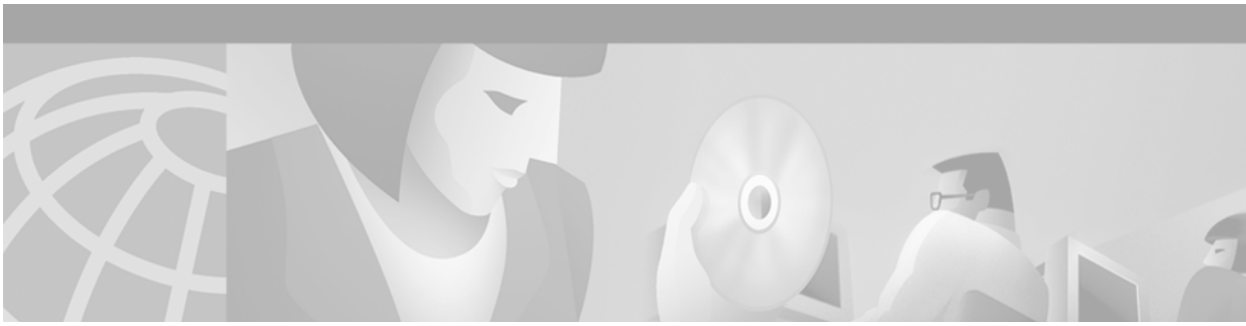


Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.2(11)YP1 for MGX 8850 and MGX 8950 Release 3.0.10 (PXM45)

Contents

About These Release Notes 2
New Features 2
MGX 8950 Support for RPM-XF 3
EiBGP Load Balancing 3
IP Accounting Counters 4
Multiple Actions under Police Command 4
QoS Sub Optimal Link Utilization 5
RPM-XF Redundancy Support 5
Features Not Supported in This Release 6
Network Management Features 6
SNMP MIB 6
RPM-XF Limitations and Restrictions 6
Notes and Cautions 8
RPM-XF auto_config File Management 9
Card Management 10
RPM-XF Bootflash Precautions 10
Open Caveats—Release 12.2(11)YP1 11
Resolved Caveats—Release 12.2(11)YP1 21
Compatibility Notes 38
RPM-XF Boot File and Firmware File Names and Sizes 38
RPM-XF Compatibility Matrix 39

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

MGX RPM-XF Hardware 39
Cisco IOS Release Compatibility Information 39
Using XModem to Download Flash to RPM-XF Cards 40
Related Documentation 42
Obtaining Documentation 42
World Wide Web 42
Documentation CD-ROM 42
Ordering Documentation 42
Documentation Feedback 43
Obtaining Technical Assistance 43
Cisco.com 43
Technical Assistance Center 43
Cisco TAC Web Site 44
Cisco TAC Escalation Center 44

About These Release Notes

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

Note that for Release 3.0.10, the user documentation (command reference, overview, and installation and configuration guides) use the MGX Release 3 and Cisco IOS documents in addition to this release note.

Product documentation for MGX 8850 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850r30/index.htm
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850r30/rpm/index.htm

New Features

The MGX RPM-XF is a next-generation, high performance model of the RPM for the MGX 8850 and MGX 8950 platforms, using PXM45 processor modules. It is a router module based on an RM7000A MIPS processing engine that fits into slots 1-6 and slots 9-16 in the MGX 8850 and slots 1-6 and slots 11-16 in the MGX 8950.

The RPM-XF hardware provides forwarding technology for packet switching capabilities in excess of 2-million pps. The forwarding engine is packet based and is interfaced to the midplane of the system through a combination of switch interface technologies. For more information on the RPM-XF, refer to the *Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 3.*

MGX 8950 Support for RPM-XF

As of this release, MGX 3.0.10, the MGX 8950 supports the MGX RPM-XF card set. The MGX RPM-XF card set can occupy any of the available service module slots in the MGX 8950, which are slots 1-6 and slots 11-16.

EiBGP Load Balancing

To balance load by BGP on multiple paths to destination, traffic is directed on multiple available paths between autonomous systems (AS) by gateway routers.

The following CLI are used to implement this feature.

Command	Description

maximum-path <*nums*>	Configure maximum number of EiBGP parallel routes.
	For example:
	`bgpbox-zenith-CE1(config)#router bgp 4`
	`bgpbox-zenith-CE1(config-rout)#maximum-paths 3`
	`bgpbox-zenith-CE1(config-rout)#end`

show ip bgp	This command has been enhanced to show the multipaths.
	Each multipath is marked as 'multipath'.
	The bestpath is marked as 'multipath' and 'bestpath'.
	The output also has what flavour of multipath is enabled.
	For example:
	`bgpbox-zenith-CE1#sh ip bgp 141.22.0.0`
	`BGP routing table entry for 141.22.0.0/16, version 18`
	`Paths: (2 available, best #1)`
	`Multipath: eBGP`
	`Advertised to non peer-group peers:`
	`7.0.76.9`
	`100 5`
	`7.0.76.2 from 7.0.76.2 (100.0.0.2)`
	`Origin IGP, localpref 100, valid, external, multipath, best`
	`100 5`
	`7.0.76.9 from 7.0.76.9 (100.0.0.9)`
	`Origin IGP, localpref 100, valid, external, multipath`

Limitations:

- If there are multiple alternate paths for the peering point, only one of the paths is utilized for a given prefix.
- Only per-flow load balancing is supported. Per-packet load balancing is not supported.
- Supported only in MPLS/VPN networks.
- Load balancing proportional to the link's bandwidth [dmz-linkbw] is not supported. The load balancing will be performed on the available links with equal costs.
- The maximum number of paths that can be used for load sharing is 6. This is the current IOS limitation too.

- Load balance will not work if RDs are same with RR. RDs have to be different if RRs are used.
- CEs in different VPNs using same RDs does not work.

IP Accounting Counters

MGX RPM-XF stores the packet/byte counters based on precedence/dscp values on a per interface level at input ONLY.

The following CLI have been added or enhanced for this release to implement this feature:

Command	Description
ip accounting ?	pop20-slot6(config-if)#**ip accounting ?** precedence Count packets by IP precedence on this interface dscp Count packets by dscp on this interface
ip accounting precedence ?	pop20-slot6(config-if)#**ip accounting precedence ?** input received packets and bytes
ip accounting dscp ?	pop20-slot6(config-if)#**ip accounting dscp ?** input received packets and bytes
show int [interface] precedence	pop20-slot5# **show int [interface] precedence**
show int [interface] dscp	pop20-slot5# **show int [interface] dscp**
clear counters	pop20-slot5#**clear counters**

Limitations:

- Counters are mainatined ONLY at input per interface.
- There is no count of dropped/transmitted based onDSCP/PREC packets per interface.

Multiple Actions under Police Command

The MGX RPM-XF **police** command is now similar tothe IOS/RPM command. Therefore, multiple **exceed** and **conform** actions can be applied on the **police** command.

The **police** CLI command has been enhanced as follows:

Prior to this release, the **police** command had no menus and all parameters were listed on one line, as shown in the following example.

```
domino80p01-z001#sh policy test1z
    ............
    police 128000 8000 8000 conform-action transmit exceed-action drop
```

This allows only one value for *conform-action* and *exceed-action*.

The newly enhanced **police** command functions as shown in the following example.

```
ipfrtx90r14-01(config-pmap-c)#police 128000 8000 8000
ipfrtx9(config-pmap-c-police)#conform-action transmit
ipfrtx9(config-pmap-c-police)#exceed-action set-dscp 28
ipfrtx9(config-pmap-c-police)#exceed-action set-mpls 2
```

Note that multiple **conform-action** and **exceed-action** parameters can be configured.

QoS Sub Optimal Link Utilization

RPM-XF uses VTMS as a scheduling algorithm. VTMS schedules queues based on the current link utilization in real time. The previous version of the VTMS algorithm was efficient and mapped well in an ASIC or network processor. However, it did not fully utilize the link.

In this release, a fix is made (via a new CLI command) to allow the user to specify the over subscription factor on a queue. The factor is in the range on 1-31 and can be denoted as 2n. An over subscription factor of n = 2 on any queue, essentially means to subscribe that queue by a factor of 4 (2n where n (in this example) is 2; so 2 raised to power 2=4).

The new syntax for bandwidth and priority commands are:

```
[no] bandwidth {<kbps> | percent <percentage> | remaining percent <percentage>}
[maximize-utilization [<max-shift>]]

[no] priority {<kbps> | percent <percentage>} [maximize-utilization
```

RPM-XF Redundancy Support

RPM-XF 1:N redundancy is used to switch configuration and traffic from one RPM-XF module to anotherRPM-XF module. Route processing continues with minimal traffic loss even if an RPM-XF fails and there is no operator or direct access to swap the failed card or fix the problem. Currently we support RPM-XF warm redundancy, which ensures Layer 2 state restoration. Layer 3 state is restored via convergence.

Note When resetting a shelf with RPM-XFs configured for 1:N redundancy, it is recommended that you bring up the primary slots in active state.

The main benefits of 1:N Reduundancy are:

- An RPM-XF card with hardware problems can be fixed while the redundant standby card takes over its functionality.
- Software upgrades are easier and can be done with less downtime.
- LAN interface redundancy supported with MAC addresses of primary RPM-XF copied to standby RPM-XF.
- 1:N Redundancy support for Gigabit Ethernet interface backcards during front card switchover.
- Y cable redundancy support for POS backcards during front card switchover. (With Y cable, 1:N redundancy is restricted to N = 1).

The following are the general guidelines for redundancy on the RPM--XF:

- **Addred** is not allowed between RPM-PR and RPM-XF.
- To configure redundancy, the Primary RPM-XF should be in Active state and Secondary RPM-XF card must be in Active/Standby state.
- Removal of the Active RPM-XF back card does not cause switchover to the standby RPM-XF.
- User has to make sure that **E:RPM/auto_config_slot#** is created before adding redundancy. This may require a login to primary card through the command line and manually adding **boot config e:auto_config_slot#** followed by a **write mem**.
- Executing **switchcc** back-to-back with **switchredcd** can cause problems. We recommend giving a gap of at least 5 seconds between **switchredcd** and a **switchcc**.

- IOS software on a standby card should be the same or higher version than the Active RPM-XF card.
- Booting the card from an image on tftp server is not recommended when the card is in redundancy group. The card should be booted from image in bootflash or PXM disk only.
- Configuring the standby RPM-XF is not recommended.

Features Not Supported in This Release

The following features are not supported in this release.

- LSC Redundancy
- MPLS TE tunnels on ATM Interfaces
- VC Merge
- RPM-PR to RPM-XF upgrade
- OIR of backcards without interfaces in shutdown mode
- Per packet load balancing
- Modem connectivity on Auxiliary port
- ROMMON's Xmodem functionality does not support the Speed option.

Network Management Features

Network management features are detailed in the *CWM Release 11.0.10 Release Notes* at: http://cisco.com/univercd/cc/td/doc/product/wanbu/svplus/index.htm

SNMP MIB

SNMP MGX Release 3.0.10 MIB are provided with the delivery of this release. The MIB is in standard ASN.1 format and is located in the same directory within the release bundle on CCO. These files may be compiled with most standards-based MIB compilers. The tar file for MIB contains the file that contains the MIB release notes. This contains only MGX MIBS.

Cisco IOS MIBS are not part of this bundle. They are part of 12.2(11)T1 CCO release.

RPM-XF Limitations and Restrictions

The RPM-XF limitations and restrictions that apply to this release are as follows:

- **E: RPM/auto_config_slot#** must be created before adding redundancy. This may require a login through the CLI and manually adding the **boot config** command followed by a **write mem**.
- PVPs can not operate at a rate greater than 599039 kbps.
- High speed VC (SCR greater than or equal to 599,039 kbps) would not get full-configured rate for single flow (unique source and destination IP address). This happens because for high speed VCs, the PXF creates two queues and these queues can't be shared for same stream. Sharing two queues for same stream would cause out of sequence packets.

- PXF queue selection algorithm may cause traffic drop for multiple stream going to same destination via multiple paths. When the PXF gets a packet, it selects the output queue based on source and destination IP address. These addresses hash into one of the queues for the selected destination. So if there are multiple paths for the same destination, there is a possibility that multiple streams would hash to one queue, causing some queues to overflow, while others might be under-utilized.
- PXF buffer depletion may occur if packets of the same size (especially packets greater than 640 bytes) are sent to a congested interface.
- Currently VBR-nrt and VBR-rt are treated with same priority system wide.
- RPM-XF PVP only supports UBR.
- PVP in RPM-XF is not OAM managed.
- If out-of-sync SPVC or SPVP exist on RPM-XF, shrinking of PNNI partition would not be permitted.
- A single RPM-XF can only function as either an Edge LSR or as an LSC, but not as both.
- Because RPM-XF only supports UBR, VBR-rt and VBR-nrt, on the PXM, **dsppnportrsrc** for RPM-XF port will show 0 available resource for CBR, ABR and signaling service types. Also, **cnfpnportcac** for CBR and ABR will be rejected.
- If RPM-XF is configured as an eLSR, RPM-XF does not support incoming VC-merge LVCs. There is a problem logged against LSC module that it cannot support both VC-merge/non-VC-merge supporting VSI slaves at the same time. So for now, if RPM-XF eLSR is part of a cell based MPLS network (with RPM-PRs or AXSMs in the same node), disable the VC-merge feature on LSC. (Note that VC-merge is enabled on LSC by default).
- RPM-XF eLSR only supports at most two MPLS sub-interfaces. Attempting to configure over the limit will result in an error message.
- Although RPM-XF VSI slave supports connections statistics Get command, only packets and bytes counts are available. Therefore, **show xtag cross-connect traffic int xtagatm** connection statistic display on LSC are actually packet counts from RPM-XF eLSR.
- OIR of MGX-1GE and MGX-1OC12POS-IR back cards are supported only with interfaces in *shutdown* state.
- MGX-1GE back card does not have the capability to provide line loopback.
- Flow Control Option is not configurable with MGX-1GE back card.
- MGX-1GE back card does not support SFP security.
- Line loopback and internal loopback cannot be set at the same time for the MGX-1OC12POS-IR back card with AMCC Mux.
- **pos ais-shut** command is not supported on MGX-1OC12POS-IR back card.
- Traffic rate per flow is at half the interface speed for POS/GigE interfaces in this new release.
- Autonegotiation is not recommended to be toggled on GigE interfaces when traffic is going through. This may result in permanent disruption of traffic.
- For UBR 2 queues always exist which would result in half the Flow rate for each flow because of hashing algorithm hashing into single queue .

The performance limits supported in this release are the following:

- 2K ATM SPVC Connection endpoints
- 2K IDBs
- 4K LVCs

- 100 VPCs
- 256 Policymap
- 100 OSPF neighbors
- 6 IOS-based cards in MGX shelf
- 500 VRFs: 500
- 500 BGP CE Peers
- 100 RIP CE sessions
- 500 Static CEs
- 100,000 VPN Routes per PE
- 250K non-VPN Routes per RPM-XF
- 50 Xtag interfaces per RPM-XF
- 300 OAM enabled connections

For more RPM-XF performance details, contact your sales representative.

Notes and Cautions

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

- Attempting to initiate RPM-XF switchover when **write mem** is in progress on the active RPM-XF card may lead to the card coming up with a partial configuration. When an **addred** is executed, an automatic **write mem** is triggered on the primary RPM-XF. If the primary card fails when the **write mem** is in progress, the card may come up with a partial configuration. The duration of **write mem** depends on the configuration size and can take up to 4 minutes to complete.
- There is a new stable “Boot-Hold” state displayed on the PXM45 when **dspcds** is executed. This state indicates that the RPM-XF is running only boot image. This state is reached when config register is set to 0x1 or when the bootldr cannot find the run-time image, but found the boot image. Enter **cc** to access the RPM-XF from the PXM45.
- Valid boot image need not be the first file in the boot flash. The RPM-XF will load from any valid boot image from the **bootflash:**. The run-time image can be the first file in the boot flash and RPM-XF will come up with that image.
- Trying to change PCR value of VP tunnel or changing MTU of switch interface with more than 4K VCs may cause CPU hog.
- If there is a large number of VCs (PVCs or LVCs or both) on RPM-XF card, executing disruptive operations on the main switch interface (int switch1) may cause flapping of protocols that run on these VCs. Examples of disruptive operations are **clear int switch1** and modification of PVP parameters. These operations cause deactivation and re-activation of all VCs under the main switch interface. Depending on the number of VCs, the time required to complete such operations may exceed certain protocol timeout limit. Examples of protocols that may be affected are OSPF and TDP/LDP.
- RPM-XF VSI slave tends to output informational warning/trace back messages caused by misconfigurations and CAC failures (onto console/IOS log file). These messages are mostly for information/debugging purpose. When these messages are observed, confirm that connection status is still intact and traffic is still passing successfully.

- Due to PXF scr granularity, the configured scr on IOS *pvc* CLI may not be the same as the actual scr programmed in the PXF. PXF bandwidth chunk size is 18 kbps; all PXF VC scr will be programmed as multiples of 18 kbps. For instance, if the PVCs were configured with 50 kbps as pcr, 54 kbps would be programmed in PXF. **show atm pvc** display will show 50 kbps, and VSI Slave will account 50 kbps during CAC. However, 54 kbps is actually being used. So as a result, when bandwidth usage is reaching the maximum value, both VSI Slave and PNNI will continue to allow connection provisioning, because VSI Slave and PNNI available bandwidth shows more than PXF actually has left.
- **Saveallcnf** (issued on the PXM45/B card) captures configuration data saved by the RPM-XF card (as well as AXSM and PXM45 cards), and saves it on the active PXM45/B card's hard disk. Configure the RPM-XF to store its configuration on the PXM45/B hard disk (E:/RPM) by entering **boot config e:auto_config_slot#** in the running configuration of the RPM-XF. To ensure that the saved file contains the latest RPM-XF configuration, execute the **write mem** command on each RPM-XF card prior to the entering **saveallcnf** command. This also ensures that the RPM-XF files on the active PXM45 hard disk will contain the latest configuration to be saved.
- For ELSR to LSC connectivity, the default control VC used is 32. If PNNI partition exists with VCI 32 as part of its partition range, when an MPLS partition is added, there are two options to handle the situation:
  - Add the MPLS controller and define its partition with available range. On eLSR, define control VC from any VCI value within the range defined in partition. The same VC should be defined on LSC on xTag interface.
  - Reconfigure PNNI partition to spare the control VC usage both on RPM-XF and AXSM, AXSM/B or AXSM-E APS Management Information.
- Whenever the RPM-XF configuration is changed, enter the **write mem** command on the RPM-XF to save the configuration. If this is not done, the changed configuration will be lost on an RPM-XF card reboot or RPM-XF switchover, in the case of redundancy.

RPM-XF auto_config File Management

The RPM-XF *auto_config_slot#* file stores the configuration for the RPM-XF card. The *slot#* portion of the name should be set to the logical slot number that corresponds to the RPM-XF card. This file can be stored in bootflash or in the E:RPM directory on the PXM45 hard disk. The configuration is also stored in NVRAM using the name startup-config.

When the RPM-XF card is inserted or rebooted, it searches for the configuration file in the following sequence:

1. If there is an auto_config file corresponding to its logical slot on the PXM45 hard disk, the RPM-XF card uses the configuration stored on the hard disk.
2. If boot variable points to configuration stored in the PXM45 hard disk or Bootflash and if the file is not found, the card comes up as Active-F with the default configuration.
3. If there is no auto_config file on the hard disk, then the NVRAM version is used.

Note In case of RPM-XF redundancy, the configuration should always be stored in *auto_config_slot#* file in the E:RPM directory of the PXM45 hard disk. Failure to find the auto_config file will lead to aborting of a user-initiated switchover (**switchredcd**) and a fatal error will be flagged.

Card Management

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

- There is a new stable state displayed on the PXM **dspcds** command—**Boot-Hold**, which signifies that the RPM-XF is running the boot image only. On the RPM-XF, the prompt will display as *boot>*
- The run-time IOS image cannot be used as a bootloader to load a different IOS image.
- Change of console speed on the terminal server may cause the card to end up in the ROMMON state. To avoid this, set the config register to **0**x2102.

  Another workaround is to enter **cont** on the ROMMON within 2 minutes of going into ROMMON state. This will bring the card to its original stable state.

  Note It is recommended to always use 9600 baud as the console speed.

- The IOS version of the runtime as well as the boot image will be displayed in the **dspcd**, **dsprevs**, and **dsprevs -s** output. The version will be displayed under the heading of IOS version. Revision Control is not available for RPM-XF (like RPM**-PR).**

  Note The commands **loadrev** and **setrev** do not apply for RPM-XF.

RPM-XF Bootflash Precautions

The RPM-XF bootflash is used to store boot image, configuration and *run- time* files. Erasing the boot image from the Flash will cause the card to not boot.

The RPM-XF boot image, which comes loaded on the Flash, will work for all RPM-XF IOS images. Therefore, there is no reason to delete or move the factory installed boot image.

In order to avoid any unnecessary failures that would require card servicing, do the following:

- Never erase the boot file from the RPM Flash
- Never change the position of the boot file on the RPM Flash
- Use care when “squeezing” the Flash to clean it up.

As long as the boot file remains intact in the first position on the flash, the RPM-XF will boot successfully.

If the bootflash is corrupted, use the **tftpdnld** procedure described in the *Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide* or xmodem procedure described in “Using XModem to Download Flash to RPM-XF Cards” later is this document to download a new boot image.

Open Caveats—Release 12.2(11)YP1

Table 1 lists the open caveats in Cisco IOS Release 12.2(11)YP1.

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1

Caveat Number	Description
CSCdx05456	Symptom: A "shut/noshut" issued on RPM-XF LSC under a XTagATM interface may cause a VSI error to be displayed on console and log. Example of error: `19:28:33: %VSICORE-1-VSIMAJORERR: VsiError: VsiError, Vsi Major Alert: VsiErr:TCB Timeout List Enqueue Failure,` Condition: A "shut/noshut" issued on RPM-XF LSC under a XTagATM interface may cause VSI module to display a warning/error prompt on user console terminal. Workaround: None. The error message is harmless.
CSCdx06018	Symptom: Output traffic drop on VBR VCs at or below SCR, when multiple streams going to same destination via multiple VBR VCs Conditions: This happens when there are equal cost paths via VBR VCs. PXF queue selection algorithm may cause traffic drop for multiple stream going to same destination via multiple paths. When PXF gets a packet, it would select the out going interface based on source and destination IP address. These addresses hash into one of the queues for selected destination. So if there are multiple paths for same destination, there is a possibility that multiple streams would hash to one queue, causing some queues to overflow while others to be under-utilized. Workaround: None

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description

CSCdx07534	Symptom:
	VSI reassert error happened on ELSR when "switchredcd" or "resetcd" on ELSR is executed.
	Example of errors:
	`-Process= "RPMXF VSIS", ipl= 0, pid= 103`
	`%VSICORE-4-VSICGENERR: VSICORE: VsiError: VsiErr:Connection`
	`Reassert Error (VcoEntry)`
	The number of errors depends on the number of LVCs being established.
	Conditions:
	VSI reassert error/warning messages show up on console terminal when **switchredcd** or **resetcd** was performed on the ELSR.
	Workaround:
	None. The error message is harmless.

CSCdx83217	Symptom: `**show controllers**' doesn't display the info for all the interfaces. Conditions: When the `**show controllers**' command is issued, not all the information for all the subinterfaces is displayed as it is supposed to. Workaround: Use `**show controllers** <*interface name*>' to find out the info for a particular interface.
CSCdx96089	Symptom: Input to RPM-XF card could get fowarded to the console xterm window. Condition: During the bringup of the RPM-XF card (while still in "INIT" state), if user issued a change card command "cc" from PXM to RPM-XF, after that the keyboard input could be fowarded to the console screen instead. This condition could last until the card finishes parsing the configuration and goes to ACTIVE state. Workaround: Unknown

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy05346	Symptom: Following parameters are missing from the Switch Get Configuration Response for RPM-XF: shelf id, shelf_len, sw_type_len. Conditions: LSC shows some of the elements in switch general info type in some commands. In particular, the fields '*shelf-name*' and '*switch-type-str'* are missing in a Switch Get Configuration Response from RPM-XF card. So the commands '**show contr xtag**' and '**show contr vsi ses** *{sesn #}*' display incomplete/empty fields with an RPM-XF VSI slave. Workaround: None
CSCdy09308	Symptom: The SNMP objects ifDescr and ifName display empty information for some sub-interfaces. Condition: Retrieving the SNMP objects ifDescr or ifName for non-fixed interfaces, via SNMP mib walk, shows no information. Workaround: None.
CSCdy14560	Symptom: Delete or modify XTAG with LSC descriptor will freeze CLI session Conditions: When configuring the extend-port command under an XTagATM interface, user needs to specify the remote port descriptor. If user configures an XTagATM interface with the LSC port descriptor, (Note that this is an invalid configuration), and attempt to correct it by deleting/modifying the XTagATM, then the CLI session will freeze. Workaround: User can refresh the LSC by the following steps: 1. Remove LSC configuration: under int switch1, execute "**no label-control-protocol vsi id** <*x*>" 2. then delete the XTagATM with the bad descriptor. 3. re-configure the LSC: under int switch1, execute "**label-control-protocol vsi id** <*x*>" 4. re-configure the XTagATM interface with the correct remote port descriptor (either to an AXSM(E), RPM-PR or another RPM-XF).

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy17457	Symptoms: "**sh int**" command output shows wrong packet number after shut/no shut interface Conditions: If a user executes a shut/no-shut on the interface, when traffic is being pumped, one might see wrong output from "**sh int**" command. Workaround: clear counters on that interface should fix the problem.
CSCdy24858	Symptom: When setting the vbr-rt and/or vbr-nrt pcr and scr to the maximum that the RPM-XF allows (1197656), traceback messages are generated. Conditions: When the user is configuring a switch connection on the RPM-XF that will be vbr-rt or vbr-nrt. This occurs on the master and slave sides. These messages are only generated the first time (after a reload) that a connection is created using the max pcr and scr. Workaround: Using the value of "1197641" as the max pcr and scr will avoid getting the traceback messages.
CSCdy26703	Symptom: Ping from CE to PE fails. Condition: In MPLS/VPN network, if CE is connected to PE via PPPoATM link with VRF being enabled on the Virtual Template, then Pings from CE to PE fails. The PPPoATM session is established but the PXF is observed to stall sometimes. Workaround: None

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy29651	Symptom: On ELSR, if user changes the LSC switch partition vpi range to exclude the active control-vc, the active control-vc will not be cleaned up eventhough the corresponding xtagatm interface on the LSC flaps. Conditions: This can only happen when the MPLS sub-interface on the ELSR is shutdown or does not exist. Because if there is a MPLS sub-interface on the ELSR (with control-vc or lvcs under it), switch partition would not allow user to change the vpi/vci ranges that active control-vc/lvcs are using. This means this scenerio would at most happen with the control-vc, it will never happen with lvcs. Workaround: On LSC, perform one of the followings: 1. **clear int xtagatm** <#> 2. shut/noshut the **xtagatm** <#>
CSCdy31541	Symptom: ZFPGA Input EOP/SOP interrupts logged on the console continuously leading to relatively high CPU utilization and RPM-XF reload. Zenith-FPGA, interrupt 0x00000009 (istat 0x00002800) received: Mxt4600asserted inappropriate SOPMxt4600 asserted inappropriate EOP Condition: With 1-cell PDU traffic payload and bidirectional flow, ZFPGA interrupt error messages may appear on console window - causing high CPU utilization which may cause RPM-XF to reload. Workaround: None.
CSCdy32033	Symptom: After changing the switch partition bandwidth, MPLS interface was not updated properly. Condition: When service policy is applied to the MPLS interface and switch partition is changed from 30% to 50%, MPLS interfaces are not updated accordingly. Workaround: Configure the partition before configuring the MPLS interface.

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy36602	Symptom: The download speed option is unavailable in the Xmodem command list options on RPM-XF card. Conditions: While trying to use Xmodem functionality on RPM-XF card (while RPM-XF card is in rommon state), it was noticed that download speed option is not avilable. Workaround: None
CSCdy42274	Symptom: Performance may drop for max data rates if the PXF is reloaded. Conditions: When the traffic is pumped at a high rate to get the max thoroughput possible on the interface, after PXF reload performance may deteriorate. Workaround: Perform a shut/no shut on the interface
CSCdy45808	Symptom: Queues does not utilize full link bandwidth. Condition: Burst type set to high on all queues when only one VC is configured with LLQ. Workaround: None
CSCdy48760	Symptom: Execution of `sh contr gig1/0' command output shows that remote end auto-negotiate mode is set to `auto' rather than to `force'. Conditions: When the auto-negotiation is enabled on the local GigE interface and disabled on the remote GigE interface with both interfaces UP, `**sh contr gig1/0**' command output shows remote end set to "auto" rather than to "force". Workaround: None

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy50514	Symptom: On the GigE interface, PXF starts dropping incoming packets with the reason `undefined vcci' Conditions: With VLAN configured on the sub-interface of the GigE interface, PXF may start dropping incoming packets with the reason `undefined vcci' Workaround: VLAN re-configuration may fix the problem.
CSCdy52276	Symptom: Continuous "Unknown External Interrupt" error messages seen on RPM-XF console port window. Condition: Physically moving RPM-XF card from MGX8850 to MGX8950 may result in display of "Unknown External Interrupt" continuous error message on console window. Workaround: reset the card
CSCdy53728	Symptom LLQ when defined with class queues does not achieve full SCR and also improper traffic distribution between the queues. Condition With less traffic on class queues and more traffic on LLQ and with rates such that SCR is congested, its observed that the bandwidth is not being shared accurately among the queues as per the ratios assigned to them. LLQ sometimes get less traffic or more traffic and its not deterministic Workaround Enable MaxUtilization and OverSubscription on LLQ and Class Queues.

CSCdy54083	Symptom:
	Error messages displayed on console and in log:
	`*Sep 4 17:47:35.531: %P2IPC-4-RSLVACKERR: ssiIpcComEpNameResolve():`
	`Received msg 0 instead of RESOLVE ACK, arg 0 -Process= "RPMXF TRAPCLIENT", ipl= 0, pid= 101`
	Conditions:
	After RPM-XF is reloaded, one will see this error message on their console window and in RPM-XF log.
	Workaround:
	None. This error is only informative message.

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy55392	Symptom: PXF may reload while traffic is being pumped. Conditions: If the MAC address is configured on the GigE interface while the traffic is flowing from switch interface towards the GigE interface, it may cause the PXF to reload. Workaround: 'shut' the GigE i/f, configure the MAC address and do a 'no shut'
CSCdy55959	Symptom: Shaping was not getting enough bandwidth Condition: One class has shaping enabled and traffic is flowing on this class as well as on default class. default class was getting more bandwidth than the class with shape command. Workaround: None.
CSCdy56421	Symptom: Unable to add more than 3993 pvc conns Conditions None Workaround: None
CSCdy56593	Symptom: RPM-XF rebooted when traffic flowing. Condition: RPM-XF is configured with 1000VC each with 512Kbps SCR and CBWFQ is enabledon each. When Traffic is flowing on all these VC's, it was observedthe RPM-XF rebooted by itself. Workaround: None
CSCdy62920	Symptom: VP switch connection with PCR < 200 cells is disappeared after reload RPM-XFsystem Conditions: Add VP connection with rate PCR < 200 cells and reload system Workaround: Delete and re-add the VP connection

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy73751	Symptom: The outgoing traffic on GigabitEthernet interface stopped flowing Conditions: With auto-negotiation enabled on the GigE interface and outward traffic flowing; if the hardware send a Barium error interrupt, traffic may stop. Workaround: Performing a shut/noshut on GigE interface should restart the traffic.
CSCdy75132	Symptom: The XTags keep on flapping in an LVC setup (RPM-PR and RPM-XF combination). Conditions: A "switchredcd" was done between an ELSR RPM-XF redundant pair. With 4000 LVCs created and 2k static ip routes originating from each end; Bidirectional traffic (OC-10 rate) was flowing properly from each end & Tx = Rx was justified. Secondary Standby card, came up as active but the 2 XTags, XTagATM111 the AXSM Xtag and XTagATM9122 the ELSR XTAG kept on flapping. Workaround: Stop traffic momentarily so that the Xtags can come up and then resume the traffic.
CSCdy81197	Symptom: Suboptimal Link utilization for OC12 is observed when LLQ and Class queues are defined. Conditions: With traffic congestion on OC12 VC is such that lowest bandwidth queue has more traffic than its allocated for. Workaround: None
CSCdy81267	Symptom: The Avg and Max Latency for PQ traffic is more than expected. Conditions: Class Queues have traffic more than SCR and LLQ has traffic less than its configured bandwidth. Workaround: None

Table 1 Open Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCea49948	Multiple Crashinfo due to IPC Messages **Symptoms:** Multiple crash info files are generated, filling the bootflash of RPM-XF card. **Conditions:** It may happen due to polling that involves IPC communication between Processor Switch Module 45 (PXM45) controller and RPM-XF card. RPM-XF switchover may lead to this issue. **Workaround:** None
CSCdz82543	Cannot cc to RPM-XF due to Messages on the Console **Symptoms:** You may not be able to log into a Cisco Route Processor Module XF (RPM-XF), although when you display the status of the module from a Processor Switch Module 45 (PXM45) controller, no irregularities are shown. If you manage to establish a console connection into the RPM-XF, continuous traceback messages may be displayed on screen. **Conditions:** These symptoms are observed when RPM-XFs are installed in an MGX45 shelf, Cisco WAN Manager is configured to poll the RPM-XFs for statistics and scripts run on the node that log into every module sequentially. **Workaround:** None

Resolved Caveats—Release 12.2(11)YP1

Table 2 lists the resolved caveats in Cisco IOS Release 12.2(11)YP1.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1

Caveat Number	Description
CSCdu53656	A Cisco device running IOS and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP protocol is not enabled by default, and must be configured in order to accept traffic from an explicitly defined peer. Unless the malicious traffic appears to be sourced from a configured, trusted peer, it would be difficult to inject a malformed packet. BGP MD5 is a valid workaround for this problem. Cisco has made free software available to address this problem. For more details, please refer to this advisory, available at http://www.cisco.com/warp/public/707/cisco-sa-20040616-bgp.shtml.
CSCea28131	A Cisco device running IOS and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP protocol is not enabled by default, and must be configured in order to accept traffic from an explicitly defined peer. Unless the malicious traffic appears to be sourced from a configured, trusted peer, it would be difficult to inject a malformed packet. BGP MD5 is a valid workaround for this problem. Cisco has made free software available to address this problem. For more details, please refer to this advisory, available at http://www.cisco.com/warp/public/707/cisco-sa-20040616-bgp.shtml.
CSCdw20568	Symptom: Cisco Class-Based QoS mib - CISCO-CLASS-BASED-QOS MIB - is not supported on RPM-PR and RPM-XF. Condition: SNMP walk on CISCO-CLASS-BASED-QOS mib on RPM-PR and RPM-XF cards return no values for mib objects. Workaround: None.
CSCdw55382	Symptom: The output of the command **sh swi conn vcc/vpc** doesn't show the value of the maximum cost field correctly. Conditions: Maximum cost was configured explicitly on the master endpoint of the connection to a value of 4294967295 i.e. 0xFFFFFFFF. Workaround: Use **dspcon** command on the PXM to look at the configured value.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdw57105	Symptom: Show sub-interface counter shows incorrect value. Condition: When there is some drop on the sub-interface, value becomes negative, causing the numbers to be incorrect. Workaround: Issue **clear counter** command.
CSCdw68738	Symptom: Cobalt From RP Own Errors counter increments in **show hard pxf dma count** output. This does not affect data/traffic. Conditions: Spontaneous increments of these counters have been noticed always with no specific side effect. Workaround: None

CSCdw69661	Symptoms:
	Invalid Epid Error message seen.
	`00:00:10: %P2IPC-4-COMEPDELETED: ssi_ipc_epid_idx_validate()`
	`Non-existing CommEp 60010F8 has invalid tag 4096;`
	`Expected tag is 0`
	`-Process= "P2IPC Receive Process", ipl= 0, pid= 17`
	Condition:
	After RPM-XF switchover, standby card prints invalid Epid Error messages as VSI Slave Epid on Standby is not in use.
	Work around:
	None
	Further problem description:
	The error messages are harmless traceback as it happens on the Standby card.

CSCdw88019	Symptom: Loopbacks provided on GigE backcard should be renamed to 'internal' and 'external' from 'mac' and 'driver', respectively Conditions: Previously, RPM-XF software used "mac" and "driver" as loopback command parameters to mean internal and external loopbacks respectively. These parameters have been replaced by "internal" and "external" as loopback command parameters. Workaround: Use **show controllers gigabitEthernet 1/0** command and user documentation to correlate the loopback type with the loopback configuration.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdw88767	Symptom: Humvee counters show improper value and counters cannot be cleared. Conditions: While traffic is passing through, counters wrap around and become negative. Workaround: None.
CSCdw95563	Symptom: After increasing the PCR value of PVP, traffic is getting dropped at new rate. Condition: When PCR value is changed, it does not take affect so VP is still shaped at old rate. Workaround: Delete the VP and readd it.
CSCdx00982	Symptom: SNMP **get** returns a different value for pcr/scr from what was configured. Conditions: The connection was added through CWM/SNMP with a value such that on conversion from cps to kbps and then back to cps does not give back the original cps value. Workaround: While adding connections through CWM/SNMP, do not use such values (in cps) for scr/pcr for which conversion from cps to kbps and then back to cps does not give back the original value.
CSCdx12730	Symptom: All the PVCs on the switch1 interface go to INACTIVE state. Conditions: Any destructive command can cause this condition. Some of them are: 1. **clear interface switch1** command was issued. 2. Modification of the atm pvp tunnel. 3. Changing MTU value of Switch1 interface or sub-interface. Workaround: Issue **clear interface switch1** command.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdx16897	Symptom: Performance issue observed in cleaning up and creating LVCS. Conditions: With RPM-XF as headend eLSR, it takes about 1 minute to cleanup and recreate 500 LVCS. Workaround: None
CSCdx44836	Symptom: Modifying an existing PVP may cause the following VSI error to be displayed on console or logged: `04:57:14: %VSI_VRM-4-GENERR_NUM: VSIRmGetXConnectInfo, line 6658: Vsis RM error <Failed to search Vco database for lcn =>>, info=1` Conditions: This error only happens if the existing PVP has a configured switch-conn-vpc but is not routed yet (only slave end is added). This error is informational only to indicate that there is no remote cross-connect information to be returned because the vpc is not routed yet. There is no service impact. Workaround: Complete the VPC connection by adding the remote end.
CSCdx46583	Symptom: Need to verify IOS images on PXM Hard Drive and in RPM-XF Flash. Conditions: In order to do the health check of the IOS images on PXM Harddisk & Bootflash, a new CLI command is being introduced: **debug rpm check_image now x:**<*image-name*>. Workaround: None.
CSCdx49122	Symptom: **dspcd** <*slot#*> for RPM-XF slot doesn't show the full CLEI code / Serial number. One character at the end is missing. Condition: When **dspcd** command is executed on PXM. Workaround: **cc** to RPM-XF card and do **sh rpm cdmgmt scmExtPollInfo** to find the correct CLEI code and Serial number.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdx52025	Symptom: Could not correlate output packets dropped on sub-interface with switch1 interface packet drop counters. Condition: Sub interface counters don't have any drop counters, so if any packet is dropped on a particular sub-interface, it is shown on switch1 interface but not on that sub-interface. Workaround: Use **sh atm pvc** <*vpi/vci*> to see all the drops.
CSCdx55586	Symptom: Setting ccCopyEntryRowStatus to ACTIVE returns "general error" status even if the row is correctly configured. Conditions: Attempting to use the CISCO-CONFIG-COPY-MIB to copy a configuration file. Workaround: None.

CSCdx58504	Symptom:
	RPM-XF **show switch conn vcc|vpc** displays NSAP in following format:
	`47.0091.8100.0000.0001.6443.6c58.0000.0109.1802.00`
	which is not consistent with PXM **dspcons** display.
	Conditions:
	RPM-XF "**show switch conn vcc|vpc**" displays NSAP in following format:
	`47.0091.8100.0000.0001.6443.6c58.0000.0109.1802.00`
	which is not consistent with PXM "**dspcons**" command output:
	`47.009181000000000164436c58.000001091802.00`
	Workaround:
	None.

CSCdx62385	Symptom: flapping of BGP causes RPM-XF reload. Condition: The reload happened after the routes exceeded 102K vrf route limit and **clear ip bgp *** is executed. Workaround: Do not exceed the given limit of Maximum number of vrf routes which is 102k.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdx64337	Symptom: After changing the console baud rate the console may behave unpredictably. Conditions: The console responsiveness is unpredictable. You may need to hit enter many times to get a prompt back. Workaround: Avoid changing the baud rate of the console port. To recover from the erratic console behavior, you will need to perform a system reload.
CSCdx64361	Symptom: ROMMON console can lock up after pasting a large buffer. Conditions: The ROMMON console driver can run out of descriptors with a sufficiently large paste buffer (~1k). After this happens, the console appears hung. Workaround: Paste data to the ROMMON console in increments less than 1k. Once the ROMMON console driver runs out of descriptors, the only way to recover is to perform a system reset or power cycle.
CSCdx69702	Symptom: The output counters displayed under **show policy-map int** <*sw1.x*> are not incremented. Condition: When an output service policy is applied to a subinterface and the policy map includes class maps with no actions. Workaround: Either do not configure class maps with no actions or rearrange the class maps within a policy map so the class maps with no actions are last.
CSCdx71190	Symptoms: A software-forced reload may occur on a router, and the Open Shortest Path First (OSPF) process may fail. Conditions: This symptom is observed on a Cisco 7200 series router that is running Cisco IOS Release 12.2(10.7)T1 and that is configured for Border Gateway Protocol (BGP) tag switching with OSPF in an autonomous system. The router may reload when the main link bandwidth is changed to switch to the shortest path. This behavior may cause the router OSPF process to fail. Workaround: There is no workaround.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdx76951	Symptom: There was humvee error on RPM-XF card. Condition: When ever switchcc is done or card comesup, humvee generates some errors. These errors are harmless, unless they are incrementing coutinously. Workaround: None.
CSCdx80500	Symptom: A CLI command is needed to show the history of the messages that RPM-XF received from the Shelf Manager on PXM. Also, a second command is needed to clear this log. Condition: NONE Workaround: None
CSCdx87265	Symptom: Deletion trap is not sent out for notOnRpm connections. Condition: RPM-XF reset or switch over before provisioned connections get saved into configuration. Workaround: None.
CSCdx91454	Symptom: The status LEDs for the management backcard are not illuminated correctly. Conditions: When the boot image is used, the status LED on the back of the management back card is not illuminated as it should be. With the system image status LED on the back of the management back card is illuminated but the LM1OK LED on the front card is off instead of green. Workarounds: Use the 's**how interface FastEthernet2/0**' and '**show interface FastEthernet2/1**' commands to view the status of the management backcard.
CSCdx93773	Symptoms: Packet drop on egress sub-interface below configured rate. Conditions: Sending traffic at SCR rate on a vbr pvc with high SCR value configured. Workaround: None

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy02182	Symptom: When the GigabitEthernet device driver detects an error with the link to the front card, it does not automatically try to correct the situation properly. Conditions: When the GigabitEthernet device driver detects an error with the link to the front card you may see messages similar to: `BARIUM ERROR EVENT: send reason 7 slot 1` The device driver should then try to reset the link to the front card and continue but does not. Workaround: When you receive an error message similar to the one described in conditions, you should shutdown and restart the interface to clear the condition.
CSCdy03275	Symptom: Traffic is not passing in frame-based MPLS network when RPM-XF is configured as P router Conditions: RPM-XF configured as P router. Workaround: None
CSCdy05871	Symptom: Tail drops on PXF queue while sending traffic at OC12 rate. Conditions: Configure interface speed as more than 500Mbps (X) and send more than X/2 single flow traffic Workaround: Use multiple flows (different source-destination)
CSCdy09544	Symptom: LLQ (Low Latency Queue) starves low priority traffic. Condition: Traffic exceed configured bandwidth for the LLQ, but still below the configured SCR (Sustain Cell Rate). There are drops on other low priority classes even though they are in their configured limit. Workaround: None

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy11581	Symptom: Received traps for "Fast Ethernet Interface Down(60662)" and "Fast Ethernet Interface up(60661)" have incorrect *ifName* contents. Conditions: Generate "Fast Ethernet Interface up(60661)" by doing admin up on interface and notice the contents of "*ifName*" in the trap PDU on CWM or any other SNMP trap client. Do the same for "Fast Ethernet Interface Down(60662)" by doing admin down on the interface. The contents for "*ifName*" is "**FastEthernet/12/0**". The correct value should be **FastEthernet/**<*log-slot*>/<*bay*>/<*port*>. Workaround: None.
CSCdy15295	Symptom: cbQosQueueingStats and cbQosREDClassStats MIB entries are not populated. Condition: SNMP mib walk on RPM-XF for cbQosQueueingStats and cbQosREDClassStats mib objects return no entries. Workaround: None.
CSCdy23757	Symptom: Data stops flowing from VLAN after removal and insertion of GigabitEthernet backcard is done. Conditions: After removal and insertion of GigabitEthernet backcard, data traffic from the configured VLAN stops. Workaround: Perform `**no encaps dot1q**' on the VLAN interface and then re-add all the configuration defined on that VLAN.
CSCdy26495	Symptom: class-map output queue packet counter doesn't show the correct number of packets. Conditions: With policy-map attached, send the traffic with the rate not to see drops Workaround: Use the class-map total number of packet counters.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy26755	Symptom: Execution of PXM command "**dspcd**" for the RPM-XF card does not show 800 Level Rev number for the frontcard and the backcard Conditions: Execution of PXM command "**dspcd**" on a particular slot, even when backcard and front card is present, the 800 level Rev information is blank. Workaround: `**cc**' to RPM and use the command `**sh rpm eeprom**'
CSCdy27852	Symptoms: Excessive delay for LLQ packets. Conditions: Send LLQ packets during congestion of the non LLQ queues. The issue only happens for vbr-nrt connections with rate <= 128 kbps, if excessive traffic is pumped on queues other than LLQ and default queue. The issue would happen for all rates if excessive traffic is pumped on the default queue. Workaround: none
CSCdy28132	Symptoms: Traffic forwarding stops. You may see the traffic forwarded to the wrong VC. Conditions: Shut followed by no shut on the MPLS interface with multi-vc could lead to this issue. This is an intermitant issue. This could also happen if the LVCs go down and come back up for any other reason. The issue is seen only with VRF prefixes. Workaround: shut/no shut the interface. If problem persists, switch to a redundant card if one is available.
CSCdy30260	Symptom: Protocol flap is observed and data labeled transfer stops temporarily on RPM-XF when RPM-XF card in adjacent slot is removed. Traffic resumes after around 100 seconds. Conditions The issue happens when RPM-XF card in the adjacent slot is pulled out, the RPM-XF cards being in one of the following pair of slots: (1,2), (3,4), (5,6), (9,10), (11,12), (13,14), (15,16). (MGX 8850) (1,2), (3,4), (5,6), (11,12), (13,14), (15,16). (MGX 8950) This happens with or without 1:N redundancy. Workaround Do not use RPM-XF cards in adjacent slots with combination as above.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy31406	Symptom: RPM-XF frame-based P router's PXF reloaded after "shut" PE subinterface. Conditions: RPM-XF configured as P router. Upon "shut" on PE's subinterface, PXF module on P router got reloaded. Workaround: None.
CSCdy37576	Symptom Cannot add a dax connection between the RPM-XF (10) and the AXSM (1) Condition From the PXM perspective, the available CPS on the axsm is different than that of the rpm-xf. however when i am picking the lower value to add the pvc the pvc is still failing to add. the rpm-xf is showing reason as no resources. Work-around Unknown
CSCdy38362	Symptom: Line Alarm seen on Gigabit ethernet interface on MGX-1GE even when administratively down. Conditions: If interface was in alarm prior to being shutdown, it continues to persist even after the shutdown. Workaround: Doing a 1:N redundancy switch over (if redundancy is configured) to the standby RPM-XF clears this alarm on the card and at the node level. This is to be done after the Gigabit Ethernet interface is shutdown, and a "**write mem**" has been done on the active. The alarm can be cleared by regular means such as ensuring proper cabling, SFP type match with other end, and administratively enabling other end prior to shutting down this end. If the other end is also not running the same software release that includes this bug then the alarm will move to the other end on trying such workaround. If redundancy is not configured, resetting the front card (disruptive) would be needed to clear the alarm.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy39423	Symptom: Traffic stops going out on GigE interface when enabling autonegotiation parameter. Conditions: With traffic flowing, if *autonegotiation* parameter is enabled on GigE interface, traffic may stop. Workaround: shut/no shut on the GigE interface
CSCdy39806	Symptom: "No switch partition configured" trace back error logged. Condition: Setup eLSR with vp tunnel mode on RPM-XF Workaround: None
CSCdy39861	Symptom: Spurious memory trace back error logged when disable VRF forwarding under switch sub-interface Conditions: Disable VRF forwarding under switch sub-interface on RPM-XF LER Workaround: None
CSCdy40930	Symptoms: LLQ packets dropped on SAR because of lack of buffers Condition: Congest the pvc with the LLQ traffic Workaround: none Further problem description: The scheduler calculates the time it took to send a burst of traffic on a VC. This calculation results in an integer value which is a rounded down of the actual value. This rounding causes error in the scheduling time, which causes shaping inaccuracy. The fix is to try to keep the rounding error to a minimal.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy41773	Symptom: In case of GIGE backcard initialzation failure, further configuration on it may cause the RPM-XF card to reboot. Conditions: If the GIGE backcard initialization fails, loading start-up config or manual configuration that changes the uninitialized GIGE backcard configuration, might cause RPM-XF to get reset. Workaround: None
CSCdy45515	Symptom: Connection endpoint on RPM-XF Does Not Generate RDI Upon Receiving AIS Conditions: RPM-XF endpoint of a xpvc does not generate RDI upon receiving AIS. The RPM-XF atm pvc erroneously reports that RDI is generated. However, a display of the connection count at the corresponding AXSM on the node indicates that the RDI is, in fact, NOT generated. Workaround: unknown
CSCdy51893	Symptom: Class queues do not get programmed correctly.CBWFQ may not work correctly. Condition: Modify the policy map values associated to a particular subif. Workaround: shut/no shut on sub-interface
CSCdy53728	Symptom: LLQ when defined with class queues does not achieve full SCR and also improper traffic distribution between the queues. Conditions: With less traffic on class queues and more traffic on LLQ and with rates such that SCR is congested, its observed that the bandwidth is not being shared accurately among the queues as per the ratios assigned to them. LLQ sometimes get less traffic or more traffic and its not deterministic. Workaround: Enable MaxUtilization and OverSubscription on LLQ and Class Queues.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy55202	Symptom: **sh pol int** shows zero bandwidth for all the classes. Conditions: When ever class default is configured with some banwidth and policy is removed and reattached, all other class bandwidth becomes zero. This happens for mpls interfaces. Workaround: None.
CSCdy56345	Symptom: After removal and insertion of POS backcard, `Assertion Failure' tracebacks were observed. Conditions: When a policy map is configured on POS i/f and removal and insertion of the POS backcard is done, "Assertion Failure" tracebacks will be observed on the console window. Workaround: Remove the policy map and reapply it on the POS i/f. Further Problem Description: The issue is applicable to GigE backcard also.
CSCdy71426	Symptom: All the traffic on PXF stops. Conditions: If a service policy was attached to an interface, with no bandwidth leftover for default class. Any traffic pumped on this interface default class would cause PXF to freeze and hence stopping traffic. Workaround: Reconfigure the policymap to have some bandwidth for class-default and then reload the PXF microcode using 'micro reload pxf'.
CSCdy75485	Symptoms: All Layer 2 management packets are dropped, which causes all interfaces that depend upon keepalives to transition to the down state. Conditions: This symptom is observed on a Cisco 10000 series router in a configuration with a large numbers of interfaces. Workaround: Unknown

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCea49948	Multiple Crashinfo due to IPC Messages **Symptoms:** Multiple crash info files are generated, filling the bootflash of RPM-XF card. **Conditions:** It may happen due to polling that involves IPC communication between Processor Switch Module 45 (PXM45) controller and RPM-XF card. RPM-XF switchover may lead to this issue. **Workaround:** None
CSCdz82543	Cannot cc to RPM-XF due to Messages on the Console **Symptoms:** You may not be able to log into a Cisco Route Processor Module XF (RPM-XF), although when you display the status of the module from a Processor Switch Module 45 (PXM45) controller, no irregularities are shown. If you manage to establish a console connection into the RPM-XF, continuous traceback messages may be displayed on screen. **Conditions:** These symptoms are observed when RPM-XFs are installed in an MGX45 shelf, Cisco WAN Manager is configured to poll the RPM-XFs for statistics and scripts run on the node that log into every module sequentially. **Workaround:** None
CSCea16719	**Symptoms:** One of two redundant route reflectors (RRs) that are part of the same cluster may reload and may cause a Virtual Private Network (VPN) routing/forwarding (VRF) table to contain incomplete routes. Routes that originated elsewhere in network are in the Route Descriptor table but not in the VRF table, despite import statements and the fact that the routes were in the VRF table previously. **Conditions:** This symptom is observed in a cell mode Multiprotocol Label Switching (MPLS) VPN network. **Workaround:** To restore the missing routes, reset the Border Gateway Protocol (BGP) neighbor session to the RR that did not reload.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCea93735	**Symptom:** Control traffic not e dequeued from a Parallel Express Forwarding (PXF) processor towards the Route Processor (RP) thereby stopping control plane protocols' communication. **Conditions:** This symptom is observed on a Cisco MGX 8850/8950 series Route Processor Module XF (RPM-XF) in a MPLS environment. In a cell based MPLS network, the problem occurs if a MPLS packet with TTL < 2 reaches a PE router. In a frame based MPLS network, the poblem occurs if a MPLS packet with explicit null and with TTL < 2 reaches a P or PE router. **Workaround:** Configure "no mpls ip propogate-ttl" on all the routers in the MPLS network so that MPLS packets with TTL < 2 is not seen.
CSCeb09292	**Symptom:** Packets get dropped in the To-RP queue in PXF **Conditions:** When there is a huge traffic to (Route Processor)RP but is not supposed to be dropped. The problem occurs because PXF incorrectly stops sending the packets **Workaround:** None.
CSCdy57048	**Symptoms:** TCP transmit packets that are sent from a router in some configurations may be corrupted. This behavior may cause a TCP session to pause indefinitely in one direction. **Conditions:** These symptoms are observed with protocols that use TCP transport (Border Gateway Protocol [BGP] and Telnet are known to be affected). Configurations that may exhibit these symptoms include interfaces that are configured with Multiprotocol Label Switching (MPLS) or Multilink PPP (MLP) encapsulation. **Workaround:** None.
CSCeb08387	**Symptom:** Under rare situations Parallel Express Forwarding (PXF) may reload with the following message: `"%PXF-2-FAULT: T0 Local Bus Exception: CPU[t0r?c1] TBACB"` **Conditions:** The symptom persists while forwarding to a particular IP address. The address cannot readily be predetermined. **Workaround:** None.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCdy38691	**Symptoms:** A provider edge (PE) headend router that is running Multiprotocol Label Switching (MPLS) and that is connected via a Label Distribution Protocol (LDP) link to a neighboring provider (P) router may reload when one or more interfaces on the P router are unconfigured using the following sequence of commands (all commands are entered): a) "no mpls ip" global configuration command b) "no mpls ip" interface configuration command c) "shutdown" interface configuration command **Conditions:** This symptom is observed on LDP neighbors that are connected via label controlled ATM (LC-ATM) interfaces. The symptom may not occur when Tag Distribution Protocol (TDP) is the label signaling protocol. **Workaround:** Shut down the LC-ATM interface of the PE headend router before you enter the three above-mentioned configuration commands on the P router. **Alternate Workaround:** Do not use all three above-mentioned configuration commands to unconfigure the interface on the P router. Instead, use only the two interface configuration commands, that is, the <CmdBold>no mpls ip<noCmdBold> and <CmdBold>shutdown<noCmdBold> interface configuration commands.
CSCea93735	**Symptom:** Control traffic not e dequeued from a Parallel Express Forwarding (PXF) processor towards the Route Processor (RP) thereby stopping control plane protocols' communication. **Conditions:** This symptom is observed on a Cisco MGX 8850/8950 series Route Processor Module XF (RPM-XF) in a MPLS environment. In a cell based MPLS network, the problem occurs if a MPLS packet with TTL < 2 reaches a PE router. In a frame based MPLS network, the poblem occurs if a MPLS packet with explicit null and with TTL < 2 reaches a P or PE router. **Workaround:** Configure "no mpls ip propogate-ttl" on all the routers in the MPLS network so that MPLS packets with TTL < 2 is not seen.

Table 2 Resolved Caveats in Cisco IOS Release 12.2(11)YP1 (continued)

Caveat Number	Description
CSCeb06375	**Symptom:** Access list failed to work. **Conditions:** Basically, tearing down and recreating LVCs will cause the symptom. Normally it happens after the switch sub-interface is shutdown and then brought up. **Workaround:** Remove the access list and re-add it again.
CSCea49948	**Symptom:** Multiple crashinfo files generated thus filling the bootflash. After switchover to redundant card, and then switched back to active - this card failed to come active. After 3 tries to card was marked "failed" by the PXM. Condition: Upon RPM-XF switchover, crash info file gets generated. The cause of this crash is reusing the same IPC buffer (a second IPC send). This crash depends on the time the IPC buffer is reused. **Workaround:** None.
CSCdz82543	**Symptoms:** You may not be able to log into a Cisco Route Processor Module XF (RPM-XF), although when you display the status of the module from a Processor Switch Module 45 (PXM45) controller, no irregularities are shown. If you manage to establish a console connection into the RPM-XF, continuous traceback messages may be displayed on screen. **Conditions:** These symptoms are observed when RPM-XFs are installed in an MGX45 shelf and Cisco WAN Manager is configured to poll the RPM-XFs for statistics, causing scripts to run on the node and log into every module sequentially. **Workaround:** None.

Compatibility Notes

RPM-XF Boot File and Firmware File Names and Sizes

The following table displays the RPM-XF boot and firmware file names and sizes for this release.

Table 3 RPM Boot and Firmware File Names and Sizes

	File Name	File Size (in bytes)
Boot File	rpmxf-boot-mz	2698192
Firmware File	rpmxf-p12-mz	7625772

RPM-XF Compatibility Matrix

MGX SW version	3.0.10
IOS Version	12.2(11)YP1
CWM	11.0.10

MGX RPM-XF Hardware

Table 4 shows the front card and back card compatibility for the RPM-XF 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. 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 4 Hardware Compatibility Matrix

Front Cards	Part Number/ Min. Version	Rev.	Back Cards	Part Number/ Min. Version	Rev.
MGX-RPM-XF-512	800-09307-03	A0	MGX-XF-UI	800-09492-01	A0
			MGX-1GE	800-18420-03	A0
			MGX-1OC12POS-IR	800-08359-05	A0

Table 5 SFP Compatibility Matrix for MGX-1GE

SFPs	Part Number/ Min. Version	Rev.
MGX-GE-SX	30-1301-01	A0
MGX-GE-LHLX	30-1299-01	A0
MGX-GE-ZX	10-1439-01	A0

Cisco IOS Release Compatibility Information

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

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

Using XModem to Download Flash to RPM-XF Cards

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

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

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

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

```
rommon 2 > xmodem
usage: xmodem [-cy]
-c  CRC-16
-y  ymodem-batch protocol
rommon 3 >
```

The command line options for xmodem are as follows:

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

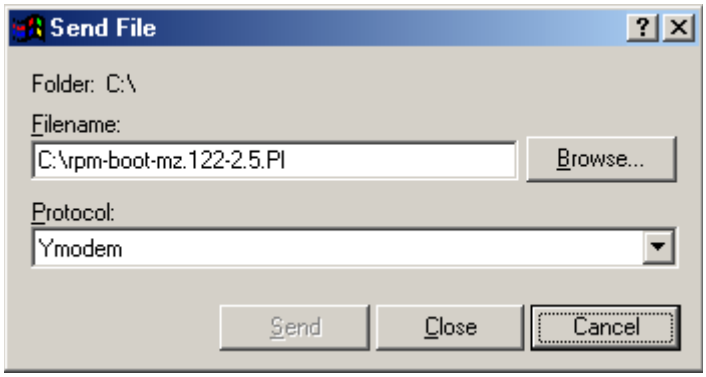
Note If you do not find the xmodem commands, then the xmodem feature is not available on this rommom version. In that case, you must return the card to Cisco.

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

For example:

```
rommon 4> xmodem -cy
Do not start sending the image yet...
Invoke this application for disaster recovery. Do you wish to
continue? y/n [n]: y
```

Step 3 Use the Transfer-->Send File option in HyperTerminal to start the image transfer.



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

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

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

Related Documentation

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

Note that for Release 3, the user documentation (command reference, overview, and installation and configuration guides) use the MGX Release 3 and Cisco IOS documents in addition to this release note.

Product documentation for MGX 8850 is available at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850r30/index.htm
http://www.cisco.com/univercd/cc/td/doc/product/wanbu/8850r30/rpm/index.htm

Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

World Wide Web

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

http://www.cisco.com

Translated documentation is available at the following URL:

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

Documentation CD-ROM

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

Ordering Documentation

Cisco documentation is available in the following ways:

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

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

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

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

Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click **Leave Feedback** at the bottom of the Cisco Documentation home page. After you complete the form, print it out and fax it to Cisco at 408 527-0730.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

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

We appreciate your comments.

Obtaining Technical Assistance

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

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- Download and test software packages
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- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

http://www.cisco.com

Technical Assistance Center

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

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

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

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

Cisco TAC Web Site

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

http://www.cisco.com/tac

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

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

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

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

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

Cisco TAC Escalation Center

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

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

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

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

This document is to be used in conjunction with the Cisco WAN Switching MGX 8850 Release 3 publications.