



# Release Notes for Cisco SN 5428 Storage Router Release 2.2.2

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May 7, 2002



**Note**

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You can find the most current documentation on Cisco.com. This set of electronic documents may contain updates and modifications made after the hard-copy documents were printed.

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These release notes support Cisco SN 5428 Storage Router software release 2.2.2.

For a list of software caveats that apply to Release 2.2.2, see the “[Caveats](#)” section. The caveats are updated for every maintenance release and are located on Cisco.com and the Documentation CD-ROM.

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# Introduction

The Cisco SN 5428 Storage Router provides universal access to storage over IP networks. The storage router software controls the operation of the Cisco SN 5428 Storage Router and provides the following services:

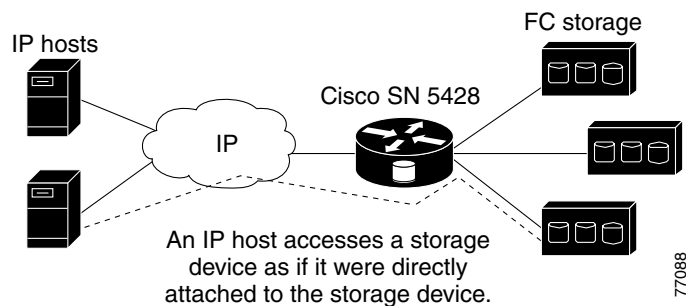
- SCSI Routing—provides IP hosts with access to Fibre Channel (FC) storage devices, using iSCSI protocol.
- VLAN Access Control—provides IP access control to storage based on a VLAN identifier (VID) number (in addition to access control through access lists)
- Authentication—provides iSCSI authentication using AAA authentication methods
- High Availability (HA)—provides the ability to group storage routers in a cluster for failover and other cluster-related functions
- SNMP/MIB support—provides network management of the SN 5428 through SNMP using selected MIBs
- A command-line interface (CLI) and a web-based GUI—provides user interfaces for configuration and maintenance of an SN 5428


**Note**

The iSCSI protocol is an IETF-defined protocol for IP storage (ips). For more information about the iSCSI protocol, refer to the IETF standards for IP storage at <http://www.ietf.org>.

SCSI routing provides IP hosts with access to FC storage devices as if the storage devices were directly attached to the hosts, with access to devices being managed primarily in the SN 5428 Storage Router.

**Figure 1** *SCSI Routing Overview*



An iSCSI target (also called logical target) is an arbitrary name for a group of physical storage devices. The iSCSI targets are created and mapped to physical storage devices attached to the SN 5428. The storage router presents the iSCSI targets to IP hosts (iSCSI initiators) as if the physical storage devices were directly attached to the hosts. (See Figure 1.) With SCSI routing, storage devices are not aware of each IP host; the storage devices are aware of the SN 5428 and respond to it as if it were one FC host.

# System Requirements

This section describes the system requirements for Release 2.2.2 and includes the following information:

- [Network Equipment, page 3](#)
- [IP Hosts, page 3](#)
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- [iSCSI Driver Version Support, page 4](#)
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## Network Equipment

- The SN 5428 Storage Router's Gigabit Ethernet interfaces use a flow control mechanism for stopping and starting traffic that prevents the loss of data. Flow control should also be turned on at the router's Gigabit Ethernet interfaces where the SN 5428 Storage Router is connected.
- If the SN 5428 Storage Router is participating in a cluster, and the HA or management interfaces are plugged into a switch that has Spanning Tree Protocol (STP) enabled, the storage router should be considered as an end station and the affected ports on the switch should be configured appropriately. For example, set "portfast" on Cisco switches to cause the ports to immediately switch from blocking mode to forwarding mode. This helps prevent time-outs, which can cause unexpected behavior when storage routers join a cluster.

## IP Hosts

To ensure the best performance for the SN 5428 Storage Router and the iSCSI drivers, the extended windowing feature of TCP and the receive and transmit flow control feature of the Gigabit Ethernet driver should be enabled on all IP hosts connecting to the SN 5428. On the SN 5428 Storage Router, you can use the CLI **show scsirouter all connection tcp** command to display the current and maximum TCP window size for each connected host.

## Graphical User Interface

The SN 5428's web-based GUI officially supports the following browsers:

Browser	Platform
Microsoft Internet Explorer version 5.5 with service pack 2, or later	Microsoft Windows NT 4.0, Microsoft Windows 2000
Netscape Navigator version 4.76	Linux
Netscape Navigator version 4.7	Sun Solaris

The browser must be enabled to support JavaScript and style sheets.

To access the online Help system for the GUI, the browser must also be enabled to support Java. This requirement applies only to the online Help system.

## iSCSI Driver Version Support

A Cisco SN 5428 Storage Router running software release 2.2.2 or later is compatible with an IP host running any Cisco iSCSI Driver version 2.1.1 or later; it is not compatible with an IP host running any Cisco iSCSI Driver version 1.8.x.

## Obtaining Updated Software and iSCSI Drivers

From time to time, Cisco releases updated versions of SN 5428 Storage Router software and iSCSI drivers. Updated versions of storage router software and the Cisco iSCSI drivers, accompanying readme files, release notes and example configuration file are available for download.

If you are a registered Cisco.com user, you can download SN 5420 Storage Router software and iSCSI drivers. If you are a non-registered Cisco.com user, you can download only iSCSI drivers.

You can access software by following these instructions:

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- Step 1** At <http://www.cisco.com> (or <http://www.cisco.com/login/cisco/>, if you are a registered Cisco.com user and logged in), under **Service & Support**, click **Software Center**.
  - Step 2** At the Software Center web page, under **Software Products & Downloads**, click **Storage Networking Software**.
  - Step 3** At the Storage Networking Software web page, click the appropriate link for your software.
  - Step 4** At the software download web page, click the file that you want to download. Another software download web page will be displayed. Follow the instructions on that and any subsequent web pages to download the software.
  - Step 5** To install and configure storage router software, see the appropriate storage router software configuration guide and release notes. To install and configure an iSCSI driver, see the readme file that accompanies the iSCSI driver (in the downloaded driver archive file) and the appropriate release notes.
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## Determining the SN 5428 Software Version

To determine the version of SN 5428 software running on the Cisco SN 5428 Storage Router, establish a Telnet or console port session with the storage router, and enter the CLI **show version** command. (See [Example 1](#).)

### **Example 1** Determining the Software Version

```
[SN5428-A01]$ show version

CISCO SN 5428 Storage Router

Operating System Software Ver: 2.2.2
→ System Bootstrap Ver: 2.2.2
→ Application Software Ver: 2.2.2
CLI Version 2.1

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```

The *Application Software* field displays the version of software currently running on the storage router. The *System Bootstrap* field displays the software version that will run the next time the storage router is restarted.

You can also check the version of the SN 5428 software by using the SN 5428 web-based GUI. Log in as Monitor to display the **Processor and Software Information** table, or click **Processor and SW** (under **System**) in the **Monitor** dynamic menu list in the left frame. The **Software Version** field contains the current software version information.

## Limitations and Restrictions on SN 5428 Storage Router Clusters

This release includes the following restrictions on SN 5428 Storage Router clusters:

- A cluster can contain up to two SN 5428 Storage Routers.
- A cluster can contain up to 12 SCSI routing instances.
- A cluster can support up to 100 iSCSI targets.

## Important Notes

The SN 5428 Gigabit Ethernet ports, GE 1 and GE 2, use MT-RJ small form-factor pluggable (SFP) modules (Cisco Product Number SN-SFP-GEMM-MTRJ). The availability of the MT-RJ SFP modules may be limited; if they are unavailable, you can use the LC SFP modules (Cisco Product Number SN-SFP-FCGEMM-LC) that are used in the SN 5428 Fibre Channel ports. You can mix MT-RJ and LC SFP modules in the Gigabit Ethernet ports. For example, you could have an MT-RJ SFP module in the GE 1 port and an LC SFP module in the GE 2 port. However, you must use only the LC SFP modules in the Fiber Channel ports.

## Caveats

Caveats describe unexpected behavior or defects in SN 5428 software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious.

This document describes open and resolved severity 1 and 2 caveats and selected caveats of other severities.

- The “[Open Caveats](#)” section lists caveats that are open in the current release and may be open in previous releases.
- The “[Resolved Caveats](#)” section lists caveats that are resolved in this release, but open in previous releases.

Within the sections, the caveats are sorted alphanumerically by caveat number.



### Note

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any version. You can reach Bug Navigator II on Cisco.com at Service & Support: [http://www.cisco.com/cgi-bin/Support/Bugtool/launch\\_bugtool.pl](http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl).

## Open Caveats

All the caveats in this section are open in SN 5428 software release 2.2.2.

### CLI

- CSCdx03598

Pressing the question mark (?) key after the **facility** keyword in the **logging route add** command does not display a list of valid facility names.

Workaround: Enter a valid facility name as described in the *Cisco SN 5428 Storage Router Software Configuration Guide*.

- CSCdx25092

Selecting a logging destination of *gui* or *smtp* with the **logging route add** command fails to log messages to any destination.

Workaround: The *gui* and *smtp* logging destinations are not yet implemented. Select another destination, or select *all* destinations to route log messages to all valid destinations.

### Configuration Management

- CSCdx18936

After the SN 5428 Storage Router is restarted, all levels of log messages are displayed on the serial console. A **show logging** command shows the console logging level set to *notification*, but all messages are logged to the serial console as if the console logging level was set to *debugging*. Management sessions via Telnet are correctly logging messages at the appropriate level; the problem only occurs on the serial console after the SN 5428 is restarted.

Workaround: Issue the **logging console level** command on the serial console to set the logging level as desired for that session.

### SNMP

- CSCdx39505

A memory leak may occur when walking the CDP MIB. A bulk walk that traverses *cdpVTPMgmtDomain* has caused a leak of approximately 1.2KB.

Workaround: Avoid bulk walks of the CDP MIB.

## Resolved Caveats

All of the caveats listed in this section are resolved in SN 5428 software release 2.2.2.

### CLI

- CSCdx34878

The **vlan vid mtusize** command allows an invalid MTU range of 1500 through 16114. If the MTU size is set to a value greater than 9000, an IP address associated with this VLAN cannot be added as a server interface to a SCSI routing instance.

Workaround: Do not set the MTU size greater than 9000 for a VLAN.

### FC Switch

- CSCdx43250

The SN 5428 Storage Router does not interoperate with the Compaq MA8000 disk array.

Workaround: None. This problem is resolved in SN 5428 software release 2.2.2.

## Documentation Updates

On page 8-29 of the *Cisco SN 5428 Storage Router Software Configuration Guide*, the last paragraph should be expanded to include the location of the SN 5428 log, crash trace, savedconfig and script files, and should read as follows:

The SN 5428 Storage Router log files and crash trace files are stored in the */ata4/log* directory. Saved configuration files are stored in the */ata3/savedconfig* directory. Script files are stored in the */ata3/script* directory.

To use FTP to retrieve the SN 5428 Storage Router log file, change to the */ata4/log* directory using the FTP *cd* command. If necessary, specify the binary flag using the FTP *binary* command. Issue the FTP *get* command to retrieve the *messages0* file and to copy it to the specified file on your server. When the process completes, close the FTP connection using the FTP *bye* command.

## Related Documentation

The following sections describe the related documentation available for Cisco SN 5428 Storage Router Release 2.2.2. These documents consist of hardware installation and software configuration guides, and platform-specific release notes, readme and example configuration files for the Cisco Storage Networking iSCSI drivers.

## Release-Specific Documents

This Release Notes document is the only document specific to SN 5428 Release 2.2.2. It is only available as an electronic document on Cisco.com and the Documentation CD-ROM.

## Platform-Specific Documents

Platform-specific documents consist of the release notes, readme and example configuration files for Cisco Storage Networking iSCSI drivers, version 2.1.x. The files are currently available in electronic format only. See the [“Obtaining Updated Software and iSCSI Drivers”](#) section on page 4 for details.

## Hardware Documents

Refer to the *Cisco SN 5428 Storage Router Hardware Installation Guide* for hardware installation procedures. This document is available as a printed manual. It is also available as an electronic document on Cisco.com and the Documentation CD-ROM.

## Software Documents

Refer to the *Cisco SN 5428 Storage Router Software Configuration Guide Release 2.2*, for configuration information and procedures. This document is available as a printed manual. It is also available as an electronic document on Cisco.com and the Documentation CD-ROM.

For documentation on the SN 5428 web-based GUI, refer to the SN 5428 Storage Router web-based GUI online Help system.

## Service and Support

For service and support for a product purchased from a reseller, contact the reseller, who offers a wide variety of Cisco service and support programs described in “Service and Support” of Cisco Information Packet shipped with your product.



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**Note**

If you purchased your product from a reseller, you can access Cisco.com as a guest. Cisco.com is Cisco Systems’ primary real-time support channel. Your reseller offers programs that include direct access to Cisco.com services.

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For service and support for a product purchased directly from Cisco, use Cisco.com.

## Software Configuration Tips on the Cisco TAC Home Page

A variety of Cisco SN 5428 Storage Router software installation, configuration and usage tips are available on the Cisco Technical Assistance Center (TAC) Web Site.

You can access “tech tips” by following these instructions:

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- Step 1** At <http://www.cisco.com> (or <http://www.cisco.com/login/cisco/>, if you are a registered Cisco.com user and logged in), under **Products & Technologies**, select **Routers** from the drop-down list.
  - Step 2** At the Cisco Routers web page, under **Cisco SN 5428 Storage Router Software**, click **Product Support**.
  - Step 3** At the Cisco SN 5428 Storage Router Product Support web page, click the appropriate links for additional information about installing and configuring storage router software.
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## 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](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.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](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 the **Fax** or **Email** option under the “Leave Feedback” at the bottom of the Cisco Documentation home page.

You can e-mail your comments to [bug-doc@cisco.com](mailto: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.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support

- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

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, 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.

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This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.



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