



Upgrading PCI Port Adapter Carrier Card ROMmon

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PCI Port Adapter Carrier Card ROMmon Overview

Beginning in Cisco IOS Release 12.2(28)SB, the PCI Port Adapter Carrier Card (7300-CC-PA), in some scenarios, requires a one-time ROMmon upgrade to function. If this upgrade is required and not performed, the 7300-CC-PA with the incompatible ROMmon will be deactivated until the 7300-CC-PA ROMmon upgrade is performed.

The upgraded ROMmon image is bundled with Cisco IOS; no additional images need to be downloaded to perform the upgrade. The upgrade can be performed by answering a prompt that appears when the Cisco IOS bootup process recognizes that the 7300-CC-PA ROMmon requires an upgrade. Other 7300-CC-PA ROMmon upgrade alternatives also exist.



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7300-CC-PA ROMmon Compatibility

The need to upgrade 7300-CC-PA ROMmon started in Cisco IOS Release 12.2(28)SB. If you are using a 7300-CC-PA in a Cisco 7304 router running an earlier Cisco IOS Release, such as any version of Release 12.2SBC, Release 12.2S, or various other earlier releases, your 7300-CC-PA will operate with any version of 7300-CC-PA ROMmon. Users using these pre-Cisco IOS Release 12.2(28)SB releases, therefore, do not need to be concerned with 7300-CC-PA ROMmon versions.

Beginning in Cisco IOS Release 12.2(28)SB, 7300-CC-PA ROMmon had to be either Version 12.2(27r)S or 12.2(20r)S.

[Table 1](#) lists 7300-CC-PA ROMmon Requirements for Cisco IOS Releases that can be used with the Cisco 7304 router. [Table 2](#) lists IOS requirements for versions of 7300-CC-PA ROMmon. [Table 3](#) provides upgrade information by PA-CC ROMmon version for Cisco 7304 routers running Cisco IOS Release 12.2(28)SB or later.

Table 1 Minimum 7300-CC-PA ROMmon Requirements by Cisco IOS Release

Cisco IOS Release	Required ROMmon Version
Release 12.2(28)SB or later	ROMmon Version 12.2(27r)S or 12.2(20r)S
Any version of 12.2SBC, 12.2S, or any earlier Cisco IOS Release	No Minimum ROMmon requirement.

Table 2 Minimum Cisco IOS Release for 7300-CC-PA ROMmon Versions

7300-CC-PA ROMmon Version	Required Cisco IOS Release
Version 12.2(27r)S	Operates on all Cisco IOS Releases that can be used on the Cisco 7304 router.
Version 12.2(20r)S	Operates on all Cisco IOS Releases that can be used on the Cisco 7304 router.
Version 12.2(11r)YZ	Does not work in Cisco IOS Release 12.2(28)SB or later. Works for any version of Cisco IOS Release 12.2SBC, Release 12.2S, or any earlier Cisco IOS Releases.

Table 3 Cisco IOS Release 12.2(28)SB or Later ROMmon Compatibility

Initial 7300-CC-PA ROMmon Version	Action	7300-CC-PA ROMmon Version after upgrade or bootup
Version 12.2(11r)YZ	upgrade	Version 12.2(27r)S
Version 12.2(20r)S	leave	Version 12.2(20r)S
Version 12.2(27r)S	leave	Version 12.2(27r)S

The **show diag** command can be used to see the 7300-CC-PA ROMmon version. See the [“Verifying the 7300-CC-PA ROMmon Version”](#) section on page 6 for additional information on verifying the ROMmon version.

See the [“Upgrade Options”](#) section on page 3 for instructions on upgrading 7300-CC-PA ROMmon.

Time Required to Perform 7300-CC-PA ROMmon Upgrades

We recommend performing Cisco IOS upgrades during maintenance windows, and performing 7300-CC-PA ROMmon upgrades during these maintenance windows as part of the Cisco IOS upgrade. The Cisco IOS upgrade prompts users to perform the upgrade if the bootup detects that an upgrade is necessary, and the 7300-CC-PA ROMmon upgrade occurs automatically for all 7300-CC-PAs in your system if this prompt is not answered.

The time required to perform an individual 7300-CC-PA ROMmon upgrade is dependent on the amount of system resources available for the Cisco 7304 router at the time of the upgrade. Upgrading the ROMmon of a single 7300-CC-PA typically takes four minutes in a scenario where no other system resources are in use, but the upgrade can take significantly longer depending on the available amount of system resources at the time of the upgrade.

It is important to recognize that a Cisco 7304 router can only upgrade the ROMmon of one 7300-CC-PA at a time. If a Cisco 7304 has three 7300-CC-PAs that require ROMmon upgrades, for instance, and each card requires four minutes for the upgrade, the entire time required to upgrade the ROMmon would be twelve minutes.

Upgrade Options

7300-CC-PA ROMmon can be upgraded in the following ways:

- [Upgrading 7300-CC-PA ROMmon by Answering Router Prompts \(Recommended\), page 3](#)
- [Upgrading 7300-CC-PA ROMmon Using CLI Options, page 5](#)

Upgrading 7300-CC-PA ROMmon by Answering Router Prompts (Recommended)

During the following events, the Cisco 7304 router checks the 7300-CC-PA ROMmon:

- Cisco IOS upgrade
- Installation or online insertion and removal (OIR) of a 7300-CC-PA

If the 7300-CC-PA ROMmon is compatible with the current version of Cisco IOS software, no user action is necessary.

If the check reveals that a 7300-CC-PA ROMmon upgrade is required, the following message will appear on your screen when the first incompatible 7300-CC-PA ROMmon is detected:

```
*****
```

```
IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is NOT completed, the PA-CC
will be DEACTIVATED. The upgraded PA-CC ROM Monitor is
backward compatible with older IOS releases.
Upgrade time is dependant on available router resources and
the number of PA-CCs installed in the router that may
require an upgrade. Upgrading all PA-CCs in the system can
take up to 20 minutes.
```

Note: The estimated time to upgrade each PA-CC is 4 minutes

based on the router NOT passing traffic. The upgrade for a router passing traffic on a live network will take significantly longer. Cisco Systems recommends upgrading the ROMMON during a maintenance window and NOT on routers passing traffic in a live network

Please enter your choice as per the below options

- 1 Upgrade PA-CC in slot 3
- 2 Upgrade All PA-CC in the system
- 3 Do NOT upgrade any PA-CCs

Note: If you do not enter your choice within 60 seconds the router automatically defaults to upgrade all PA-CCs which need an upgrade.

After seeing this prompt, you then must perform one of the following actions:

- [Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts \(Recommended\), page 4](#)
- [Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router by Not Answering the Prompt, page 4](#)
- [Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts, page 5](#)
- [Choosing to Not Upgrade 7300-CC-PA ROMmon at the Prompt, page 5](#)

Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts (Recommended)

To upgrade all 7300-CC-PA ROMmon on your router, enter **2** after receiving the prompt and answer **y** to the follow-up prompt.

Upgrading all 7300-CC-PA ROMmon is the recommended approach for upgrading because multiple 7300-CC-PA ROMmon upgrades can occur without additional prompting. If the user selects to only upgrade one 7300-CC-PA, the user will be prompted to upgrade ROMmon for every other 7300-CC-PA that requires a ROMmon upgrade after the first 7300-CC-PA ROMmon upgrade is completed.

For an example upgrade where all 7300-CC-PA ROMmon are upgraded by entering **2** at the prompt, see the [“Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts Example”](#) section on page 8.

Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router by Not Answering the Prompt

If the 7300-CC-PA ROMmon prompt appears and is not answered within 60 seconds, all 7300-CC-PA ROMmons on the router will be upgraded automatically.

The router behavior when the prompt is not answered is identical to entering **2** at the prompt, as described in the [“Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts \(Recommended\)”](#) section on page 4.

For an example upgrade where all 7300-CC-PA ROMmon are upgraded because the prompt is not answered, see the [“Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router by Not Answering the Prompt Example”](#) section on page 9.

Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts

To upgrade a single 7300-CC-PA ROMmon on your router, enter **1** after receiving the prompt and answer **y** to the follow-up prompt.

This approach for upgrading 7300-CC-PA ROMmon is usable but not recommended. If a single 7300-CC-PA ROMmon is upgraded without upgrading all 7300-CC-PA ROMmons on the router, the 7300-CC-PA ROMmon upgrade prompt will reappear individually for every other 7300-CC-PA in the router that requires a 7300-CC-PA ROMmon upgrade. If upgrade all is selected, all 7300-CC-PAs in the router will have their ROMmon upgraded without additional prompting.

For an upgrade example where one 7300-CC-PA ROMmon upgrade is upgraded because **1** is answered at the prompt, see the [“Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts Example”](#) section on page 10.

Choosing to Not Upgrade 7300-CC-PA ROMmon at the Prompt

The 7300-CC-PA ROMmon upgrade can be skipped by entering **3** at the prompt.

When the 7300-CC-PA ROMmon upgrade is skipped, the 7300-CC-PA will not operate until the 7300-CC-PA ROMmon is upgraded. This approach is not recommended for most network environments for this reason.

If a 7300-CC-PA ROMmon upgrade is skipped, it can be upgraded at a later time using one of the following methods:

- Entering the **upgrade rom-monitor linecard slot** *slot-number* command, where *slot-number* is the router slot containing the 7300-CC-PA, and answering **y** to the subsequent prompt.
- Entering the **hw-module slot** *slot-number* **start** command, where *slot-number* is the router slot containing the 7300-CC-PA, and answering **y** to the subsequent prompt.
- Rebooting or upgrading Cisco IOS and following the prompts.
- Performing an OIR on the 7300-CC-PA and following the prompts.

For an example where a user chooses to skip the 7300-CC-PA ROMmon upgrade, see the [“Choosing Not to Upgrade Example”](#) section on page 12.

Upgrading 7300-CC-PA ROMmon Using CLI Options

The command-line interface (CLI) options used to upgrade 7300-CC-PA ROMmon can only be used after declining to upgrade the 7300-CC-PA ROMmon via router prompts. These CLI commands can be used to perform a 7300-CC-PA upgrade after a 7300-CC-PA ROMmon upgrade is skipped.

Use one of the following procedures to upgrade 7300-CC-PA ROMmon using the CLI:

- [Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the upgrade rom-monitor linecard slot Command, page 6](#)
- [Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the hw-module slot start Command, page 6](#)

Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the upgrade rom-monitor linecard slot Command

7300-CC-PA ROMmon can be upgraded by entering the **upgrade rom-monitor linecard slot *slot-number*** command, where *slot-number* is the router slot where the 7300-CC-PA with the ROMmon that needs an upgrade is installed.

After entering this command, answer **y** to the prompt to proceed with the upgrade.

For an example where the **upgrade rom-monitor linecard slot *slot-number*** command is used to upgrade 7300-CC-PA ROMmon, see the [“Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the upgrade rom-monitor linecard slot Command Example”](#) section on page 13.

Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the hw-module slot start Command

7300-CC-PA ROMmon can be upgraded by entering the **hw-module slot *slot-number* start** command, where *slot-number* is the router slot where the 7300-CC-PA with the ROMmon that needs an upgrade is installed.

After entering this command, answer **y** to the prompt to proceed with the upgrade.

For an example where the **hw-module slot *slot-number* start** command is used to upgrade 7300-CC-PA ROMmon, see the [“Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the hw-module slot start Command Example”](#) section on page 14.

Verifying the 7300-CC-PA ROMmon Version

The **show diag *slot-number*** command can be entered to verify the 7300-CC-PA ROMmon version, or to confirm that a 7300-CC-PA ROMmon upgrade needs to occur to activate the 7300-CC-PA.

After a successful upgrade, the 7300-CC-PA ROMmon version will be “Version 12.2(27r)S”. It is important to note, however, that 7300-CC-PA ROMmon Version 12.2(20r)S also currently runs on all Cisco IOS releases that can be used on the Cisco 7304 router; therefore, if Version 12.2(20r)S is your ROMmon version, no 7300-CC-PA ROMmon upgrade is necessary. If any other output appears in the “ROMmon:” portion of the **show diag** output, a 7300-CC-PA Carrier ROMmon upgrade must occur to enable the 7300-CC-PA.

See the [“7300-CC-PA ROMmon Compatibility”](#) section on page 2 for additional information on 7300-CC-PA ROMmon versions and Cisco IOS requirements.

In the following example, the 7300-CC-PA ROMmon for the 7300-CC-PA in slot 4 has been updated. The portion of the **show diag** output that displays this information has been italicized for emphasis.

```
Router# show diag 4
Slot 4: is a PA CC with the following PA in its slot0:
Slot 0:
    ATM WAN OC3 (SMI) Port adapter, 1 port
    Port adapter is analyzed
    Port adapter insertion time 00:00:14 ago
    EEPROM contents at hardware discovery:
    Hardware revision 2.0          Board revision A0
    Serial number      22541436   Part number      73-2427-04
    FRU Part Number:   PA-A3-OC3SMI=
```

(some output removed for brevity)

```

PA Carrier Card State Information:
  Current Carrier Card Initialization State:
    IOS up
  Current Carrier Card Run Status:
    Running in: ROMMON: N, IOS-Intr: N, IOS-Proc: Y, (IPC->RP: Y)
PA Carrier Card ROM Monitor Version Information:
  System Bootstrap, Version 12.2(27r)S, RELEASE SOFTWARE (fc1)

```

(additional information removed for brevity)

In the following example from a router running Cisco IOS Release 12.2(28)SB, the output of the **show diag** command reveals that the 7300-CC-PA installed in slot 4 needs to be upgraded. Specifically, the ROMmon is version 12.2(11r)YZ3 when compatible ROMmon would be either “Version 12.2(27r)S” or “Version 12.2(20r)S”. The portion of the **show diag** output that displays this information has been italicized for emphasis.

```

Router# show diag 4
Slot 4: is a PA CC with the following PA in its slot0:
Slot 0:
  ATM WAN OC3 (SMI) Port adapter, 1 port
  Port adapter is analyzed
  Port adapter insertion time 1d22h ago
  EEPROM contents at hardware discovery:
  Hardware revision 2.0           Board revision A0
  Serial number 22541436         Part number 73-2427-04
  FRU Part Number: PA-A3-OC3SMI=

```

(some output removed for brevity)

```

PA Carrier Card State Information:
  Current Carrier Card Initialization State:
    IOS up
  Current Carrier Card Run Status:
    Running in: ROMMON: ?, IOS-Intr: N, IOS-Proc: Y, (IPC->RP: Y)
PA Carrier Card ROM Monitor Version Information:
  System Bootstrap, Version 12.2(11r)YZ3, RELEASE SOFTWARE (fc1)

```

(additional information removed for brevity)

Important Notes about 7300-CC-PA ROMmon Upgrades

- Upgrading the 7300-CC-PA ROMmon was introduced in Cisco IOS Release 12.2(28)SB. If you are using a 7300-CC-PA in a Cisco 7304 router running an earlier Cisco IOS release, such as any version of Release 12.2SBC, Release 12.2S, or various other earlier releases, the 7300-CC-PA ROMmon upgrade is not an issue when running your version of Cisco IOS.
- If the message explaining the 7300-CC-PA ROMmon incompatibility appears and the prompt is not answered within 60 seconds, all 7300-CC-PA ROMmon will be upgraded automatically.
- If you are upgrading from a previous Cisco IOS release to Cisco IOS Release 12.2(28)SB or later, or installing Release 12.2(28)SB or later initially, the 7300-CC-PA ROMmon upgrade may be necessary to run a 7300-CC-PA.
- The 7300-CC-PA ROMmon upgrade is backwards-compatible. If you downgrade to a Cisco IOS release that does not require a 7300-CC-PA ROMmon upgrade after upgrading the 7300-CC-PA ROMmon, a 7300-CC-PA ROMmon downgrade is not necessary for the 7300-CC-PA to run on the downgraded version of Cisco IOS.

- The upgraded PCI Port Adapter Carrier Card ROMmon is carried over to future Cisco IOS releases. If IOS is upgraded at a future date and the new Cisco IOS has no new PCI Port Adapter Carrier Card ROMmon requirements, another PCI Port Adapter Carrier Card ROMmon upgrade is not necessary.
- In High Availability configurations, the standby router will continuously reboot during the 7300-CC-PA ROMmon upgrade when the 7300-CC-PA ROMmon upgrade is initiated by answering the bootup prompt. Once the 7300-CC-PA ROMmon upgrade is complete, the standby system should operate as usual.
If messages about the reload of the standby router appear on the console during or shortly after a 7300-CC-PA ROMmon upgrade, these messages should not be a cause for concern.

7300-CC-PA ROMmon Upgrade Examples

This section contains the following examples:

- [Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts Example, page 8](#)
- [Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router by Not Answering the Prompt Example, page 9](#)
- [Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts Example, page 10](#)
- “Choosing Not to Upgrade Example” section on page 12
- [Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the upgrade rom-monitor linecard slot Command Example, page 13](#)
- [Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the hw-module slot start Command Example, page 14](#)

Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts Example

In the following example, the 7300-CC-PA ROMmon upgrade prompt appears and the user chooses to upgrade all 7300-CC-PA ROMmon.

```
*****
```

```
IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is NOT completed, the PA-CC
will be DEACTIVATED. The upgraded PA-CC ROM Monitor is
backward compatible with older IOS releases.
Upgrade time is dependant on available router resources and
the number of PA-CCs installed in the router that may
require an upgrade. Upgrading all PA-CCs in the system can
take up to 20 minutes.
```

Note: The estimated time to upgrade each PA-CC is 4 minutes based on the router NOT passing traffic. The upgrade for a router passing traffic on a live network will take significantly longer. Cisco Systems recommends upgrading the ROMMON during a maintenance window and NOT on routers passing traffic in


```

a live network
*****

Please enter your choice as per the below options
1 Upgrade PA-CC in slot 3
2 Upgrade All PA-CC in the system
3 Do NOT upgrade any PA-CCs
Note: If you do not enter your choice within 60 seconds the router
automatically defaults to upgrade all PA-CCs which need an upgrade.
2
Continue with upgrade of all slots?[y/n]
Y
Extracting bundled PA-CC ROM Monitor image...Passed
CRC Check... Passed
ROM Monitor on PA-CC in slot 3 is about to be upgraded.
Upgrade can take up to 4 minutes. Do not power cycle or OIR the
PA-CC in slot 3.

PACC ROMMON flash update in progress
Erasing (this may take a while)...
Programming...
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Verifying PACC ROMMON flash
  Reading from PACC ROMMON flash...
VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVDone
Comparing with the source file...
Passed
Upgrade of slot 3 PA-CC ROM Monitor complete.

cisco 7300 (NPEG100) processor (revision B) with 983040K/65536K bytes of memory.
Processor board ID SMQ0914NOWQ
SB-1 CPU at 800Mhz, Implementation 1025, Rev 0.2, 512KB L2 Cache
4 slot midplane, Version 67.49

```

Upgrading All 7300-CC-PA ROMmon on the Cisco 7304 Router by Not Answering the Prompt Example

In the following example, the 7300-CC-PA ROMmon upgrade prompt appears and is not answered, so the upgrade proceeds automatically.

```

*****

IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is NOT completed, the PA-CC
will be DEACTIVATED. The upgraded PA-CC ROM Monitor is
backward compatible with older IOS releases.
Upgrade time is dependant on available router resources and
the number of PA-CCs installed in the router that may
require an upgrade. Upgrading all PA-CCs in the system can
take up to 20 minutes.

Note: The estimated time to upgrade each PA-CC is 4 minutes
based on the router NOT passing traffic. The upgrade for a
router passing traffic on a live network will take significantly
longer. Cisco Systems recommends upgrading the ROMMON during
a maintenance window and NOT on routers passing traffic in

```

```

a live network
*****

Please enter your choice as per the below options
1 Upgrade PA-CC in slot 3
2 Upgrade All PA-CC in the system
3 Do NOT upgrade any PA-CCs
Note: If you do not enter your choice within 60 seconds the router
automatically defaults to upgrade all PA-CCs which need an upgrade.

Timeout.

Continue with upgrade of all slots?[y/n]
%Timeout.
Extracting bundled PA-CC ROM Monitor image...Passed
CRC Check... Passed
ROM Monitor on PA-CC in slot 3 is about to be upgraded.
Upgrade can take up to 4 minutes. Do not power cycle or OIR the
PA-CC in slot 3.

PACC ROMMON flash update in progress
Erasing (this may take a while)...
Programming...
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Verifying PACC ROMMON flash
  Reading from PACC ROMMON flash...
VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVDone
Comparing with the source file...
Passed
Upgrade of slot 3 PA-CC ROM Monitor complete.

```

Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router via Router Prompts Example

In the following example, the 7300-CC-PA ROMmon is upgraded for the 7300-CC-PA in one slot only.

```

*****

IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is NOT completed, the PA-CC
will be DEACTIVATED. The upgraded PA-CC ROM Monitor is
backward compatible with older IOS releases.
Upgrade time is dependant on available router resources and
the number of PA-CCs installed in the router that may
require an upgrade. Upgrading all PA-CCs in the system can
take up to 20 minutes.

Note: The estimated time to upgrade each PA-CC is 4 minutes
based on the router NOT passing traffic. The upgrade for a
router passing traffic on a live network will take significantly
longer. Cisco Systems recommends upgrading the ROMMON during
a maintenance window and NOT on routers passing traffic in
a live network
*****

Please enter your choice as per the below options
1 Upgrade PA-CC in slot 3

```

```
2 Upgrade All PA-CC in the system
3 Do NOT upgrade any PA-CCs
Note: If you do not enter your choice within 60 seconds the router
automatically defaults to upgrade all PA-CCs which need an upgrade.
1
Continue with upgrade of slot 3 PA-CC?[y/n]
Y
Extracting bundled PA-CC ROM Monitor image...Passed
CRC Check... Passed
ROM Monitor on PA-CC in slot 3 is about to be upgraded.
Upgrade can take up to 4 minutes. Do not power cycle or OIR the
PA-CC in slot 3.

PACC ROMMON flash update in progress
Erasing (this may take a while)...
Programming...
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Verifying PACC ROMMON flash
  Reading from PACC ROMMON flash...
VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVDone
Comparing with the source file...
Passed
Upgrade of slot 3 PA-CC ROM Monitor complete.
```

Choosing Not to Upgrade Example

In the following example, the 7300-CC-PA is disabled after a user elects to not upgrade 7300-CC-PA ROMmon after being prompted to perform the upgrade.

```
IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is NOT completed, the PA-CC
will be DEACTIVATED. The upgraded PA-CC ROM Monitor is
backward compatible with older IOS releases.
Upgrade time is dependant on available router resources and
the number of PA-CCs installed in the router that may
require an upgrade. Upgrading all PA-CCs in the system can
take up to 20 minutes.
```

```
Note: The estimated time to upgrade each PA-CC is 4 minutes
based on the router NOT passing traffic. The upgrade for a
router passing traffic on a live network will take significantly
longer. Cisco Systems recommends upgrading the ROMMON during
a maintenance window and NOT on routers passing traffic in
a live network
```

Please enter your choice as per the below options

- 1 Upgrade PA-CC in slot 3
- 2 Upgrade All PA-CC in the system
- 3 Do NOT upgrade any PA-CCs

Note: If you do not enter your choice within 60 seconds the router automatically defaults to upgrade all PA-CCs which need an upgrade.

```
3
cisco 7300 (NPEG100) processor (revision B) with 983040K/65536K bytes of memory.
Processor board ID SMQ0914N0WQ
SB-1 CPU at 800Mhz, Implementation 1025, Rev 0.2, 512KB L2 Cache
4 slot midplane, Version 67.49
```

```
Last reset from software reset or reload
3 Gigabit Ethernet interfaces
1021K bytes of non-volatile configuration memory.
```

```
62592K bytes of ATA compact flash in bootdisk (Sector size 512 bytes).
62592K bytes of ATA compact flash in disk0 (Sector size 512 bytes).
interface ATM3/0
```

The following error messages will be thrown out.

```
00:00:12: %PACC-3-UPGRADEREFUSED: Upgrade of ROM Monitor on PA-CC in slot 3 refused.
NOTE: Without the ROM Monitor upgrade all PA-CC requiring upgrade
will be deactivated.
```

Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the upgrade rom-monitor linecard slot Command Example

In the following example, the **upgrade rom-monitor linecard slot** command is entered to upgrade the 7300-CC-PA ROMmon in slot 3:

```
Router# upgrade rom-monitor linecard slot 3
*****

IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is NOT completed, the PA-CC
will be DEACTIVATED. The upgraded PA-CC ROM Monitor is
backward compatible with older IOS releases.
Upgrade time is dependant on available router resources and
the number of PA-CCs installed in the router that may
require an upgrade. Upgrading all PA-CCs in the system can
take up to 20 minutes.

Note: The estimated time to upgrade each PA-CC is 4 minutes
based on the router NOT passing traffic. The upgrade for a
router passing traffic on a live network will take significantly
longer. Cisco Systems recommends upgrading the ROMMON during
a maintenance window and NOT on routers passing traffic in
a live network
*****

Continue with upgrade of slot 3PA-CC?[y/n]
Y
Extracting bundled PA-CC ROM Monitor image...Passed
CRC Check... Passed
ROM Monitor on PA-CC in slot 3 is about to be upgraded.
Upgrade can take up to 4 minutes. Do not power cycle or OIR the
PA-CC in slot 3.

PACC ROMMON flash update in progress
Erasing (this may take a while)...
Programming...
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Verifying PACC ROMMON flash
  Reading from PACC ROMMON flash...
VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVDone
Comparing with the source file...
Passed
Upgrade of slot 3 PA-CC ROM Monitor complete.
```

Upgrading a Single 7300-CC-PA ROMmon on the Cisco 7304 Router Using the hw-module slot start Command Example

In the following example, the **hw-module slot *slot-number* start** command is entered and a 7300-CC-PA ROMmon upgrade is performed.

```
Router# hw-module slot 3 start
Router#*****
```

```
IOS has detected the version of ROM Monitor on the Port
Adapter Carrier Card (PA-CC) in slot 3 is 12.2(11r)YZ3.
An upgrade to version 12.2(27r)S is required for this and future
IOS releases. If this upgrade is not completed, the PA-CC
will be deactivated.
```

Note: The estimated time to upgrade each PA-CC is 4 minutes based on the router NOT passing traffic. The upgrade for a router passing traffic on a live network will take significantly longer. Cisco Systems recommends upgrading the ROM Monitor during a maintenance window and NOT on routers passing traffic in a live network.

```
*****
```

```
Continue with upgrade of slot 3 PA-CC?[y/n]
Note: If you do not enter your choice within 60 seconds the router
automatically defaults to no upgrade of the PA-CC.
```

```
y
Extracting bundled PA-CC ROM Monitor image...Passed
CRC Check... Passed
ROM Monitor on PA-CC in slot 3 is about to be upgraded.
Upgrade can take up to 4 minutes. Do not power cycle or OIR the
PA-CC in slot 3.
```

```
PACC ROMMON flash update in progress
Erasing (this may take a while)...
Programming...
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Verifying PACC ROMMON flash
  Reading from PACC ROMMON flash...
VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVDone
Comparing with the source file...
Passed
Upgrade of slot 3 PA-CC ROM Monitor complete.
```