



Automatic ROMMON Upgrade For Cable Interface Line Cards

First Published: June 20, 2011

Automatic ROM Monitor (ROMMON) Upgrade feature enables the Cisco uBR10012 cable interface line cards to automatically update the ROMMON image whenever a newer version is available. This document provides information about the Automatic ROMMON Upgrade feature and configuration.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <http://tools.cisco.com/ITDIT/CFN/>. An account on <http://www.cisco.com/> is not required.

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Prerequisites for Automatic ROMMON Upgrade

Table 1: Cable Hardware Compatibility Matrix for Automatic ROMMON Upgrade for Cable Interface Line Cards, on page 2 shows the hardware compatibility prerequisites for the Automatic ROMMON Upgrade feature.

Table 1: Cable Hardware Compatibility Matrix for Automatic ROMMON Upgrade for Cable Interface Line Cards

CMTS Platform	Processor Engine	Cable Interface Line Cards
Cisco uBR10012 router	Cisco IOS Release 12.2(33)SCF and later releases <ul style="list-style-type: none"> • PRE2 • PRE4 	Cisco IOS Release 12.2(33)SCF and later releases <ul style="list-style-type: none"> • Cisco uBR10-MC5X20H • Cisco UBR-MC20X20V • Cisco uBR-MC3GX60V¹

¹ Cisco uBR-MC3GX60V cable interface line card is compatible with Performance Routing Engine 4 (PRE4).

Information About Automatic ROMMON Upgrade

The Cisco IOS Release 12.2(33)SCF introduces the Automatic ROMMON Upgrade feature, which enables the cable interface line cards (CLCs) to automatically upgrade the ROMMON image whenever a newer version is available.

The ROMMON is a bootstrap program that initializes the hardware and boots up the Cisco IOS software when the Cisco CMTS (or CLC) is powered on or rebooted. It is an integral part of the CLC firmware, which provides basic services such as CPU initialization, memory mapping, and image relocation.

Two types of ROMMON images exist on CLCs:

- Primary ROMMON image—This is the original image shipped with the system. This is a read-only image that cannot be erased or altered in the field. In case the secondary ROMMON image gets corrupted during upgrade, the primary ROMMON image is used to boot up the CLC.
- Secondary ROMMON image—This is a field upgradeable image which has the latest software version. This image is upgraded by the Automatic ROMMON Upgrade feature.

The ROMMON image may require updates due to feature additions or enhancements. The Automatic ROMMON Upgrade feature enables the CLC to upgrade the secondary ROMMON image without user intervention. The user is informed about the upgrade status through error or warning messages. For more information on the upgrade status, see [Verifying Automatic ROMMON Upgrade on a Cable Interface Line Card, on page 5](#).

Automatic upgrade of the secondary ROMMON image is performed only when the new image version is higher than the current secondary ROMMON image version. For example, if the secondary ROMMON image version is 160, then the ROMMON image upgrade will be performed only if the new image version is 161 or above.

New ROMMON versions are backward compatible. The updated ROMMON image can be used with the older Cisco IOS Release versions. If, for any reasons, older ROMMON version needs to be used, it is possible to downgrade the ROMMON image using the Automatic ROMMON Upgrade feature with few configuration changes.

To downgrade the ROMMON image, the following conditions must be met:

- The Cisco IOS Release version must support Automatic ROMMON Upgrade feature.
- Automatic ROMMON image downgrade must be enabled. See [Enabling Automatic ROMMON Downgrade on Cable Interface Line Cards](#), on page 4.
- The current ROMMON version should be higher than the downgrade version.

**Note**

The updated ROMMON image may contain critical bug fixes and feature enhancements. It is recommended that the ROMMON image is not downgraded, unless it is necessary.

By default, the automatic ROMMON image upgrade and downgrade are disabled for all CLCs. Use the cable linecard auto-rommon-upgrade command to configure automatic ROMMON image upgrade on CLCs. Use cable linecard auto-rommon-downgrade command to configure automatic ROMMON image downgrade on CLCs.

**Note**

Effective with Cisco IOS Release 12.2(33)SCF1, the automatic ROMMON image upgrade is enabled by default.

How to Configure Automatic ROMMON Upgrade on Cable Interface Line Cards

This section describes the following configuration procedures:

Enabling Automatic ROMMON Upgrade on Cable Interface Line Cards

This procedure describes how to enable or disable automatic upgrade of ROMMON images on CLCs.

**Note**

The automatic ROMMON upgrade is disabled by default on all CLCs. To perform automatic ROMMON upgrade on the cable interface line cards, use the cable linecard auto-rommon-upgrade command to enable automatic ROMMON image upgrade on all the line cards and then reload the line cards.

**Note**

Effective with Cisco IOS Release 12.2(33)SCF1, the automatic ROMMON image upgrade is enabled by default.

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	cable linecard auto-rommon-upgrade Example: Router(config)# cable linecard auto-rommon-upgrade	Enables automatic ROMMON image upgrade on all CLCs. Note Use the no form of this command to disable automatic ROMMON image upgrade on CLC.
Step 4	end Example: Router(config)# end	Returns to privileged EXEC mode.

Examples to Enable Automatic ROMMON Image Upgrade

The following example shows how to enable automatic ROMMON image upgrade on all CLCs:

```
Router> enable
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# cable linecard auto-rommon-upgrade
Router(config)# end
```

Enabling Automatic ROMMON Downgrade on Cable Interface Line Cards

This procedure describes how to enable or disable automatic downgrade of ROMMON images on CLCs.

**Note**

The automatic ROMMON downgrade is disabled by default on all CLCs, and we recommend that you do not change this default behavior.

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	cable linecard auto-rommon-downgrade Example: Router(config)# cable linecard auto-rommon-downgrade	Enables automatic ROMMON image downgrade on all CLCs. Note Use the no form of this command to disable automatic ROMMON image downgrade on CLC.
Step 4	end Example: Router(config)# end	Returns to privileged EXEC mode.

Examples for Automatic ROMMON Image Downgrade

The following example shows how to enable automatic ROMMON image downgrade on all CLCs:

```
Router> enable
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# cable linecard auto-rommon-downgrade
Router(config)# end
```

Verifying Automatic ROMMON Upgrade on a Cable Interface Line Card

On successful automatic ROMMON upgrade (or downgrade), the following two messages are observed in system logs:

- %UBR10KCLC-6-ROMMON_UPDATE_START
- %UBR10KCLC-6-ROMMON_UPDATE_DONE

For more information on these system messages, see the Cisco IOS CMTS Cable System Messages Guide at the following URL:

<http://www.cisco.com/en/US/docs/cable/cmts/system/message/uberrmes.html>

Troubleshooting Automatic ROMMON Upgrade failures

If automatic ROMMON image upgrade (or downgrade) fails, system error messages indicating one of the following reasons are observed in the system logs:

- ROMMON update disabled—Line card ROMMON update is temporarily disabled due to a limit on unsuccessful attempts. The card may not have the latest firmware
- ROMMON version error—Line card ROMMON version error. The line card may not have the latest version.
- ROMMON update error—Line card ROMMON update error. The line card ROMMON update can fail due to any one of the following reasons:
 - Failure to erase old firmware on the line card.
 - Failure to program new firmware.
 - Line card not responding.
 - Line card timeout.
 - Memory related failure.

If any of these syslog error messages are observed, wait for 10 minutes and then try to reload the CLC. For more information on how to reload a CLC, see:

http://www.cisco.com/en/US/products/hw/cable/ps2209/prod_installation_guides_list.html

If the problem persists collect the output of the show tech-support command. Contact your Cisco technical support representative and provide the representative with the gathered information.

For more information on the exact system error messages observed during ROMMON upgrade (or downgrade) failure, see the Cisco IOS CMTS Cable System Messages Guide at the following URL:

<http://www.cisco.com/en/US/docs/cable/cmts/system/message/uberrmes.html>

Additional References

Related Documents

Related Topic	Document Title
Cisco CMTS command reference	<i>Cisco IOS CMTS Cable Command Reference</i> http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html
Cisco CMTS System Messages Guide	Cisco IOS CMTS Cable System Messages Guide http://www.cisco.com/en/US/docs/cable/cmts/system/message/uberrmes.html

MIBs

MIB	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	—

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for Automatic ROMMON Upgrade

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to <http://tools.cisco.com/ITDIT/CFN/>. An account on <http://www.cisco.com/> is not required.

**Note**

The below table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 2: Feature Information for Automatic ROMMON Upgrade for Cable Interface Line Card

Feature Name	Releases	Feature Information
Automatic ROMMON Upgrade for Cable Interface Line Cards	12.2(33)SCF	<p>This feature enables the Cisco uBR10012 cable interface line cards to automatically perform ROMMON image upgrade or downgrade.</p> <p>The following commands were introduced:</p> <ul style="list-style-type: none">• cable linecard auto-rommon-upgrade• cable linecard auto-rommon-downgrade