



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

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](#)
- [Resolved Caveats—ROMmon Image Release 12.2\(33r\)XNB, page 8](#)

ROMmon Overview

The ROMmon Release 12.2(33r)XNB image is provided to customers in cases where a ROMmon upgrade is required. Some Cisco ASR 1000 Series Routers may contain an earlier ROMmon version (for example, ROMmon Release 12.2(33r)XN2). A ROMmon upgrade using the ROMmon Release 12.2(33r)XNB image is 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.XNB.pkg` file.

Compatibility Requirements

The `asr1000-rommon.122-33r.XNB.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.



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

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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 3](#)
- [Upgrading ROMmon for a Single RP, ESP, or SIP, page 6](#)

Upgrading ROMmon Overview

The instructions in the “[Upgrading ROMmon for a Single RP, ESP, or SIP](#)” section on page 6 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** or **show platform** 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** or **show platform** command is entered, the RP, ESP, or SIP in the specified *slot* is already running ROMmon Release 12.2(33r)XNB:

```
Router# show rom-monitor slot
System Bootstrap, Version 12.2(33r)XNB, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2008 by cisco Systems, Inc.
```

```
Router# show platform
Chassis type: ASR1006
```

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	00:03:06
0/0	SPA-5X1GE-V2	ok	00:01:35
0/1	SPA-8X1FE-TX-V2	ok	00:01:35
0/2	SPA-2XT3/DS0	ok	00:01:35
1	ASR1000-SIP10	ok	00:03:06
1/0	SPA-2XOC3-POS	ok	00:01:35
1/1	SPA-8XCHT1/E1	ok	00:01:35
1/2	SPA-2XT3/E3	ok	00:01:35
R0	ASR1000-RP1	ok, active	00:03:06
F0	ASR1000-ESP10	ok, active	00:03:06
P0	ASR1006-PWR-AC	ok	00:02:06
P1	ASR1006-FAN	ok	00:02:06

Slot	CPLD Version	Firmware Version
0	06120701	12.2(33r)XNB
1	06120701	12.2(33r)XNB
R0	07082312	12.2(33r)XNB
F0	07051680	12.2(33r)XNB

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 platform** command or the **show rom-monitor slot** command for each piece of hardware in the router. The output reveals the current ROMmon version, and is especially useful later in this process to help confirm that the previous ROMmon version was upgraded.
- This output is also useful 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.XNB.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 platform** command or 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.

Example

```
Router# show platform
Chassis type: ASR1006
```

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	2w6d
0/0	SPA-5X1GE-V2	ok	2w6d
0/1	SPA-8X1FE-TX-V2	ok	2w6d
0/2	SPA-2XCT3/DS0	ok	2w6d
1	ASR1000-SIP10	ok	2w6d
1/0	SPA-2XOC3-POS	ok	2w6d
1/1	SPA-8XCHT1/E1	ok	2w6d
1/2	SPA-2XT3/E3	ok	2w6d

```
R0      ASR1000-RP1      ok, active      2w6d
F0      ASR1000-ESP10  ok, active      2w6d
P0      ASR1006-PWR-AC ok                2w6d
P1      ASR1006-FAN    ok                2w6d
```

```
Slot    CPLD Version    Firmware Version
-----
0       06120701          12.2(33r)XN2
1       06120701          12.2(33r)XN2
R0      07082312          12.2(33r)XN2
F0      07051680          12.2(33r)XN2
```

Router# **copy tftp bootflash:**

```
Address or name of remote host [172.23.16.81]?
Source filename []? auto/tftp-boot/rommon/asr1000-rommon.122-33r.XNB.pkg
Destination filename [asr1000-rommon.122-33r.XNB.pkg]?
Accessing tftp://172.23.16.81/auto/tftp-boot/asr1000-rommon.122-33r.XNB.pkg...
Loading /auto/tftp-boot/asr1000-rommon.122-33r.XNB.pkg from 172.23.16.81 (via GigabitEt
hernet0): !!!
[OK - 559308 bytes]
```

559308 bytes copied in 1.142 secs (489762 bytes/sec)

Router# **dir bootflash:**

```
Directory of bootflash:/

 11  drwx      16384   Dec 4 2007 12:32:46 +00:00  lost+found
86401 drwx      4096    Dec 4 2007 14:06:24 +00:00  .ssh
14401 drwx      4096    Jul 22 2008 01:10:38 +01:00  .rollback_timer
28801 drwx      4096    Aug 20 2008 21:53:54 +01:00  .prst_sync
43201 drwx      4096    Jul 22 2008 01:10:54 +01:00  .installer
43204 drwx      4096    Aug 20 2008 21:21:44 +01:00  210subs
72001 drwx      4096    Aug 20 2008 22:08:12 +01:00  211ioscontrolsubs
 12  -rw-     559308   Sep 10 2008 00:39:44 +01:00  asr1000-rommon.122-33r.XNB.pkg
57601 drwx      4096    Aug 20 2008 21:12:02 +01:00  211subs
 13  -rw-     45977   Apr 10 2008 00:48:46 +01:00  target_support_output.tgz.tgz
```

928862208 bytes total (494886912 bytes free)

Router# **upgrade rom-monitor filename bootflash:/asr1000-rommon.122-33r.XNB.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 3d682df0bb0db74d0ed6ba567d4fc824
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 3d682df0bb0db74d0ed6ba567d4fc824
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the RP.
```

Upgrade rom-monitor on Embedded-Service-Processor 0

```
fp 0 16023
/usr/binos/conf/mcp_upgrade_rommon_helper.sh --host rp-active --path
rommon_upgrade_pub/rommon/mcp
--file latest.bin
BINOS_USER_TTY=vty 1
BINOS_USER_NAME=
```

```

BINOS_USER_UI_CLIENT=ios

Target copying rom-monitor image file
Checking upgrade image...
1966080+0 records in
3840+0 records out
Upgrade image MD5 signature is 3d682df0bb0db74d0ed6ba567d4fc824
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 3d682df0bb0db74d0ed6ba567d4fc824
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 3d682df0bb0db74d0ed6ba567d4fc824
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 3d682df0bb0db74d0ed6ba567d4fc824
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 3d682df0bb0db74d0ed6ba567d4fc824
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 3d682df0bb0db74d0ed6ba567d4fc824
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the linecard.

```

Router# **reload**

```

System configuration has been modified. Save? [yes/no]: y
Building configuration...
[OK]
Proceed with reload? [confirm]

```

<reload bootup output removed for brevity>

Router# **show platform**

Chassis type: ASR1006

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	00:03:06
0/0	SPA-5X1GE-V2	ok	00:01:35
0/1	SPA-8X1FE-TX-V2	ok	00:01:35
0/2	SPA-2XCT3/DS0	ok	00:01:35
1	ASR1000-SIP10	ok	00:03:06

```

1/0    SPA-2XOC3-POS    ok          00:01:35
1/1    SPA-8XCHT1/E1    ok          00:01:35
1/2    SPA-2XT3/E3      ok          00:01:35
R0     ASR1000-RP1        ok, active  00:03:06
F0     ASR1000-ESP10   ok, active  00:03:06
P0     ASR1006-PWR-AC  ok          00:02:06
P1     ASR1006-FAN     ok          00:02:06

```

```

Slot      CPLD Version      Firmware Version
-----
0         06120701          12.2(33r)XNB
1         06120701          12.2(33r)XNB
R0        07082312          12.2(33r)XNB
F0        07051680          12.2(33r)XNB

```

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 platform** command or the **show rom-monitor slot** command for each piece of hardware in the router 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.XNB.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 platform** command or 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.

Example

```
Router# show platform
Chassis type: ASR1006
```

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	2w6d
0/0	SPA-5X1GE-V2	ok	2w6d
0/1	SPA-8X1FE-TX-V2	ok	2w6d
0/2	SPA-2XCT3/DS0	ok	2w6d
1	ASR1000-SIP10	ok	2w6d
1/0	SPA-2XOC3-POS	ok	2w6d
1/1	SPA-8XCHT1/E1	ok	2w6d
1/2	SPA-2XT3/E3	ok	2w6d
R0	ASR1000-RP1	ok, active	2w6d
F0	ASR1000-ESP10	ok, active	2w6d
P0	ASR1006-PWR-AC	ok	2w6d
P1	ASR1006-FAN	ok	2w6d

Slot	CPLD Version	Firmware Version
0	06120701	12.2(33r)XN2
1	06120701	12.2(33r)XN2
R0	07082312	12.2(33r)XN2
F0	07051680	12.2(33r)XN2

```
Router# copy tftp bootflash:
Address or name of remote host [172.23.16.81]?
Source filename []? auto/tftp-boot/rommon/asr1000-rommon.122-33r.XNB.pkg
Destination filename [asr1000-rommon.122-33r.XNB.pkg]?
Accessing tftp://172.23.16.81/auto/tftp-boot/asr1000-rommon.122-33r.XNB.pkg...
Loading /auto/tftp-boot/asr1000-rommon.122-33r.XNB.pkg from 172.23.16.81 (via GigabitEthernet0): !!!
[OK - 559308 bytes]
```

```
559308 bytes copied in 1.142 secs (489762 bytes/sec)
```

```
Router# dir bootflash:
```

```
Directory of bootflash:/
```

11	drwx	16384	Dec 4 2007 12:32:46 +00:00	lost+found
86401	drwx	4096	Dec 4 2007 14:06:24 +00:00	.ssh
14401	drwx	4096	Jul 22 2008 01:10:38 +01:00	.rollback_timer
28801	drwx	4096	Aug 20 2008 21:53:54 +01:00	.prst_sync
43201	drwx	4096	Jul 22 2008 01:10:54 +01:00	.installer
43204	drwx	4096	Aug 20 2008 21:21:44 +01:00	210subs
72001	drwx	4096	Aug 20 2008 22:08:12 +01:00	211ioscontrolsubs
12	-rw-	559308	Sep 10 2008 00:39:44 +01:00	asr1000-rommon.122-33r.XNB.pkg
57601	drwx	4096	Aug 20 2008 21:12:02 +01:00	211subs
13	-rw-	45977	Apr 10 2008 00:48:46 +01:00	target_support_output.tgz.tgz

```
928862208 bytes total (494886912 bytes free)
```

```
Router# upgrade rom-monitor filename bootflash:asr1000-rommon.122-33r.XNB.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 3d682df0bb0db74d0ed6ba567d4fc824
Burning upgrade partition...
1966080+0 records in
3840+0 records out
Checking upgrade partition...
Upgrade flash partition MD5 signature is 3d682df0bb0db74d0ed6ba567d4fc824
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the linecard.
```

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

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

```
Router# show platform
```

```
Chassis type: ASR1004
```

Slot	Type	State	Insert time (ago)
0	ASR1000-SIP10	ok	5d17h
0/0	SPA-5X1GE-V2	ok	00:00:35
0/1	SPA-2XT3/E3	ok	00:00:38
R0	ASR1000-RP1	ok	5d17h
R0/0		ok, standby	5d17h
R0/1		ok, active	5d17h
F0	ASR1000-ESP10	ok, active	5d17h
P0	ASR1004-PWR-AC	ok	5d17h
P1	ASR1004-PWR-AC	ok	5d17h

Slot	CPLD Version	Firmware Version
0	07091401	12.2(33r)XNB
R0	07062111	12.2(33r)XN2
F0	07051680	12.2(33r)XN2

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

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

Resolved Caveats—ROMmon Image Release 12.2(33r)XNB

- CSCsq89671
The USB host PCI controller hangs if reset in the middle of a PCI cycle. To avoid this, ROMmon first stops the async schedule before initiating a reset of the USB host controller.
- CSCso85654
Added a UTC timestamp at the time of a ROMmon reset to assist with debugging.