-R-SMB-8E1	800-02410-01	A0

## Special Installation and Upgrade Requirements

Existing customers should use the upgrade procedure [Service Module Upgrades, page 46](#) to upgrade. A graceful upgrade from any release prior to the current release is supported.

For new customers, the image is pre-installed and should use the PXM installation procedure to upgrade to future maintenance releases.

A graceful upgrade from any release prior to the current release is supported (for example, MGX 1.1.3x, 1.1.4x or 1.2.2x to MGX 1.3.16), 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, see [Instructions to Abort PXM Upgrade, page 42](#).

## 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 run to properly upgrade the software.

The script resolves the FREEDM buffer issue described in anomaly CSCds66176; ports are lost sometimes after softswitch or resetcd. The algorithm to allocate FREEDM buffers was changed 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 lose ports if the card is upgraded to Release 1.1.32 or greater.

A README file, which describes how to run the script and shows an example of the script output, is contained in the Release bundle TAR file located on Cisco.com.

## Executing the Script

Execute the script under the following conditions:

- 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 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 causes the card to lose ports. Therefore, ports must be moved to another card before upgrading this card.

## Upgrade Procedure for Non-Redundant PXM

Upgrading a switch with non-redundant PXMs is an ungraceful upgrade. An ungraceful upgrade from any release prior to the current release is supported (for example, MGX 1.1.3x, 1.1.4x or 1.2.2x to MGX Release 1.3.16).

**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.

```
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.

```
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 1.1.34 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 is reset and goes into the 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 42.](#)”

---

During the graceful upgrade procedure, if after the **newrev** command the non-active card enters the MISMATCH state, execute 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.

### Aborting an Upgrade from Release 1.1.3x and Above

If the upgrade needs to be aborted for any reason during the upgrade process from release 1.1.3x and above, execute the following command:

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

### Aborting an Upgrade from Release 1.1.2x

If the upgrade needs to be aborted for any reason during the upgrade process from release 1.1.2x, follow these instructions.

---

- Step 1** If the abort is required before the **newrev** command is entered, skip to Step 8.
- Step 2** Enter the following commands if the upgrade process is past the **newrev** stage.
- Step 3** On the active PXM, enter **shellConn**
- Step 4** Enter **smCardMibVer = 21**
- Step 5** Enter **saveDBToArchive <PXM SlotNo>, 0**
- Step 6** Enter **uploadBram <PXM SlotNo>, <PXM SlotNo>**.

The *<PXM SlotNo>* should be **7** for the MGX 8850 (PXM1) 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 MGX 8230 switch (even if the active PXM is in slot 2 use slot **1**).

The example that follows is for the MGX 8850.

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

- Step 7** If RPM cards are also on this node, perform the following steps 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 8** 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** 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 does not boot when it is plugged in. The service module must be RMA'ed.



**Note** Consult your Support Representative before performing any software upgrade.

## Manual Configuration of Chassis Identification

This section describes 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 rejects the node on discovery, and the node remains 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 Modules 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.

See the procedure below, which is also outlined in the *Cisco MGX 8850 Installation and Configuration Guide*.

- 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:
 

```
unix-prompt> tftp <ip address of the MGX 8220 shelf >
tftp> bin
1tftp> put <boot filename> AXIS_SM_1_<slot#>.BOOTkj
```
- Step 4** Ensure that TFTP downloaded the appropriate boot code by verifying the flash checksums.
  - a.** Login to the shelf.
 

```
unix-prompt> tftp cc <slot #>
tftp> chkflash
```
  - b.** 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, you cannot revert back during the installation process.

- 
- Step 1** Download the service module firmware to the shelf. See [Service Module Boot/Firmware Download Procedure, page 43](#).



**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, reset the card. The service module comes 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 commands:

a. `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, check that the version matches the image on the disk to make it consistent with PXM upgrade/downgrade.

---

b. `newrev sm <slot> <version>`

where:

*<slot>* is the service module that is being upgraded, and *<version>* is the service module image on the disk.

c. `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.

---

## MPSM 8-port T1/E1 Licensing Overview

A description of the MPSM 8-port T1/E1 hardware is available in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Hardware Installation Guide, Releases 2 Through 5* online.

For general information on configuration of the MPSM 8-port T1/E1 in general, and general information on configuration of the licensing feature, refer to Chapter 9 in the *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Configuration Guide, Release 5* online.

Refer to the following section for licensing alarm information specific to PXM1-based MGX switches.

## MPSM License Alarms

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

- [Node License Alarms](#)
- [Slot License Alarms](#)

### Node License Alarms

Node license alarms are raised when the count of the feature licenses in the PXM license pool database on the switch is considered invalid.

Node license alarms can happen under the following conditions:

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

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

On PXM1 platforms, use the PXM **dspscd** command to troubleshoot the node license alarm. As shown in the following example, if the switch is in the node license alarm state, the *cardIntegratedAlarm* will be *minor* and the *cardMinorAlarmBitMap* will indicate *License Alarm*:

```
M8850_R1.1.7.PXM.a > dspscd

ModuleSlotNumber:      7
FunctionModuleState:   Active
FunctionModuleType:    PXM1-OC3
FunctionModuleSerialNum: SAG05304YHH
FunctionModuleHWRev:   D0
FunctionModuleFWRev:   1.3.10.065
FunctionModuleResetReason: Restoreallcnf
LineModuleType:        PXM-UI
LineModuleState:       Present
SecondaryLineModuleType: SMFIR-4-155
SecondaryLineModuleState: Present
mibVersionNumber:     1.2.20
```

```

configChangeTypeBitMap:    No changes
cardIntegratedAlarm:      Minor
cardMajorAlarmBitMap:     Clear
cardMinorAlarmBitMap:     License Alarm
BkCardSerialNum:          SBK042501CN
TrunkBkCardSerialNum:     SBK05070188
FrontCardPCBNumber:       800-06229-04
TrunkBkCardPCBNumber:     800-05351-01
UIBkCardPCBNumber:        800-03688-01

SrmBackCardPCBNumber:     Not Applicable

```

```
M8850_R1.1.7.PXM.a >
```

Node license alarms are cleared by validating licenses in the license pool. This is done by applying the special Rekey feature license to the node using the **cnflic** command. When the pool licenses are validated, any existing slot license alarms are also cleared and normal operation is restored.

For the procedure to rekey feature licenses, see the “Rekeying Feature Licenses” section of the *Cisco MGX 8850 (PXM1E/PXM45)*, *Cisco MGX 8950*, *Cisco MGX 8830*, and *Cisco MGX 8880 Configuration Guide, Release 5* online.



#### Note

If the switch is in node license alarm, you must rekey the PXM license pool *before* proceeding with any other license management tasks. Failure to resolve node license alarms can lead to the invalidation of previously generated license keys due to sequence number mismatches.

## Slot License Alarms

Slot license alarms are raised under the following conditions:

- The node license alarm has been raised indicating an invalid count of licenses in the PXM license pool database. When a node license alarm is raised, all cards that are using feature licenses go into the slot license alarm state.

Slot license alarms raised under this condition can be cleared by rekeying the PXM license pool. For the procedure to rekey feature licenses, see the “Rekeying Feature Licenses” section of the *Cisco MGX 8850 (PXM1E/PXM45)*, *Cisco MGX 8950*, *Cisco MGX 8830*, and *Cisco MGX 8880 Configuration Guide, Release 5* online.

- The slot in alarm has acquired or oversubscribed one or more licenses while these licenses were not available in the license pool.

For example, on the PXM1 platform this situation might occur when a card is configured to use licenses. The card slot configuration is removed with the **clrsmentf** command. The licenses are assigned to another card, and then the card slot configuration is restored.

Slot license alarms raised under this condition are cleared by adding the required number of licenses to the PXM license pool or by releasing corresponding licenses from other slots, so they become available to the slot in alarm. If slots in alarm have redundancy, you must add licenses to cover both the primary and secondary slots to clear the alarms.

On PXM1 platforms, use the PXM **dspliclms** command to troubleshoot slot license alarms. The output of this command indicates which MPSM cards are in the slot license alarm state.

The following example shows the output of the PXM **dsplicalms** command on the PXM1 platform. In this example, the MPSM card in slot 22 is in slot license alarm:

```
M8850_R1.1.7.PXM.a > dsplicalms
Slot  Critical  Major  Minor  || Slot  Critical  Major  Minor
-----|-----|-----|-----|
 1         0       0       0    || 17         0       0       0
 2         0       0       0    || 18         0       0       0
 3         0       0       0    || 19         0       0       0
 4         0       0       0    || 20         0       0       0
 5         0       0       0    || 21         0       0       0
 6         0       0       0    || 22         0       0       1
 7         0       0       0    || 23         0       0       0
 8         0       0       0    || 24         0       0       0
 9         0       0       0    || 25         0       0       0
10         0       0       0    || 26         0       0       0
11         0       0       0    || 27         0       0       0
12         0       0       0    || 28         0       0       0
13         0       0       0    || 29         0       0       0
14         0       0       0    || 30         0       0       0
15         0       0       0    || 31         0       0       0
16         0       0       0    || 32         0       0       0
```

```
M8850_R1.1.7.PXM.a >
```

On PXM1-based platforms, the output of the PXM **dsplccd** *<slot>* command also shows if a card is in slot license alarm. The display shows how much time is left in the alarm grace period and if provisioning is allowed with the **addcon** command.

The following example shows the output of the PXM **dsplccd** *<slot>* command of an MPSM-8T1-FRM card in a PXM1 platform in the slot license alarm state:

```
M8850_R1.1.7.PXM.a > dsplccd 22
Card License Alarm:           Minor
Service Module Type:         MPSM-8T1E1
Service Module Serial Number: SAD073103HH
Provisioning Allowed:         Yes
Grace-Period Remaining:       4 Days, 23 Hrs

=====
Allocated License Type      Quantity
-----|-----
RateControl                  1

=====
Programmed License Type      Quantity
-----|-----

=====
Programmed Licenses Registered:      N/A
License Registration Node:           --
License Registration Chassis Serial No: --

M8850_R1.1.7.PXM.a >
```

On PXM1-based platforms, the MPSM **dsplccd** command indicates if a card is in slot license alarm. If the card is in the slot license alarm state, the *cardIntegratedAlarm* is *minor*, and the *cardMinorAlarmBitMap* indicates *License Alarm*.

The following example shows the output of the **dspcd** command on an MPSM-8T1-FRM card in a PXM1 platform in the slot license alarm state:

```
M8850_R1.1.22.MPSM8T1.FRM.a > dspcd

ModuleSlotNumber:      22
FunctionModuleState:   Active
FunctionModuleType:    MPSM-8T1-FRM
FunctionModuleSerialNum: SAD073103HH
FunctionModuleHWRev:   02
FunctionModuleFWRev:   030.000.004.016-P2
FunctionModuleResetReason: Reset by PXM
LineModuleType:       LM-RJ48-8T1
LineModuleState:      Present
mibVersionNumber:     102
configChangeTypeBitMap: No changes
cardIntegratedAlarm:  Minor
cardMinorAlarmBitMap: LICENSE ALARM
```

#### Front Card Info

```
PCB PART NO-(800 LEVEL): 800-24473-01
PCB PART_NO-(73 LEVEL): 73-9197-01
PCB REVISION (800 LEVEL):
PCB SERIAL NO:          SAD073103HH
CLEI CODE:              0
MANUFACTURING ENG:     0x0
RMA TEST HISTORY:      0x0
```

#### Back Card Info

```
PCB PART NO-(800 LEVEL): 000-00000-00
PCB PART NO-(73 LEVEL): 00-00000-00
PCB REVISION (800 LEVEL): AC
FAB PART NO-(28 LEVEL): 28-02011-01
PCB SERIAL NO:          B75816
MANUFACTURING ENG:     0x1C
RMA HISTORY:           0x0
```

```
M8850_R1.1.22.MPSM8T1.FRM.a >
```

On PXM1-based platforms, the output of the MPSM **dspliccd** command also shows if a card is in slot license alarm.

The following example shows the output of the **dspliccd** command of an MPSM-8T1-FRM card in a PXM1-based platform in the slot license alarm state:

```
M8850_R1.1.22.MPSM8T1.FRM.a > dspliccd
Card License Alarm:      Minor
Service Module Type:    MPSM8T1E1
Service Module Serial Number: SAD073103HH
Provisioning (addcon) Allowed: YES

=====
Needed License Type      Needed Licenses
-----
RateControl              1

=====
Allocated License Type   Allocated licenses
-----
RateControl              1

=====
Programmed License Type  Programmed licenses
```

```

-----
=====
Programmed License Registered:    NO
License registration node:       NONE
License registration chassis:    NONE
=====
M8850_R1.1.22.MPSM8T1.FRM.a >

```

**Note**

If the switch is in node license alarm, you must rekey the PXM license pool *before* proceeding with any other license management tasks. Failure to resolve node license alarms can lead to the invalidation of previously generated license keys, due to sequence number mismatches.

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

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

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

## Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New* in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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