



Cisco 12000 Series Internet Router Flash Disk Information

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This publication provides general information about the use of advanced technology attachment (ATA) Flash disks with Cisco 12000 Series Internet Router route processors (RPs). Flash disks are used as a storage device to locally store Cisco IOS images, configuration files, etc., and are available in various sizes.

Prior to the availability of Flash disks, Cisco 12000 series Internet Routers only supported 20-MB linear Flash memory cards. Over a period of time, Cisco IOS software images have grown in size, with added support for newer line cards and more software features. Using a Flash disk provides greater operational convenience and flexibility.



Note

This publication does not include all Cisco IOS Flash card commands. For complete Flash card command descriptions and configuration information, refer to the *Cisco IOS Configuration Fundamentals Command Reference* and the *Cisco IOS Configuration Fundamentals Configuration Guide* for the Cisco IOS Release in use. See the [“Obtaining Documentation” section on page 4](#) for information on obtaining these publications.

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Product Overview

Flash disks are similar to linear Flash memory cards. Flash disks combine Flash memory technology with a controller chip to achieve higher capacity and better performance than linear Flash memory cards. The controller circuitry allows Flash disks to emulate hard disk capabilities, and to allocate noncontiguous sectors, eliminating the need for the **squeeze** command that is required for space retrieval on linear Flash memory cards.

You can install a Flash disk into either (or both) Flash card slot(s) on the Gigabit Route Processor (GRP) or the Performance Route Processor (PRP). Refer to the installation and configuration note for your route processor card for basic Flash disk removal and installation instructions.

[Table 1](#) lists the Cisco product numbers for the Flash disks that are available for use with Cisco 12000 Series Internet Routers.


Note

Flash disk support is available in Cisco IOS Releases 12.0(17)S, 12.0(17)ST, and later.

Table 1 Supported Flash Disk Sizes and Product Numbers

Flash Disk Size	Product Number
20 MB ¹	MEM-GRP-FL20=
48 MB	MEM-12KRP-FD48= ²
64 MB	MEM-12KRP-FD64=
128 MB	MEM-12KRP-FD128=
1 GB	MEM-12KRP-FD1G=

1. This is a linear Flash memory card. It may not have the capacity to meet the requirements of your configuration. However, it can be used for emergency file recovery applications.
2. The availability of this product may be limited.

Booting from a Flash Disk

This section describes the commands used to boot from a Flash disk.


Note

When using a linear Flash memory card, the Cisco IOS command to identify and access the card is **slot0:** or **slot1:**, depending on the Flash card slot in use. When using a Flash disk, those commands are replaced with **disk0:** or **disk1:**. Other, specific Flash disk information is found in the remainder of this publication.


Note

A boot image that supports the ATA Flash disk file system must reside in bootflash.

To enable booting from a Flash disk, set the register bits to 0x2102 and enter the **boot system** command, as follows:

```
Router#configure terminal
Enter configuration commands, one per line. End with CTRL-Z.
Router(config)#config-reg 0x2102
Router(config)#boot system disk0:gsr-p-mz.120-17.S
Router(config)#^Z
Router#copy running-config startup-config
```

Flash disk boot commands are described in [Table 2](#).

Table 2 Flash Disk Boot System Command Formats

Command	Description
Router(config)# boot system disk0:filename ¹	Boots the named file from the Flash disk in slot 0.
Router(config)# boot system disk1:filename ¹	Boots the named file from the Flash disk in slot 1.

1. Entering a filename is optional. If a filename is not specified, the system attempts to boot the first file located on the Flash disk.

Notes about Flash Disks

Note the following information about the use of Flash disks.

GRP Notes

The following information applies specifically to the GRP:

- Cisco IOS Release 12.0(17)S or 12.0(17)ST or later is required, along with the corresponding boot images for the GRP to function with a Flash disk. Flash disk system boot support is provided only in the IOS bootloader.
- In ROM Monitor version 181 or earlier, the Flash disk file system is not recognized.
- If you upgrade to ROM Monitor version 182 or later, you must also format the Flash disk with Cisco IOS Release 12.0(22)S or later.

GRP and PRP Notes

If the system does not automatically boot the Cisco IOS software image, then the system enters the ROM monitor and the ROM monitor prompt appears (rommon>). If this prompt appears, you must boot the Cisco IOS software image you want to use by entering the appropriate **boot** command at the ROM monitor prompt. These commands are listed in [Table 3](#).

Table 3 ROM Monitor Boot System Command Formats

Command	Description
rommon> boot flash disk0:filename ¹	Boots the named file from the Flash disk in slot 0.
rommon> boot flash disk1:filename ¹	Boots the named file from the Flash disk in slot 1.

1. Entering a filename is optional. If a filename is not specified, the system attempts to boot the first file located on the Flash disk.

**Caution**

The **b flash disk0:** and **b flash disk1:** commands are only used from the ROM monitor (rommon>) prompt if the system fails to load normally. Do not use these commands to boot a file from the router (router>) prompt. See [Table 2](#) for the Flash disk boot system commands to use at the router prompt.

Obtaining Documentation

The following 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 the following URL:

<http://www.cisco.com>

Translated documentation is available at the following 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

Cisco documentation is available in the following ways:

- Registered 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 corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click **Feedback** at the top of the Cisco Documentation home page. After you complete the form, print it out and fax it to Cisco at 408 527-0730.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

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- Resolve technical issues with online support
- Download and test software packages
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You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

<http://www.cisco.com>

Technical Assistance Center

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

Inquiries to Cisco TAC 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.

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

Cisco TAC Web Site

The Cisco TAC Web Site allows you 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 the following URL:

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

All customers, partners, and resellers who have a valid Cisco services 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 the following URL to register:

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

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

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

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; 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 will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following 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). In addition, please have available your service agreement number and your product serial number.

This publication is used in conjunction with the installation and configuration guide for your Cisco 12000 Series Internet Router.

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