



Upgrading to the Cisco ASR 1000 Series Routers ROMmon Image Release 12.2(33r)XN2

This document contains procedures for downloading independent ROM monitor (ROMmon) software onto the Route Processors (RPs), Embedded Service Processors (ESPs), and Shared Port Adapter Interface Processors (SIPs) on the Cisco ASR 1000 Series Routers. This document contains the following sections:

- [ROMmon Overview, page 1](#)
- [Compatibility Requirements, page 1](#)
- [Upgrading ROMmon, page 2](#)

ROMmon Overview

The ROMmon Release 12.2(33r)XN2 image is provided to customers in cases where a ROMmon upgrade is required. Because the Cisco ASR 1000 Series Routers are shipped either using ROMmon Release 12.2(33r)XN2 or a later ROMmon release, a ROMmon upgrade using the ROMmon Release 12.2(33r)XN2 image is probably only necessary in cases where a system message indicates one of the ROMmon on the Cisco ASR 1000 Series Routers needs an upgrade or a Cisco technical support representative suggests upgrading ROMmon.

The ROMmon software for RPs, ESPs, and SIPs can be upgraded collectively or individually using the `asr1000-rommon.122-33r.XN2.pkg` file. This is the only ROMmon software made available for the Cisco ASR 1000 Series Routers.

Compatibility Requirements

The `asr1000-rommon.122-33r.XN2.pkg` file can be used to upgrade RP, ESP, and SIP ROMmon at any time as long as the privileged EXEC or diagnostic mode prompt on the router can be accessed.



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Upgrading ROMmon

This section covers the following topics:

- [Upgrading ROMmon Overview, page 2](#)
- [Checking the Current ROMmon Version, page 2](#)
- [Upgrading ROMmon for All RPs, ESPs, and SIPs, page 2](#)
- [Upgrading ROMmon for a Single RP, ESP, or SIP, page 5](#)

Upgrading ROMmon Overview

The instructions in the “[Upgrading ROMmon for a Single RP, ESP, or SIP](#)” section on page 5 should only be used in cases when an individual ROMmon requires an upgrade and all of the other hardware has already been updated.

If you are unsure if a ROMmon upgrade is required or if you have installed a new RP, ESP, or SIP that requires an upgrade, see the “[Checking the Current ROMmon Version](#)” section on page 2.

Checking the Current ROMmon Version

Enter the **show rom-monitor slot** command to check the version of ROMmon running on any RP, ESP, or SIP in your Cisco ASR 1000 Series Router.

If the following output appears after the **show rom-monitor slot** command is entered, the RP, ESP, or SIP in the specified *slot* is already running ROMmon Release 12.2(33r)XN2:

```
System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2008 by cisco Systems, Inc.
```

If output indicating an earlier ROMmon version or anything appears on the console, a ROMmon upgrade may benefit the RP, ESP, or SIP.

Upgrading ROMmon for All RPs, ESPs, and SIPs

Follow this procedure to upgrade ROMmon for all RPs, ESPs, and SIPs on a Cisco ASR 1000 Series Router:

-
- Step 1** (Optional) Enter the **show rom-monitor slot** command for each piece of hardware in the router. The output reveals the current ROMmon versions, and is especially useful later in this process to help confirm the previous ROMmon version was upgraded. The output for this command is also useful in helping to determine if a ROMmon upgrade is required for a particular RP, ESP, or SIP. See the “[Checking the Current ROMmon Version](#)” section on page 2 for information on determining if a ROMmon upgrade is required for the RP, ESP, or SIP based on this output.
- Step 2** Copy the `asr1000-rommon.122-33r.XN2.pkg` file onto the bootflash: or usb[0-1]: file system using the **copy source-URL destination-URL** command.
- Step 3** Enter the **dir file-system** command to confirm the file was copied into the desired directory.

- Step 4** Enter the **upgrade rom-monitor filename URL all** command to begin the ROMmon image upgrade, where *URL* is the path to the ROMmon file.

**Caution**

Do not remove hardware, turn off power, or interrupt the router in any way during the ROMmon upgrade. Although the Cisco ASR 1000 Series Router should be able to recover from most interruptions during the ROMmon upgrade, certain scenarios may cause unpredictable problems.

- Step 5** Messages regarding the upgrade will appear on the console. Once these messages have stopped and the router prompt is available, enter the **reload** command to reload the router. The ROMmon upgrade is not complete for any piece of hardware until that piece of hardware is reloaded, and using the **reload** command in this context reloads all hardware on the router.

- Step 6** Enter the **show rom-monitor slot** command for each piece of hardware in the router to confirm the ROMmon has been upgraded.

**Note**

The versions of ROMmon in this example are provided for illustrative purposes only. Users should only see ROMmon Release 12.2(33r)XN2 or later on Cisco ASR 1000 Series Routers.

Example

```
Router# show rom-monitor 0

System Bootstrap, Version 12.2(20070807:170946) [cisco_rommon_rel_1_22 101], DEVELOPMENT
SOFT
WARE
Copyright (c) 1994-2006 by cisco Systems, Inc.

Router# show rom-monitor F0

System Bootstrap, Version 12.2(20070807:170946) [cisco_rommon_rel_1_22 101], DEVELOPMENT
SOFT
WARE
Copyright (c) 1994-2006 by cisco Systems, Inc.

Router# show rom-monitor R0

System Bootstrap, Version 12.2(20070807:170946) [cisco_rommon_rel_1_22 101], DEVELOPMENT
SOFTWARE
Copyright (c) 1994-2006 by cisco Systems, Inc.

Router# copy tftp bootflash:
Address or name of remote host []? 127.23.16.81
Source filename []? auto/tftp-boot/asr1000-rommon.122-33r.XN2.pkg
Destination filename [asr1000-rommon.122-33r.XN2.pkg]?
Accessing tftp://127.23.16.81/auto/tftp-boot/asr1000-rommon.122-33r.XN2.pkg...
Loading auto/tftp-boot/asr1000-rommon.122-33r.XN2.pkg from 127.23.16.81 (via
GigabitEthernet0): !!!
[OK - 553164 bytes]

553164 bytes copied in 1.048 secs (527828 bytes/sec)
Router# dir bootflash:
Directory of bootflash:/

   11  drwx           16384  Dec 2 2004 12:02:09 +00:00  lost+found
 14401  drwx           4096   Dec 2 2004 12:05:05 +00:00  .ssh
 86401  drwx           4096   Dec 2 2004 12:05:07 +00:00  .rollback_timer
```

```

12 -rw- 33554432 Nov 20 2007 19:53:47 +00:00 nvram_00100
13 -rw- 6401536 Dec 23 2004 19:45:11 +00:00 mcp-fpd-pkg.122-test.pkg
28801 drwx 4096 Nov 1 2007 17:00:36 +00:00 .installer
15 -rw- 553164 Nov 28 2007 15:33:49 +00:00 asr1000-rommon.122-33r.XN2.pkg
16 -rw- 51716300 Nov 14 2007 16:39:59 +00:00
asr1000rp1-espbase.v122_33_xn_asr_rls0_throttle.pkg
17 -rw- 21850316 Nov 14 2007 16:41:23 +00:00
asr1000rp1-rpaccess-k9.v122_33_xn_asr_rls0_throttle.pkg
18 -rw- 21221580 Nov 14 2007 16:42:21 +00:00
asr1000rp1-rpbase.v122_33_xn_asr_rls0_throttle.pkg
19 -rw- 27576524 Nov 14 2007 16:43:50 +00:00
asr1000rp1-rpcontrol.v122_33_xn_asr_rls0_throttle.pkg
20 -rw- 48478412 Nov 14 2007 16:45:50 +00:00
asr1000rp1-rpios-advipservicesk9.v122_33_xn_asr_rls0_throttle.pkg
21 -rw- 36942028 Nov 14 2007 16:47:17 +00:00
asr1000rp1-sipbase.v122_33_xn_asr_rls0_throttle.pkg
22 -rw- 14749900 Nov 14 2007 16:48:17 +00:00
asr1000rp1-sipspa.v122_33_xn_asr_rls0_throttle.pkg
23 -rw- 6049 Nov 14 2007 16:49:29 +00:00 packages.conf
14 -rw- 213225676 Nov 20 2007 19:53:13 +00:00
asr1000rp1-advipservicesk9.v122_33_xn_asr_rls0_throttle.bin

```

928833536 bytes total (451940352 bytes free)

Router# **upgrade rom-monitor filename bootflash:/asr1000-rommon.122-33r.XN2.pkg all**

Upgrade rom-monitor on Route-Processor 0

```

Target copying rom-monitor image file
Checking upgrade image...
1966080+0 records in
3840+0 records out
Upgrade image MD5 signature is 253f15daf89eea22b1db92d440d03608
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 253f15daf89eea22b1db92d440d03608
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the RP.

```

Upgrade rom-monitor on Embedded-Service-Processor 0

```

Target copying rom-monitor image file
Checking upgrade image...
1966080+0 records in
3840+0 records out
Upgrade image MD5 signature is 253f15daf89eea22b1db92d440d03608
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 253f15daf89eea22b1db92d440d03608
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the linecard.

```

Upgrade rom-monitor on SPA-Inter-Processor 0

```

Target copying rom-monitor image file
Checking upgrade image...
1966080+0 records in
3840+0 records out
Upgrade image MD5 signature is 253f15daf89eea22b1db92d440d03608
Burning upgrade partition...

```

```

1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 253f15daf89eea22b1db92d440d03608
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the linecard.

```

```
Upgrade rom-monitor on SPA-Inter-Processor 1
```

```

Target copying rom-monitor image file
Checking upgrade image...
1966080+0 records in
3840+0 records out
Upgrade image MD5 signature is 253f15daf89eea22b1db92d440d03608
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 253f15daf89eea22b1db92d440d03608
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the linecard.

```

```
Router# reload
```

```
<reload bootup output removed for brevity>
```

```
Router# show rom-monitor 0
```

```

System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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```

```
Router# show rom-monitor F0
```

```

System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2007 by cisco Systems, Inc.

```

```
Router# show rom-monitor R0
```

```

System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
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```

Upgrading ROMmon for a Single RP, ESP, or SIP

Use this procedure to upgrade ROMmon on a single RP, ESP, or SIP in a Cisco ASR 1000 Series Router:

-
- Step 1** (Optional) Enter the **show rom-monitor slot** command to see the current version of ROMmon currently on the hardware. See the [“Checking the Current ROMmon Version”](#) section on page 2 for information about interpreting this output.
 - Step 2** If the ROMmon image has not been copied onto the router, copy the `asr1000-rommon.122-33r.XN2.pkg` file that was made available as part of this special release onto the bootflash: or `usb[0-1]:` file system using the **copy source-URL destination-URL** command.
 - Step 3** Enter the **dir file-system** command to confirm the file was copied into the desired directory.

- Step 4** Enter the **upgrade rom-monitor filename URL slot** command to begin the ROMmon image upgrade, where *URL* is the path to the ROMmon file and *slot* specifies the hardware that will receive the ROMmon upgrade.

**Caution**

Do not remove hardware, turn off power, or interrupt the router in any way during the ROMmon upgrade. Although the Cisco ASR 1006 Router should be able to recover from most interruptions during the ROMmon upgrade, certain scenarios may cause unpredictable problems.

- Step 5** Messages regarding the upgrade will appear on the console. Once these messages have stopped and the router prompt is available, enter the **hw-module slot slot reload** command to reload the hardware that was upgraded. The ROMmon upgrade is not complete for any piece of hardware until that piece of hardware is reloaded.

**Note**

The **hw-module slot slot reload** command cannot be used to reload an active RP. If you must reload an active RP to complete a ROMmon upgrade, reload the RP using one of the following methods:

- Enter **reload** to reload the entire router.
- Force a switchover using the **redundancy force-switchover** command, and then enter the **hw-module slot slot reload** command on the RP after it has become the standby RP.

- Step 6** Enter the **show rom-monitor slot** command to confirm the ROMmon has been upgraded.

**Note**

The versions of ROMmon in this example are provided for illustrative purposes only. Users should only see ROMmon Release 12.2(33r)XN2 or later on Cisco ASR 1000 Series Routers.

Example

```
Router# show rom-monitor 0

System Bootstrap, Version 12.2(20070807:170946) [cisco-mcp_rommon_rel_1_22 101],
DEVELOPMENT SOFTWARE
Copyright (c) 1994-2006 by cisco Systems, Inc.

Router# copy tftp bootflash:
Address or name of remote host []? 127.23.16.81
Source filename []? auto/tftp-boot/asr1000-rommon.122-33r.XN2.pkg
Destination filename [asr1000-rommon.122-33r.XN2.pkg]?
Accessing tftp://127.23.16.81/auto/tftp-boot/asr1000-rommon.122-33r.XN2.pkg...
Loading auto/tftp-boot/asr1000-rommon.122-33r.XN2.pkg from 127.23.16.81 (via
GigabitEthernet0): !!!
[OK - 553164 bytes]

553164 bytes copied in 1.048 secs (527828 bytes/sec)

Router# dir bootflash:
Directory of bootflash:

   11  drwx           16384  Dec 2 2004 12:02:09 +00:00  lost+found
 14401  drwx            4096  Dec 2 2004 12:05:05 +00:00  .ssh
 86401  drwx            4096  Dec 2 2004 12:05:07 +00:00  .rollback_timer
   12  -rw-          33554432  Nov 20 2007 19:53:47 +00:00  nvram_00100
   13  -rw-           6401536  Dec 23 2004 19:45:11 +00:00  mcp-fpd-pkg.122-test.pkg
```

```

28801 drwx          4096   Nov 1 2007 17:00:36 +00:00  .installer
   15 -rw-         553164  Nov 28 2007 15:09:46 +00:00  asr1000-rommon.122-33r.XN2.pkg
   16 -rw-        51716300  Nov 14 2007 16:39:59 +00:00
asr1000rp1-espbases.v122_33_xn_asr_rls0_throttle.pkg
   17 -rw-        21850316  Nov 14 2007 16:41:23 +00:00
asr1000rp1-rpaccess-k9.v122_33_xn_asr_rls0_throttle.pkg
   18 -rw-        21221580  Nov 14 2007 16:42:21 +00:00
asr1000rp1-rpbase.v122_33_xn_asr_rls0_throttle.pkg
   19 -rw-        27576524  Nov 14 2007 16:43:50 +00:00
asr1000rp1-rpcontrol.v122_33_xn_asr_rls0_throttle.pkg
   20 -rw-        48478412  Nov 14 2007 16:45:50 +00:00
asr1000rp1-rpios-advipservicesk9.v122_33_xn_asr_rls0_throttle.pkg
   21 -rw-        36942028  Nov 14 2007 16:47:17 +00:00
asr1000rp1-sipbase.v122_33_xn_asr_rls0_throttle.pkg
   22 -rw-        14749900  Nov 14 2007 16:48:17 +00:00
asr1000rp1-sipspa.v122_33_xn_asr_rls0_throttle.pkg
   23 -rw-          6049   Nov 14 2007 16:49:29 +00:00  packages.conf
   14 -rw-       213225676  Nov 20 2007 19:53:13 +00:00
asr1000rp1-advipservicesk9.v122_33_xn_asr_rls0_throttle.bin

```

928833536 bytes total (451940352 bytes free)

Router# **upgrade rom-monitor filename bootflash:/asr1000-rommon.122-33r.XN2.pkg 0**

Upgrade rom-monitor on SPA-Inter-Processor 0

```

Target copying rom-monitor image file
Checking upgrade image...
1966080+0 records in
3840+0 records out
Upgrade image MD5 signature is 253f15daf89eea22b1db92d440d03608
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 253f15daf89eea22b1db92d440d03608
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the linecard.

```

Router# **hw-module slot 0 reload**

<reload output removed for brevity>

Router# **show rom-monitor 0**

```

System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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```

