



NPE-G1 Read Me First

Product Number: NPE-G1=

Document Number: DOC-7814025=

Platform: Cisco 7200 VXR

The NPE-G1 is different from prior network processing engines for the Cisco 7200 VXR routers. It is critical that you read the information below before you begin NPE-G1 installation procedures.



Caution

Before powering down the router to install the NPE-G1, you must save the running configuration to a Flash Disk, PC Card, or TFTP server before you install the NPE-G1, or the running configuration will be lost and you will have to manually reenter your configuration.

Cisco IOS looks to the NPE-G1 for the running configuration, as the NPE-G1, by default, stores the running configuration, whether or not an I/O controller is installed with the NPE-G1.

For instructions on copying and saving your configuration file, see the *Network Processing Engine and Network Services Engine Installation and Configuration* publication, Chapter 6, “NPE-G1 Installation and Configuration Information.” For preparation for installation instructions, see Chapter 7, “Preparation for Installation,” and Chapter 6, “NPE-G1 Installation and Configuration Information” of the *Network Processing Engine and Network Services Engine Installation and Configuration* publication.



Caution

If the NPE-G1 will be installed in a router with either an C7200-I/O-GE/E or C7200-I/O-2FE/E I/O controller, copy your running configuration to a Flash Disk, not a PC card. PC cards are not supported on these I/O controllers when an NPE-G1 is present. If you copy the running configuration to a PC card with these I/O controllers present, you will not be able to retrieve the running configuration after the NPE-G1 is installed.

- The RJ-45 ports and GBIC ports are both reported in software as GigabitEthernet 0/1, GigabitEthernet 0/2, and GigabitEthernet 0/3. Only one of the pair of interface ports can be used at a time, for example, GE 0/2 or RJ-45 0/2.
- The I/O controller GE/E interface reports GE 0/0, and the I/O controller 2FE/E interface reports FE 0/0.



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- If the RJ-45 port is in use, the EN (enabled) LED is on. If the GBIC is in use, the EN (enabled) LED is off.
- With the NPE-G1 and an I/O controller both installed, the I/O controller functionality on the NPE-G1 is shared with that of the I/O controller.
- The console and auxiliary ports on the NPE-G1 are disabled by Cisco IOS when an I/O controller is present; the console and auxiliary ports on the I/O controller are active.
- Console port messages can be routed to the auxiliary port on either the NPE-G1 or on the I/O controller.
- The default media is the RJ-45 port. To change the media type, use the **media-type** command.
- Only the port selected by the **media-type** command is active. A cable attached to the other of the RJ-45 and GBIC pair will be ignored. For example, if GBIC GigabitEthernet 0/2 is selected using the **media-type** command, RJ-45 GigabitEthernet 0/2 is ignored, even if a cable is attached to GBIC 0/2.
- The NPE-G1 uses no bandwidth points. If The NPE-G1 is in the router with an I/O controller, the I/O controller also uses no bandwidth points. None of the Gigabit Ethernet interfaces on the NPE-G1 use bandwidth points.
- The compact Flash Disk on the NPE-G1 is available at all times, with or without an I/O controller installed.

Copying the Configuration File to a Flash Disk or PC Card

Use the following instructions for copying the router configuration file to a Flash Disk or PC Card.

Step 1 Insert the Flash Disk or PC Card into the I/O controllers PC card slot 0. If slot 0 is full, use slot 1. If you need to format the Flash Disk, go to Step 2. If the Flash Disk is already formatted, go to Step 3.

Step 2 Use the **format disk0:** command to format a Flash Disk in slot 0. Use the **format disk1:** command to format a Flash Disk in slot 1.

```
System# format disk0:
Format operation may take a while. Continue: [confirm]
Format operation will destroy all data in 'disk0:'. Continue? [confirm]
Format :Drive communication and 1st Sector Write OK...
Writing Monlib sectors
.....
Monlib write complete
Format:All system sectors written. OK...
Format:Total sectors in formatted partition:81760
Format:Total bytes in formatted partition:49861120
Format:Operation completed successfully.

Format of disk0:complete
```

The Flash Disk is now formatted and ready to use in the system on which you formatted it.

Step 3 Make sure you are at the privileged level of the EXEC command interpreter (check the system prompt for a pound sign [#]). If the system prompt does not have a pound sign (#), enter **enable**, and then your password.

Step 4 Enter the **show running-config** command to display the router's running configuration. Ensure that the configuration information is complete and correct. If it is not, use the **configure** command to add or modify the existing configuration. Then enter the **copy running-config** command. If you have a Flash Disk 0 or 1, use **disk0** or **disk1** as part of the command. If you are using a PC card, use **slot0** or **slot1** as part of the command.

Step 5 To copy a the running configuration file to the Flash Disk or PC Card, enter the **copy running-config disk0: filename** or **copy running-config slot0: filename** command:

```
System# copy startup-config disk0: filename
```

You have finished copying the running configuration file to the Flash Disk or PC Card.

Go to the instructions on removing the current network processing engine or network services engine and then replacing it with the NPE-G1.

http://www.cisco.com/en/US/products/hw/routers/ps341/products_installation_guide_book09186a0080551c34.html

Copying the Configuration File to a TFTP Server

Before copying the router configuration file to a TFTP file server, check the following items:

- A console terminal is connected to the console port on the I/O controller, or a Telnet session is established to the router.
- The router is connected to a network supporting a file server (remote host).
- The remote host supports the TFTP application.
- You have the name or address of the remote host.

Complete the following steps to copy the router's configuration file to a remote host:

Step 1 Make sure you are at the privileged level of the EXEC command interpreter (check the system prompt for a pound sign [#]). If the system prompt does not have a pound sign (#), enter **enable**, and then your password.

Step 2 Use the **ping** command to check the connection between the router and the remote host.

Step 3 Enter the **show running-config** command to display the router's running configuration. Ensure that the configuration information is complete and correct. If it is not, use the **configure** command to add or modify the existing configuration. Then enter the **copy running-config startup-config** command to save the retrieved configuration in NVRAM. NVRAM uses lithium batteries to maintain its contents when disconnected from power.



Note Refer to the appropriate software documentation listed in the “[Related Documentation](#)” section on [page 7](#) and to the *Using the Flash Disk* document at <http://www.cisco.com/univercd/cc/td/doc/product/core/7200vx/72vxfru/5819fdsk.htm> for descriptions of the configuration options available for the system and individual interfaces, and for specific configuration instructions.

Step 4 Enter the **copy startup-config tftp** command. The EXEC command interpreter prompts you for the name or IP address of the remote host that is to receive the configuration file. (The prompt might include the name or address of a default file server.)

```
Router# copy startup-config tftp
Remote host []?
```

- Step 5** Enter the name or IP address of the remote host. In the following example, the name of the remote host is *servername*:

```
Router# copy startup-config tftp
Remote host []? servername
Translating "servername"...domain server (10.1.1.1) [OK]
```

- Step 6** The EXEC command interpreter prompts you for the name of the file that will contain the configuration. By default, the system appends *-confg* to the router's name to create the new filename. Press **Return** to accept the default filename, or enter a different name for the file before pressing **Return**. In the following example, the default is accepted:

```
Name of configuration file to write [Router-confg]?
Write file Router-confg on host 10.1.1.1? [confirm]
Writing Router-confg.....
```

- Step 7** Before the router executes the copy process, it displays the instructions you entered for confirmation. If the instructions are not correct, enter **n** (no), and then **Return** to stop the process. To accept the instructions, press **Return**, or **y**, and then **Return**; the system begins the copy process. In the following example, the default is accepted:

```
Write file Router-confg on host 10.1.1.1? [confirm]
Writing Router-confg: !!!! [ok]
```

While the router copies the configuration to the remote host, it displays a series of exclamation points (!!!) or periods (. . .). The exclamation points [!!!!] and [ok] indicate that the operation is successful. A display of periods [. . .] [timed out] or [failed] indicates a failure, which would probably be because of a network fault or the lack of a writable, readable file on the remote file server.

- Step 8** Check the result of the copy process.
- If the display indicates that the process was successful (with the series of !!! and [ok]), the copy process is complete. The configuration file is safely stored in the temporary file on the remote file server.
 - If the display indicates that the process failed (with the series of . . . as shown in the following example) your configuration was not saved:

```
Writing Router-confg .....
```

- Step 9** If your configuration was not saved, repeat the preceding steps, or select a different remote file server and repeat the preceding steps. If you are unable to copy the configuration to a remote host successfully, contact your network administrator or see the [“Obtaining Technical Assistance”](#) section on page 9.

This completes the procedure for copying the configuration file to a TFTP server. See the [Network Processing Engine and Network Services Engine Installation and Configuration](#) document for installation and configuration information.

After Installation

After installing and cabling the NPE-G1 and powering on the router, copy the configuration file to NVRAM on the NPE-G1.

Copying the Saved Configuration to NVRAM

Use one of the two following methods, “[Copying the Saved Configuration File from the Flash Disk or Flash Card](#)” or “[Downloading the Saved Configuration From the TFTP Server](#)”, to copy the saved configuration file to NVRAM on the NPE-G1.

Copying the Saved Configuration File from the Flash Disk or Flash Card

To copy the saved configuration file from the Flash Disk or Flash Card, follow these steps:

Step 1 Make sure you are at the privileged level of the EXEC command interpreter (check the system prompt for a pound sign [#]). If the system prompt does not have a pound sign (#), enter **enable**, and then your password.

Step 2 Enter the **copy disk0: filename running** or **copy slot0: filename running** command.

```
System# copy disk0: filename running
```

Step 3 Enter the **write** command:

```
System#: write
```

You have finished copying and writing the saved configuration file to NVRAM.

Downloading the Saved Configuration From the TFTP Server

After you install the NPE-G1 in the router and verify a successful router boot, you must retrieve the router configuration from the TFTP server and copy it to NVRAM. Use the **copy tftp running-config** command to copy the saved configuration from the TFTP file server. The system prompts you for a host name and address, the name of the configuration file stored on the host, and confirmation to reboot using the remote file.

After the NPE-G1 is installed, save the router configuration file to NVRAM (the default is the NPE-G1 NVRAM) using the **copy system:running-config nvram:startup-config** command as follows:

```
System# copy system:running-config nvram:startup-config
```

You will want to configure NPE-G1 interfaces after retrieving the router configuration and copying it to NVRAM.

Before retrieving the router configuration file from the TFTP server, check the following:

- A console terminal is connected to the console port on the NPE-G1, or a Telnet session is established to the router.
- The router is connected to a network supporting a file server (remote host).
- The remote host supports the TFTP application.
- You have the name or address of the remote host.

Before configuring the new interfaces on the NPE-G1, be prepared with the following information:

- Protocols and encapsulations you plan to use on the new interface
- Protocol-specific information, such as IP addresses if you will configure the interface for IP routing

For complete descriptions of interface commands and the configuration options available for Cisco 7200 VXR-related interfaces, refer to the documentation resources listed in the “[Related Documentation](#)” section on page 7.

To retrieve the saved router configuration from the remote host, complete the following steps:

- Step 1** Make sure you are at the privileged level of the EXEC command interpreter (check the system prompt for a pound sign [#]). If the system prompt does not have a pound sign (#), enter **enable**, and then your password.



Note Until you retrieve the saved configuration, the router runs from the default configuration in NVRAM. Therefore, any passwords that were previously configured on the system are not valid until you retrieve the configuration.

- Step 2** Use the **ping** command to check the connection between the router and the remote host (the remote file server to which you copied the configuration file).

- Step 3** At the system prompt, enter the **copy tftp running-config** command and press **Return** to enter configuration mode. Specify that you will configure the system from a network device (instead of from the console terminal, which is the default).

```
Router# copy tftp running-config
```

- Step 4** The system prompts you to select a host or network configuration file. The default is host; press **Return** to accept the default.

```
Host or network configuration file [host]?
```

- Step 5** The system prompts you for the IP address of the host. Enter the IP address or name of the remote host.

```
IP address of remote host [255.255.255.255]? 10.1.1.1
```

- Step 6** The system prompts you for the name of the configuration file. When the system copies the file to the server, the default is to use the name of the router with the suffix *-config* (*router-config* in the following example). If you specified a different filename when you copied the configuration, enter that filename; otherwise, press **Return** to accept the default.

```
Name of configuration file [router-config]?
```

- Step 7** Before the system reboots with the new configuration, it displays the instructions you entered for confirmation. If the instructions are not correct, enter **n** (no), and then press **Return** to cancel the process. To accept the instructions, press **Return**, or **y**, and then **Return**.

```
Configure using router-config from 10.1.1.1? [confirm]
Booting router-config from 10.1.1.1: !! [OK - 874/16000 bytes]
```

While the router retrieves and boots from the configuration on the remote host, the console display indicates whether or not the operation was successful. A series of exclamation points [!!!!] and [OK] (as shown in the preceding example) indicates that the operation was successful. A series of periods [. . .] and [timed out] or [failed] indicates a failure (which would probably be due to a network fault or an incorrect server name, address, or filename). The following is an example of a failed attempt to boot from a remote server:

```
Booting Router-config . . . . . [timed out]
```

- If the display indicates that the process was successful, proceed to the next step.

- If the display indicates that the process failed, verify the name or address of the remote server and the filename, and repeat the preceding steps. If you are unable to retrieve the configuration, contact your network administrator or see the “[Obtaining Technical Assistance](#)” section on page 9.
- Step 8** Enter the **show running-config** command to display the currently running configuration on the terminal. Review the display and ensure that the configuration information is complete and correct. If it is not, verify the filename and repeat the preceding steps to retrieve the correct file, or use the **configure** command to add or modify the existing configuration. (Refer to the appropriate software documentation for descriptions of the configuration options available for the system and individual interfaces and specific configuration instructions.)
- Step 9** When you have verified that the currently running configuration is correct, enter the **copy running-config startup-config** command to save the retrieved configuration in NVRAM. Otherwise, the new configuration will be lost when you restart the system.
-

Related Documentation

- Cisco IOS software configuration documentation contains Cisco IOS software configuration information and support. See the modular configuration and modular command reference publications in the set that corresponds to the software release installed on your Cisco hardware. Access these documents at: <http://www.cisco.com/univercd/cc/td/doc/product/software/index.htm>.
- *Network Processing Engine and Network Services Engine Installation and Configuration* at: <http://www.cisco.com/univercd/cc/td/doc/product/core/7206/fru/npense/index.htm>
- *Cisco 7200 Series Port Adapter Hardware Configuration Guidelines* at: http://www.cisco.com/univercd/cc/td/doc/product/core/7206/port_adp/config/index.htm
- *Memory Replacement Instructions for the Network Processing Engine or Network Services Engine and Input/Output Controller* at: <http://www.cisco.com/univercd/cc/td/doc/product/core/7206/fru/memory/index.htm>
- *Cisco 7200 VXR Installation and Configuration Guide* at: <http://www.cisco.com/univercd/cc/td/doc/product/core/7200vx/72vxicg/index.htm>
- *Cisco 7200 VXR Routers Quick Start Guide* at: <http://www.cisco.com/univercd/cc/td/doc/product/core/7200vx/12769q.htm>

Ordering Printed Documentation

Cisco is phasing out the automatic shipment of printed manuals with many of its products. To order a printed document, go to the following URL and follow the instructions on the page:

[Product Doc Comprehensive Instructions: Comprehensive Instructions for Ordering Cisco Product Documentation](http://www.cisco.com/univercd/cc/td/doc/es_inpk/cdocomp.htm) at: http://www.cisco.com/univercd/cc/td/doc/es_inpk/cdocomp.htm

Obtaining Documentation

These 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 this URL:

<http://www.cisco.com>

Translated documentation is available at this 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

You can order Cisco documentation in these ways:

- Registered Cisco.com users (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 Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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170 West Tasman Drive
San Jose, CA 95134-9883

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Obtaining Technical Assistance

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Technical Assistance Center

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

Cisco TAC inquiries 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.

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

Cisco TAC Web Site

You can use the Cisco TAC Web Site 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 this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service 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 this URL to register:

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

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

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

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. 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 automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this 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). When you call the center, please have available your service agreement number and your product serial number.

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

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