
# D Commands

This chapter covers the following commands:

# debug aaa

To enable debugging for authentication, authorization, and accounting (AAA) services, use the **debug aaa** command. To disable debugging for AAA authentication services, use the **no** form of this command.

**debug aaa**

**no debug aaa**

## Syntax Description

This command has no arguments or keywords.

## Defaults

Debugging is not enabled.

## Command Modes

Administrator.

## Command History

| Release | Modifications |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

Use this command to debug problems with iSCSI, Enable and Login authentication or general AAA authentication services. Create log route entries for notification level *debugging* to send the trace and debug messages to the desired destination, using the **logging level** command.

## Examples

The following example enables AAA debugging:

```
[SN5428-2A]# debug aaa
```

## Related Commands

| Command | Description |
|---|---|
| **aaa authentication enable** | Configure AAA authentication services for Administrator mode access to the storage router via the CLI **enable** command. |
| **aaa authentication iscsi** | Configure the AAA authentication services to be used for iSCSI authentication. |
| **aaa authentication login** | Configure AAA authentication services for Monitor mode access to the storage router via the CLI. |
| **aaa group server radius** | Create a named group of RADIUS servers for AAA authentication services. |
| **aaa group server tacacs+** | Create a named group of TACACS+ servers for AAA authentication services. |
| **aaa test authentication** | Enable testing of AAA authentication services. |
| **debug scsirouter** | Enable debugging for the named SCSI routing instance. |
| **logging level** | Add rule entries to route storage router event, debug and trace messages to various destinations based on facility and notification level. |
| **restore aaa** | Restore AAA configuration services from a saved configuration file. |
| **save aaa** | Save the current AAA configuration information. |
| **scsirouter authentication** | Enable iSCSI authentication for the named SCSI routing instance. |
| **show aaa** | Display AAA configuration information. |

# debug cmd

To run any operating system command with up to five arguments from the CLI, use the **debug cmd** command.

**debug cmd** *os-command* **[***parameters***]**

## Syntax Description

| | |
|---|---|
| *os-command* | Any valid operating system command. Do not invoke interactive functions. |
| *parameters* | Up to five command parameters. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modifications |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

The **debug cmd** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

## Examples

The following example displays usage information for the **debug cmd**:

```
[SN5428-2A]# debug cmd dbgRunOSCmdHelp 0
[SN5428-2A]# debug cmd dbgRunOSCmdHelp 0c 1a c4 3c

Running command dbgRunOSCmdHelp(0xc1ac43c) with args 0 0 0 0 0


CLI usage: debug cmd symbol arg1 .. arg5
  symbol -- any named OS function
  arg1 .. arg5 -- numbers (interpreted as hex) or
                  strings if escaped with an initial '$', such as $fc1
                  Anything that doesn't convert to a number is a string

Return value is 0 = 0x0 (OK)
```

## Related Commands

| Command | Description |
|---|---|
| **debug aaa** | Enable debugging for AAA authentication services. |
| **debug scsirouter** | Enable debugging for the named SCSI routing instance. |

# debug fcip

To enable trace facilities for debugging FCIP instances, use the **debug fcip** command. To disable debugging, use the **no** form of this command.

**debug fcip** *name* **{mailboxtrace | packettrace** *mask***}**

**no debug fcip** *name* **mailboxtrace**

## Syntax Description

| | |
|---|---|
| *name* | The name of the FCIP instance to be debugged. |
| **mailboxtrace** | Keyword, indicating that mail box tracing services will be enabled. |
| **packettrace** *mask* | Keyword, indicating that packet tracing services will be enabled. The mask value indicates the traces to capture, in hex. The default value, 0xFFFF, captures all traces. A value of 0x0000 turns off packet tracing. |

## Defaults

All trace facilities are enabled, by default. The packet trace mask value defaults to 0xFFFF, capturing all traces.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 3.3.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

The **debug fcip** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

Use this command to trace traffic associated with the named FCIP instance. Use the **show debug fcip** command to view the trace buffer output. The *mask* value defaults to 0xFFF, all packets are traced. A *mask* value of 0x0000 will turn off packet tracing.

Debug settings are not persistent and will return to default value when the storage router is rebooted. To retain a mask value for packet tracing services, use the **fcip destination config** command with the **pkttracemask** keyword to change the FCIP instance configuration and then save the changes to the storage router bootable configuration.

## Examples

The following example enables the debug mail box tracing services for the FCIP instance named *fcip1*:

```
[SN5428-2A]# debug fcip fcip1 mailboxtrace
```

The following example enables the debug packet tracing services for the FCIP instance named *fcip2*. All packets will be traced.

```
[SN5428-2A]# debug fcip fcip2 packettrace 0xffff
```

The following example disables debug mail box tracing services for the FCIP instance named *fcip1*:

```
[SN5428-2A]# no debug fcip fcip1 mailboxtrace
```

The following example turns off all packet tracing services for the FCIP instance named *fcip2*:

```
[SN5428-2A]# debug fcip fcip2 packettrace 0x0000
```

## Related Commands

| Command | Description |
|---|---|
| **fcip** | Create an FCIP instance. |
| **fcip destination config** | Configure operational parameters for the named FCIP instance. |
| **show debug fcip** | Display debugging information for the named FCIP instance. |

# debug interface fc?

To configure a variety of operational parameters for the internal FC interface switch ports, use the **debug interface fc?** command. To disable various parameters, use the **no** form of this command.

**debug interface** *fc?* **{al-fairness | fan-enable |ms-enable} enable**

**debug interface** *fc?* **default**

**debug interface** *fc?* **diag**

**debug interface** *fc?* **enable**

**debug interface** *fc?* **ext-credit** *nn*

**debug interface** *fc?* **linkspeed {auto | 1gb | 2gb}**

**debug interface** *fc?* **loopback {external | internal | online}**

**debug interface** *fc?* **mfs-bundle enable [timeout** *nn***]**

**debug interface** *fc?* **type {auto | donor | f-port | fl-port | g-port | gl-port}**

**debug interface** *fc?* **type tl-port mode {autobridge | autolearn}**

**no debug interface** *fc?* **{al-fairness | fan-enable | ms-enable} enable**

**no debug interface** *fc?* **enable**

**no debug interface** *fc?* **mfs-bundle enable [timeout** *nn***]**

## Syntax Description

| | |
|---|---|
| *fc?* | The name of the internal FC interface switch port for which you are setting this parameter. Valid values are fc0 and fc15. When you type the **debug interface fc?** command, the CLI lists the interfaces available. You cannot specify a nonexistent interface. |
| **al-fairness enable** | Keywords, used to enable the fairness algorithm (loop priority) on the named internal switch port. |
| **default** | Keyword used to reset the port to default operational parameters. |
| **diag** | Keyword used to places the switch port into diagnostic mode for testing purposes. |
| **enable** | Keyword used to enable the specified switch port. |
| **ext-credit** *nn* | Keywords used to enable the port to use additional data buffer credits. Valid values are 0, 11, 22, 33, 44, 55, 66 and 77. The default is 0, indicating that the port is not enabled for credit extension. |
| **fan-enable enable** | Keywords, used to enable Fabric Address Notification (FAN) on the specified switch port. |
| **linkspeed auto** | Keywords, indicating that the transfer rate is negotiated. |
| **linkspeed 1gb** | Keywords, indicating the transfer rate is fixed at 1 Gbps. |
| **linkspeed 2gb** | Keywords, indicating the transfer rate is fixed at 2 Gbps. |

| | |
|---|---|
| **loopback external** | Keywords, indicating an external test will be performed. The specified port must be in a diagnostic state. |
| **loopback internal** | Keywords, indicating an internal test will be performed. The specified port must be in a diagnostic state. |
| **loopback online** | Keywords, indicating an online loopback test will be performed. The specified port must be enabled. |
| **mfs-bundle enable** | Keywords, used to enable Multi-Frame sequence (MFS) bundling for the named switch port. |
| **timeout** *nn* | The timeout value associated with MFS bundling, in milliseconds. Valid values are 10 through 20480. The default timeout value is 10 msecs. |
| **ms-enable enable** | Keywords, used to enable GS-3 management server commands for the specified switch port. |
| **type auto** | Keywords, indicating the port type is automatically negotiated and functions as a generic loop (GL_Port). |
| **type donor** | Keywords, indicating the port type is donor. A donor port places its data buffer credits in a pool that ports configured for credit extension draw on. A donor port is essentially disabled; it cannot be used for FC communication. |
| **type f-port** | Keywords, indicating that the port type is fabric. F_Ports are fabric ports. |
| **type fl-port** | Keywords, indicating that the port type is fabric loop (also known as “public loop”). |
| **type g-port** | Keywords, indicating that the port type is generic and can function as either an F_Port or an E_Port. An E_Port is also known as an “expansion port.” |
| **type gl-port** | Keywords, indicating that the port type is generic loop and can function as either an F_Port, FL_Port, or E_Port. |
| **type tl-port** | Keywords, indicating that the port type is translated loop. |
| **mode autobridge** | Keywords, indicating public targets are made visible to the initiator in a private loop. |
| **mode autolearn** | Keywords, indicating targets in a private loop are made visible. |

## Defaults

The internal FC switch ports have the following default operational characteristics:

- fairness algorithm is disabled (switch has priority)
- Fabric Address Notification (FAN) is enabled
- transfer rate is fixed at 2 Gbps
- Multi-Frame sequence bundling is enabled
- GS-3 management server commands are enabled
- port type is fabric (F_Port)
- credit extension is disabled (ext-credit is set to 0)

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.5.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. For the SN 5428, the **ext-credit** keyword was added. |

## Usage Guidelines

The **debug interface fc?** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

**Caution** Changing operational characteristic for the interface FC switch ports can cause unexpected behavior in the storage router.

## Examples

The following example places the internal FC switch port *fc0* into diagnostic mode for testing purposes:

```
[SN5428-2A]# debug interface fc0 diag
```

## Related Commands

| Command | Description |
|---|---|
| **show debug interface fc?** | Display debug information for internal FC interface switch ports. |

# debug interface fci?

To specify the maximum number of firmware dump files that can exist on the storage router for a specified initiator interface, or to remove all existing firmware dump files, use the **debug interface** command.

**debug interface** *if-name* **{forcefcfwdump | lldrestartfcfw}**

**debug interface** *if-name* **fwdumpcount** *nn*

**debug interface** *if-name* **removefwdumps**

## Syntax Description

| | |
|---|---|
| *if-name* | Enable IP trace for the FC initiator interfaces. When you type the **debug interface fci?** command, the CLI lists the interfaces available. You cannot specify a nonexistent interface. |
| **forcefcfwdump** | Force a dump of FC firmware. A file named *qlclifwdump01.txt* is created in the */ata4* partition. |
| **lldrestartfcfw** | Restart the FC firmware. Any existing connections may be dropped. |
| **fwdumpcount** *nn* | Specify the maximum number of times the firmware dump files for the specified interface can be overwritten. If a firmware dump is requested and the dump files cannot be overwritten, the firmware will be restarted but a dump file will not be created. The default is 1. |
| **removefwdumps** | Keyword used to clear all existing firmware dump files for the specified interface from the storage router. |

## Defaults

The maximum number of times firmware dump files can be overwritten for each FC initiator interface is 1.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.5.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. For the SN 5428, the **forcefcfwdump** and **lldrestartfcfw** keywords were added, replacing the **show debug** command with the **forcefcfwdump** and **lldrestartfcfw** keywords. |

## Usage Guidelines

Best practices suggest clearing all existing firmware dump files for the specified interface before requesting a new firmware dump.

**Caution** Some **debug interface fci?** commands may perform actions that drop existing connections or otherwise impact normal storage router performance. The **debug interface fci?** command is designed for debug purposes and should be used under the guidance of a Cisco Technical Support professional.

## Examples

The following example sets the maximum number of times the firmware dump files for *fci1* can be overwritten to 2:

```
[SN5428-2A]# debug interface fci1 fwdumpcount 2
```

The following example clears all firmware dump files for *fci2*:

```
[SN5428-2A]# debug interface fci2 removefwdumps
```

## Related Commands

| Command | Description |
|---|---|
| **show debug** | Display a variety of debug information or perform specific troubleshooting activities. |
| **show interface** | Display operational and configuration information for the specified interface or all interfaces. |

# debug interface ge?

To enable packet tracing on a Gigabit Ethernet interface, use the **debug interface ge?** command. To disable packet tracing, use the **no** form of this command.

**debug interface** *ge?* **trace [pktcnt** *nn***] [pktsize** *nn***] enable**

**no debug interface** *ge?* **trace enable**

## Syntax Description

| | |
|---|---|
| *ge?* | Enable IP trace for the specified Gigabit Ethernet interface. When you type the **debug interface ge?** command, the CLI lists the interfaces available. You cannot specify a nonexistent interface. |
| **trace** | Keyword indicating IP packet tracing will be enabled. |
| **pktcnt** *nn* | (Optional) Specify the maximum number of packets to be traced. *nn* must be a value greater then zero (0). If not specified, a circular trace buffer is used. This is the default. |
| **pktsize** *nn* | (Optional) Specify the maximum number of bytes to trace per packet. Valid values are 14 to 1024, inclusive. The default is 128. |
| **enable** | Keyword used to enable IP packet tracing. |

## Defaults

IP packet tracing for all Gigabit Ethernet interfaces is disabled by default. The maximum trace size is 128, and all packets use a circular trace buffer.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.5.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

The **debug interface ge?** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

- Use the **pktcnt** keyword to specify the maximum number of packets to be traced. IP packet tracing will automatically be disabled when the specified number of packets is traced, or the trace buffer fills up. If a packet count is not specified, a circular trace buffer is used. The default trace buffer size is 131072 bytes.
- Use the **pktsize** keyword to specify the maximum number of bytes to trace per packet. This value must be in the range of 14 to 1024. The default number of bytes to trace per packet is 128.
- Use the **show debug interface** command to display statistics about the packet trace and to display the contents of the trace buffer in hex.

**Note** IP packet tracing must be disabled on the interface before the trace buffer can be displayed.

## Examples

The following example enables IP packet tracing on the *ge2* interface:

```
[SN5428-2A]# debug interface ge2 trace enable
```

The following example enables IP packet tracing on *ge1*, for a maximum of 100 packets. A maximum of 200 bytes will be traced per packet.

```
[SN5428-2A]# debug interface ge1 trace pktcnt 100 pktsize 200 enable
```

## Related Commands

| Command | Description |
|---|---|
| **show debug** | Display a variety of debug information or perform specific troubleshooting activities. |
| **show debug interface ge?** | Display IP packet trace statistics or the contents of the trace buffer. |

# debug ip rip

To enable routing information protocol (RIP) debug log message, use the **debug ip rip** command. To disable RIP debug log message, use the **no** form of this command.

**debug ip rip**

**no debug ip rip**

## Syntax Description

This command has no arguments or keywords.

## Defaults

RIP debug log messages are disabled.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 3.2.1 | This command was introduced. |

## Usage Guidelines

The **debug ip rip** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

## Examples

The following example enables RIP, configures logging to send debug message to all virtual terminal sessions, and then enables RIP debug log messages. The **show ip rip** command is used to verify the running RIP configuration.

```
[SN5428-2A]# ip rip enable
Dec 09 16:12:50: %IP-5-IRMRSAR: RIP Services are running
*[SN5428-2A]# logging level debug from ip to vty
*[SN5428-2A]# debug ip rip
Dec 31 12:52:14: %IP-7-IRRPRL00: RIP Packet received from 10.1.30.1 length 124
Dec 31 12:52:14: %IP-7-IRRPRL01:   command 2 version 1
Dec 31 12:52:14: %IP-7-IRRPRL02:     route af 2, dest 10.1.40.0 mask 0.0.0.0 nextHop
0.0.0.0 metric 2
Dec 31 12:52:14: %IP-7-IRRPRL02:     route af 2, dest 10.1.51.0 mask 0.0.0.0 nextHop
0.0.0.0 metric 1

*[SN5428-2A]# show ip rip
Routing Information Protocol (RIP) Information:
        Invalid Timer: 180
        Enabled Flag:  true
        Debug Flag:    true
        Running Flag:  true
```

## Related Commands

| Command | Description |
|---|---|
| **ip rip enable** | Enable the storage router to learn dynamic routing using the routing information protocol (RIP). |
| **show ip** | Display entries from the storage router routing table, and statistics for the protocols used in the storage router network. Use the **rip** keyword to display RIP configuration information. |

# debug isns

To enable tracing of iSNS Protocol Data Units (PDUs), use the **debug isns** command. To disable the iSNS trace facility, use the **no** form of this command.

**debug isns trace [pducnt** *nn***] [pdusize** *nn***] enable**

**no debug isns trace enable**

## Syntax Description

| | |
|---|---|
| **trace** | Keyword indicating iSNS PDU tracing will be enabled. |
| **pducnt** *nn* | (Optional) Specify the maximum number of PDUs to be traced. *nn* must be a value greater then zero (0), and cannot exceed 4294967295. If not specified, a circular trace buffer is used. This is the default. |
| **pdusize** *nn* | (Optional) Specify the maximum number of bytes to trace per PDU. The default is 1024 bytes. |
| **enable** | Keyword used to enable iSNS PDU tracing. |

## Defaults

iSNS PDU tracing is disabled. The default PDU size is 1024 bytes, and uses a circular trace buffer.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 3.4.1 | This command was introduced. |

## Usage Guidelines

The **debug isns** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

## Examples

The following example enables iSNS PDU tracing:

```
[SN5428-2A]# debug isns trace enable
```

The following example enables iSNS PDU tracing, for a maximum of 100 PDUs. A maximum of 40 bytes will be traced per PDU.

```
[SN5428-2A]# debug isns trace pducnt 100 pdusize 40 enable
```

## Related Commands

| Command | Description |
|---|---|
| **isns enable** | Enable communications and client registrations with an iSNS server. |
| **isns refresh** | Force a refresh of the iSNS server with device registrations. |
| **show debug isns** | Display iSNS PDU traced contents and statistics. |
| **show isns** | Display iSNS configuration information, objects, or operational statistics. |

# debug scsirouter

To enable trace facilities for debugging SCSI routing instances, use the **debug scsirouter** command. To disable debugging, use the **no** form of this command.

**debug scsirouter** *name* **scsitrace**

**no debug scsirouter** *name* **scsitrace**

## Syntax Description

| | |
|---|---|
| *name* | The name of the SCSI routing instance to be debugged. |
| **scsitrace** | Keyword indicating tracing services will be enabled. |

## Defaults

All trace facilities are enabled by default.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

When enabled at this level, debug tracing will trace traffic to and from all targets associated with the named SCSI routing instance. Use the **show debug scsirouter** command to view the trace buffer output.

## Examples

The following example enables debug tracing facilities for a SCSI routing instance named *foo*:

```
[SN5428-2A]# debug scsirouter foo scsitrace
```

## Related Commands

| Command | Description |
|---|---|
| **debug aaa** | Enable debugging for AAA authentication services. |
| **debug scsirouter iscsitrace** | Enable iSCSI trace facilities for debugging connections to and from the specified SCSI routing instance. |
| **debug scsirouter target** | Enable debugging for a specific SCSI routing instance target and LUN combination. |
| **show debug scsirouter** | Display trace buffer output. |

# debug scsirouter iscsitrace

To enable trace facilities for debugging iSCSI connections to and from SCSI routing instances, use the **debug scsirouter iscsitrace** command. To disable iSCSI trace facilities, use the **no** form of this command.

**debug scsirouter** *name* **iscsitrace [fromto {***A.B.C.D/bits* | *A.B.C.D/1.2.3.4***}] [pducnt** *nn***] [pdusize** *nn***] enable**

**no debug scsirouter** *name* **iscsitrace enable**

## Syntax Description

| | |
|---|---|
| *name* | The name of the SCSI routing instance to be debugged. |
| **fromto** *A.B.C.D/bits* | (Optional) Trace iSCSI Protocol Data Units (PDUs) from and to the specified host or network. *A.B.C.D* is the dotted quad notation of the IP address. The */bits* specifies the subnet mask in CIDR style. |
| **fromto** *A.B.C.D/1.2.3.4* | (Optional) Trace iSCSI PDUs from and to the specified host or network. *A.B.C.D* is the dotted quad notation of the IP address. *1.2.3.4* is the dotted quad notation of the subnet mask. |
| **pducnt** *nn* | (Optional) Specify the maximum number of PDUs to trace. |
| **pdusize** *nn* | (Optional) Specify the maximum trace size per PDU, in bytes. |
| **enable** | Enable iSCSI trace facilities. |

## Defaults

The following are the default iSCSI trace options:

- All client connections to and from the specified SCSI routing instance are traced.
- The maximum trace size per PDU is 48 bytes.
- All PDUs are traced (circular).
- The trace buffer size is 131072 bytes. This value cannot be changed.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 3.3.1 | This command was introduced. |

## Usage Guidelines

The **debug scsirouter iscsitrace** command is designed for debug purposes, and should be used under the guidance of a Cisco Technical Support professional.

Use the **show debug scsirouter** command with the **iscsitrace** keyword to display iSCSI trace information.

## Examples

The following example enables iSCSI trace facilities for the SCSI routing instance named *zeus*, using the default iSCSI trace options:

```
[SN5428-2A]# debug scsirouter zeus iscsitrace enable
```

## Related Commands

| Command | Description |
|---|---|
| **debug scsirouter** | Enable debugging for the named SCSI routing instance. |
| **debug scsirouter target** | Enable debugging for a specific SCSI routing instance target and LUN combination. |
| **show debug scsirouter** | Display trace buffer output. |

# debug scsirouter target

To enable trace facilities for debugging a specific SCSI routing instance target and LUN combination, use the **debug scsirouter target** command. To disable debugging, use the **no debug scsirouter target** form of this command.

**debug scsirouter** *name* **target** *name* **lun** *nn* **scsitrace**

**no debug scsirouter** *name* **target** *name* **lun** *nn* **scsitrace**

## Syntax Description

| | |
|---|---|
| *name* | The name of the SCSI routing instance to be debugged. |
| **target** *name* | The name of the target to be included in the trace. |
| **lun** *nn* | The specific LUN associated with the target. |
| **scsitrace** | Keyword indicating tracing services will be enabled. |

## Defaults

All trace facilities are enabled by default.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

When enabled at this level, SCSI tracing will trace traffic to and from the specified target and LUN combination associated with the named SCSI routing instance. Use the **show debug scsirouter** command to view the trace buffer output.

## Examples

The following example enables SCSI tracing facilities for the target and LUN combination *myTarget*, LUN 0, associated with the SCSI routing instance named *foo*:

```
[SN5428-2A]# debug scsirouter foo target myTarget lun 0 scsitrace
```

## Related Commands

| Command | Description |
|---|---|
| **debug aaa** | Enable debugging for AAA authentication services. |
| **debug scsirouter** | Enable debugging for the named SCSI routing instance. |
| **debug scsirouter iscsitrace** | Enable iSCSI trace facilities for debugging connections to and from the specified SCSI routing instance. |
| **show debug scsirouter** | Display trace buffer output. |

# delete accesslist

To delete an entire access list, all access lists, or a specified entry from the named access list, use the **delete accesslist** command. This command does not change the persistent storage router configuration until the relevant configuration information has been saved using the appropriate **save** command with the **bootconfig** keyword.

**delete accesslist all**

**delete accesslist** *name* **[***A.B.C.D/bits* | *A.B.C.D/1.2.3.4***]**

**delete accesslist** *name* **[chap-username** *username* **| iscsi-name** *string***]**

**delete accesslist** *name* **all**

## Syntax Description

| | |
|---|---|
| *name* | The name of the access list. |
| *A.B.C.D/bits* | (Optional) IP address and subnet mask of the IP host being deleted from the access list. *A.B.C.D* is the dotted quad notation of the IP address. The */bits* specifies the subnet mask in CIDR style. |
| *A.B.C.D/1.2.3.4* | (Optional) IP address and subnet mask of the IP host being deleted from the access list. *A.B.C.D* is the dotted quad notation of the IP address. *1.2.3.4* is the dotted quad notation of the subnet mask. |
| **chap-username** *username* | (Optional) The CHAP user name configured for the IP host being deleted from the access list. The CHAP user name is used for iSCSI authentication purposes. |
| **iscsi-name** *string* | (Optional) The iSCSI Name of the IP host being deleted from the access list. |
| *name* **all** | Delete all entries from the named access list. |
| **all** | Delete all access lists. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 2.3.1 | The **chap-username** and **iscsi-name** keywords were added. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

Because access lists are cluster entities, this operation affects all targets associated with this access list, regardless of where the associated SCSI routing instance is running within the high availability cluster.

- Use the **delete accesslist** *name* **all** to clear all entries from the access list, but retain the access list entity.
- Use the **delete accesslist** *name* command with no additional parameters to completely delete the named access list. Before completely deleting an access list, verify that it is no longer associated with any SCSI routing instance target.

Changes to access lists do not impact currently connected IP hosts; changes are effective for all subsequent connections.

**Note** If you delete an access list that is still associated with a SCSI routing instance target, the target remains bound to the access list, but subsequent connection requests by IP hosts will be rejected (as if the **scsirouter target accesslist none** command had been issued). Use the **show scsirouter** command with the **target** keyword to view access lists associated with SCSI routing instance targets.

In a cluster environment, access list management functions are handled by a single storage router. To determine which storage router is performing access list management functions, issue the **show cluster** command. If you issue a **delete accesslist** command from a storage router that is not performing access list management functions, the CLI displays an informational message with the name of the node that is currently handling those functions.

Refer to the appropriate *Cisco Storage Router Software Configuration Guide* for your storage router model for more information on operating the storage router in a cluster.

## Examples

The following example completely deletes the access list named *fooList* from the currently running configuration:

```
[SN5428-2A]# delete accesslist fooList
```

The following example deletes all entries from the access list named *fooList1*. The access list entity itself is not deleted from the currently running configuration:

```
[SN5428-2A]# delete accesslist fooList1 all
```

The following example deletes all access lists from the currently running configuration:

```
[SN5428-2A]# delete accesslist all
```

The following example deletes the specified IP address from the named access list, *fooList2*. This command does not update the bootable configuration of the storage router until a **save accesslist bootconfig** or **save all bootconfig** command is issued.

```
[SN5428-2A]# delete fooList2 192.168.54.12/32
```

The following example deletes the specified CHAP user name from the named accesslist, *fooList3*. This command does not update the bootable configuration of the storage router until a **save accesslist bootconfig** or **save all bootconfig** command is issued.

```
[SN5428-2A]# delete fooList3 chap-username webserver15
```

The following example deletes the specified iSCSI Name from the named accesslist, *fooList4*. This command does not update the bootable configuration of the storage router until a **save accesslist bootconfig** or **save all bootconfig** command is issued.

```
[SN5428-2A]# delete fooList4 iscsi-name ign.1987-05.com.cisco.01.8838a325b4017f
```

## Related Commands

| Command | Description |
|---|---|
| **accesslist** | Create an access list entity. |
| **accesslist A.B.C.D/bits** | Add IP addresses to an access list. |
| **accesslist chap-username** | Add CHAP user name entries to an access list. |
| **accesslist iscsi-name** | Add iSCSI Name entries to an access list. |
| **restore accesslist** | Restore the named access list or all access lists from the named configuration file. |
| **save accesslist** | Save configuration data for the named access list or for all access lists. |
| **scsirouter target accesslist** | Associate an access list with a specific SCSI routing target or all targets. |
| **show accesslist** | Display the contents of the named access list or all access lists. |

# delete fcalias

To delete the named alias, or the specified member WWPN from the named alias, use the **delete fcalias** command.

**delete fcalias** *alias-name* **[member wwpn** *xxxxxxxxxxxxxxxx***]**

## Syntax Description

| | |
|---|---|
| *alias-name* | The name of the alias. |
| **member wwpn** *xxxxxxxxxxxxxxxx* | The WWPN of the alias member.<br>**Note** WWPN address notation is represented by 16 hex digits. The digits may be separated by colons. When entering WWPN addresses, colons can be omitted or placed anywhere in the address notation as long as they do not leave one character without a partner character. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.5.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

An alias is a collection of Fibre Channel devices, such as switches, initiators, storage and other storage routers, that can be zoned together. An alias is not a zone and cannot include a zone or another alias as a member.

Use this command to delete an entire alias and all its members from the zoning database, or to delete a specified member WWPN from an alias.

If the alias is a member of the active zone set, the alias will not be removed from the active zone set until the active zone set is deactivated. Use the **no zoneset** command with the **enable** keyword to deactivate the active zone set.

**Caution** If the storage router is connected to the FC switched fabric, all zoning changes (including the deletion of an alias) are immediately propagated to other storage routers and switches in the fabric.

Refer to the appropriate *Cisco Storage Router Software Configuration Guide* for your storage router model for more information about FC fabric zoning.

## Examples

The following example deletes the alias named *AliasFoo* and all its members. The alias will be removed from all zone sets in which it is used.

```
[SN5428-2A]# delete fcalias AliasFoo
```

The following example deletes the member WWPN *21000004ed4105ab* from the alias *AliasFoo*:

```
[SN5428-2A]# delete fcalias AliasFoo member wwpn 21000004ed4105ab
```

## Related Commands

| Command | Description |
|---|---|
| **fcalias** | Create an alias entity for use in Fibre Channel zoning. |
| **fcalias member** | Add the specified member to the named alias. |
| **show fcalias** | Display information about aliases and their members. |

# delete fcip

To delete the named elements from the FCIP instance, or to delete the named instance or all FCIP instances, use the **delete fcip** command. This command does not change the persistent storage router configuration until the relevant configuration information has been saved using the appropriate **save** command with the **bootconfig** keyword.

**delete fcip {***name* **| all}**

**delete fcip** *name* **destination**

## Syntax Description

| | |
|---|---|
| *name* | The name of the FCIP instance. |
| **all** | Keyword, used to delete all FCIP instances from the storage router.<br>**Note** You are not prompted to confirm your actions. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 3.3.1 | This command was introduced for the SN 5428-2. |
| 3.4.1 | The destination *name* argument was removed. |

## Usage Guidelines

Use this command if you want to reconfigure the FCIP instance. You can delete the peer destination or the entire FCIP instance, or all FCIP instances. You must save the configuration changes to update the storage router bootable configuration.

## Examples

The following examples deletes the destination from the FCIP instance, *fcip2*:

```
[SN5428-2A]# delete fcip fcip2 destination
```

The following example deletes all FCIP instances:

```
[SN5428-2A]# delete fcip all
```

The following example deletes the FCIP instance named *fcip1*:

```
[SN5428-2A]# delete fcip fcip1
```

## Related Commands

| Command | Description |
|---|---|
| **fcip** | Create an FCIP instance. |
| **show fcip** | Display configuration and operational information for the named FCIP instance. |

# delete logging

To delete a rule from the logging table, use the **delete logging** command.

**delete logging level** *notification-level* **from** *facility-name*

**delete logging #?**

**delete logging #***nn*

## Syntax Description

| | |
|---|---|
| **level** *notification-level* | The notification level of the routing rules entry to be deleted. See Table 4-1 in the Usage Guidelines section for a list of valid names that can be used for the *notification-level* argument. |
| **from** *facility-name* | The name of the facility. A facility is the feature area from which the message is received. See Table 4-2 in the Usage Guidelines section for a list of valid facility names. |
| **#?** | Request an indexed list of entries in the logging table. |
| *#nn* | The index number from the displayed list of entries. The specified routing rule will be deleted. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.3.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

Event, trace and debug messages can be routed to various destinations, based on the notification level of the message and the application area (facility) that generated the message. When a log message is received by the storage router, the logging table rules are searched by facility name and by message level until a match is found. The log message is sent to all the destinations specified by the matching rule.

Use this command to delete logging rules based on notification level and facility name, or by index number.

To display an indexed lists of entries in the logging table, use the number sign (#) character followed by a question mark (?). That action will cause the routing rules in the logging table to be displayed as a numbered (indexed) set of lines. The command is displayed at the prompt below the list to the point of the # keyword. Complete the command by entering the appropriate index number. The specified routing rule will be deleted.

The level limits logging to messages of the specified level or lower levels, based on level number. Table 4-1 describes the available logging levels.

*Table 4-1 Logging Level Notification Levels and Corresponding Numbers*

| Notification Level | Level Number | Description |
|---|---|---|
| **emergency** | 0 | System unusable |
| **alert** | 1 | Immediate action needed |
| **critical** | 2 | Critical conditions |
| **error** | 3 | Error conditions |
| **warning** | 4 | Non-fatal warning conditions |
| **notice** | 5 | Normal but significant conditions |
| **info** | 6 | Informational messages only |
| **debug** | 7 | Information for troubleshooting purposes |

**Note** The debug notification level should be used for specific troubleshooting purposes only. System performance and HA behavior may be adversely affected by logging at the debug notification level.

Each facility can have up to eight notification levels. Each facility and notification level pair can have up to seven destinations. Table 4-2 describes the available facility names.

*Table 4-2 Logging Level Facilities*

| Facility Name | Description |
|---|---|
| **all** | All facilities. |
| **AUTH** | AAA authentication. |
| **CDP** | Cisco Discovery Protocol. |
| **CONF** | Configuration functions. |
| **FC** | Fibre Channel interfaces. |
| **FCIP** | FCIP functions. |
| **GE** | Gigabit Ethernet interfaces. |
| **HA** | High availability cluster functions. |
| **IF** | Interface manager. |
| **INVALID** | Generic functions. |
| **IP** | IP functions. |
| **ISCSI** | iSCSI functions. |
| **MON** | Hardware monitor. |
| **SLP** | Service Location Protocol service functions. |
| **SNMP** | Simple Network Management Protocol. |
| **SYSLOG** | Syslog functions. |
| **UI** | User interface functions. |
| **VTP** | VTP and VLAN functions. |

Use the **save system bootconfig** or **save all bootconfig** commands to save the updated logging table.

## Examples

The following example displays the logging table and then deletes the routing rule entry for messages at level *info* from facility *all*:

```
[SN5428-2A]# show logging
Logging is enabled

Index Level     Priority Facility   Route
1     info      6        all        console logfile
2     debug     7        HA         logfile rslog

Syslog host is enabled, ip-address is 10.1.1.144

[SN5428-2A]# delete logging level info from all
```

The following example displays an indexed list of the routing rules in the logging table and then deletes the third entry:

```
[SN5428-2A]# delete logging #?

Logging is enabled

Index Level     Priority Facility   Route
1     critical  2        all        console logfile
2     debug     7        SNMP       rslog
3     notice    5        HA         all
4     warning   4        CDP        rslog

Syslog host is enabled, ip-address is 10.1.1.144

[SN5428-2A]# delete logging #3
```

## Related Commands

| Command | Description |
|---|---|
| **clear logging table** | Clear the storage router logging table of all entries, or to reset the table to factory defaults. |
| **logging #?** | Insert a routing rule entry into the storage router logging table. |
| **logging level** | Add rule entries to route storage router event, debug and trace messages to various destinations based on facility and notification level. |
| **logging on** | Enable or temporarily disable logging of storage router event message. |
| **show logging** | Display the routing rules in the logging table and the contents of the storage router log file. |

# delete savedconfig

To remove the named file from the *savedconfig* directory, use the **delete savedconfig** command.

**delete savedconfig {***filename* **| all}**

## Syntax Description

| | |
|---|---|
| *filename* | The name of the configuration file to be deleted. This file must exist in the *savedconfig* directory. |
| **all** | Keyword, indicating that all configuration files in the *savedconfig* directory are to be deleted. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

Use the **show savedconfig** command to display the contents of the *savedconfig* directory.

## Examples

The following example removes the configuration file named *foo_config* from the storage router:

```
[SN5428-2A]# delete savedconfig foo_config
```

## Related Commands

| Command | Description |
|---|---|
| **copy** | Copy the named configuration or script file from a remote location to the storage router, or from the storage router to a remote location. |
| **restore all** | Restore the contents of the named configuration file into memory. |
| **save all** | Save all configuration information. |
| **save system** | Save selected system configuration information |
| **show savedconfig** | Display the contents of the *savedconfig* directory or the contents of the named configuration file. |
| **show script** | Display the contents of the script directory or the contents of the named command file. |

# delete script

To remove the named command file from the *script* directory, use the **delete script** command.

**delete script {***filename* **| all}**

## Syntax Description

| | |
|---|---|
| *filename* | The name of the command file to be deleted. This file must exist in the *script* directory. |
| **all** | Keyword, indicating that all command files in the *script* directory are to be deleted. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

Use the **show script** command to display the contents of the *script* directory or the specified command file.

## Examples

The following example removes the command file named *foo_script* from the storage router:

```
[SN5428-2A]# delete script foo_script
```

## Related Commands

| Command | Description |
|---|---|
| **copy** | Copy the named configuration or script file from a remote location to the storage router, or from the storage router to a remote location. |
| **read script** | Read and execute the CLI commands in the named script file. |
| **restore all** | Restore the contents of the named configuration file into memory. |
| **save all** | Save all configuration information. |
| **save system** | Save selected system configuration information. |
| **show bootconfig** | Display the bootable configuration, or create a command file based on the bootable configuration. |
| **show runningconfig** | Display the running configuration, or create a command file based on the running configuration. |
| **show savedconfig** | List the contents of the *savedconfig* directory or the contents of the named configuration file. |
| **show script** | Display the contents of the script directory or the contents of the named command file. |

# delete scsirouter

To delete the named elements from the SCSI routing instance, use the **delete scsirouter** command. This command does not change the persistent storage router configuration until the relevant configuration information has been saved using the appropriate **save** command with the **bootconfig** keyword.

**delete scsirouter {***name* **| all} [connection** *nn* **| serverif** *ge?* **[vlan** *vid***]]**

**delete scsirouter {***name* **| all} serverif** *ge?* **force**

**delete scsirouter {***name* **| all} target {***name* **| all} [lun** *nn***]**

**delete scsirouter {***name* **| all} target {***name* **| all} [lun** *nn***] force**

**delete scsirouter {***name* **| all} force**

**delete scsirouter** *name* **all**

## Syntax Description

| | |
|---|---|
| *name* | The name of the SCSI routing instance. |
| **all** | Delete all SCSI routing instances from the storage router, or delete all attributes for the named SCSI routing instance.<br>**Note** You are not prompted to confirm your actions. |
| **connection** *nn* | (Optional) Delete the specified connection from the named instance or all instances. Use the **show scsirouter** command with the **connection** keyword to display connection IDs. |
| **serverif** *ge?* | (Optional) Delete the server interface for the named SCSI routing instance or all instances. |
| **vlan** *vid* | (Optional) Delete the specified VLAN from the named SCSI routing instance or all instances. |
| **target** *name* | The name of the specific target to delete. |
| **target all** | Delete all targets from the named instance. |
| **lun** *nn* | (Optional) Delete the specified iSCSI LUN from the named target or all targets. |
| **force** | (Optional) Keyword that overrides normal protections, allowing the action to be performed. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

In a cluster environment, changes to the SCSI routing instance can only be made on the storage router that is the currently running that instance. The SCSI routing instance may be in a stopped state at the time it is deleted.

The **force** option allows the SCSI routing instance to be deleted from a storage router that is not currently running the instance. The **force** option should only be used when the storage router, or a specific SCSI routing instance, is in an abnormal state and cannot be recovered without rebooting.

When used with the target or LUN keywords, the **force** option allows the specified object to be deleted, even if in use by an iSCSI driver. Under normal circumstances, a target or LUN cannot be deleted if an iSCSI driver is logged in.

Use the **all** keyword to delete all attributes of a named SCSI routing instance. The named SCSI routing instance, however, is not deleted.

**Note** When making changes to SCSI routing instances (such as adding or deleting targets or changing access) be sure to make the complimentary changes to the iSCSI configuration of IP hosts using these services to access the storage resources. See the readme files for the appropriate iSCSI drivers for additional details. You can access the latest iSCSI drivers and readme and example configuration files from Cisco.com.

## Examples

The following example deletes all targets associated with the SCSI routing instance named *foo*:

```
[SN5428-2A]# delete scsirouter foo target all
```

The following example deletes the specified VLAN from the Gigabit Ethernet interface, *ge2*, used by the SCSI routing instance named *foo2*:

```
[SN5428-2A]# delete scsirouter foo2 serverif ge2 vlan 101
```

The following example deletes all attributes of the SCSI routing instance named *foo3*. The SCSI routing instance named *foo3* remains available for configuration on the storage router.

```
[SN5428-2A]# delete scsirouter foo3 all
```

The following example deletes the entire SCSI routing instance named *foo4*:

```
[SN5428-2A]# delete scsirouter foo4
```

**Note** All examples update the currently running configuration only. To make a deletion permanent, issue the appropriate **save all bootconfig** or **save scsirouter bootconfig** command.

## Related Commands

| Command | Description |
|---|---|
| **restore scsirouter** | Restore the named SCSI routing instance from the named configuration file. |
| **save scsirouter** | Save configuration information for the named SCSI routing instance. |
| **scsirouter** | Create a SCSI routing instance. |
| **scsirouter enable** | Start and stop the named SCSI routing instance. |
| **scsirouter serverif** | Assign a Gigabit Ethernet interface, IP address, and optionally a VLAN to the named SCSI routing instance. |
| **scsirouter target maxcmdqueuedepth** | Specify the maximum number of commands allowed at any given time from each iSCSI session to the specified target. |
| **setup scsi** | Run the wizard to configure a SCSI routing instance. |
| **show accesslist** | Display the contents of the named access list or all access lists. |
| **show scsirouter** | Display configuration and operational information for the named SCSI routing instance. |

# delete software version

To delete a version of software from the storage router, use the **delete software version** command.

**Note** The version of software currently running and the version that will be booted when the system is restarted may not be deleted.

**delete software version {***v.x.y* **| all}**

## Syntax Description

| | |
|---|---|
| *v.x.y* | The version of storage router software to be deleted. |
| **all** | Delete all non-bootable and non-current software versions. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

Use this command to remove old versions of software from the storage router.

## Examples

The following example removes version 2.0.1 from the storage router:

```
[SN5428-2A]# delete software version 2.0.1
```

## Related Commands

| Command | Description |
|---|---|
| **download software** | Download the list of available software versions or the specified version of software from the named location. |
| **software http url** | Specify the default location from which to download updated storage router software via HTTP. |
| **software proxy url** | Specify the default location from which to download updated storage router software via HTTP, using a proxy server. |
| **software tftp** | Specify the default location from which to download updated storage router software via TFTP. |
| **verify software version** | Check the specified software version for problems. |

# delete zone

To delete the specified Fibre Channel (FC) zone or the specified member of the zone from the zoning database, use the **delete zone** command.

**delete zone** *name* **[member {fcalias** *alias-name* **| fcid** *port-id* **| wwpn** *xxxxxxxxxxxxxxxx***}]**

## Syntax Description

| | |
|---|---|
| *name* | The name of the zone. |
| **member** | (Optional) Keyword, indicating the specified zone member will be deleted. |
| **fcalias** *alias-name* | Deletes the named alias member from the named zone. |
| **fcid** *port-id* | Deletes the specified Port ID member from the named zone. |
| **wwpn** *xxxxxxxxxxxxxxxx* | Deletes the specified WWPN member from the named zone.<br>**Note** WWPN address notation is represented by 16 hex digits. The digits may be separated by colons. When entering WWPN addresses, colons can be omitted or placed anywhere in the address notation as long as they do not leave one character without a partner character. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.5.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

A zone is a group of FC ports or devices, such as switches, storage or storage routers, grouped together to control the exchange of information.

Use this command to delete the specified zone from the zoning database. If the zone is a member of the active zone set, the zone will not be removed from the active zone set until the active zone set is deactivated. Use the **no zoneset** command with the **enable** keyword to disable the active zone set.

Use the **member** keyword to delete the specified alias, Port ID or WWPN member from the named zone.

**Caution** If the storage router is connected to the FC switched fabric, all zoning changes (including the deletion of a zone or zone member) are immediately propagated to other storage routers and switches in the fabric.

Refer to the appropriate *Cisco Storage Router Software Configuration Guide* for your storage router model for more information about FC fabric zoning.

## Examples

The following example deletes the zone named *testlab* from the zoning database:

```
[SN5428-2A]# delete zone testlab
```

The following example deletes the alias member *myfoo* from the zone *webservices*:

```
[SN5428-2A]# delete zone webservices member fcalias myfoo
```

## Related Commands

| Command | Description |
|---|---|
| **show zone** | Display configuration and operational information for Fibre Channel fabric zones from the local zoning database. |
| **show zoneset** | Display configuration and operational information for Fibre Channel fabric zone sets. |
| **zone** | Create a Fibre Channel fabric zone. |
| **zone member** | Add a device or an alias to a zone. |
| **zoneset** | Create a Fibre Channel fabric zone set. |
| **zoneset zone** | Add a member zone to a zone set. |

# delete zoneset

To delete the specified zone from the zone set or to delete the entire named zone set from the zoning database, use the **delete zoneset** command.

**delete zoneset** *name* **[zone** *name***]**

## Syntax Description

| | |
|---|---|
| *name* | The name of the zone set. |
| **zone** *name* | (Optional) Deletes the named zone from the specified zone set. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.5.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

A zone set is a group of zones. Zoning enables you to divide the ports and devices of the Fibre Channel fabric into zones for more efficient and secure communication among functionally grouped nodes. Only one zone set can be active at a time. The active zone set defines the zoning for the Fibre Channel fabric.

Use this command to delete an entire zone set from the zoning database or only the named zone from the zone set. If the zone set is active, the command does not take effect until the zone set is deactivated. Use the **no zoneset** command with the **enable** keyword to disable the active zone set.

**Caution** If the storage router is connected to the FC switched fabric, all zoning changes (including the deletion of a zone set) are immediately propagated to other storage routers and switches in the fabric.

Refer to the appropriate *Cisco Storage Router Software Configuration Guide* for your storage router model for more information about FC fabric zoning.

## Examples

The following example deletes the zone set named *testgroup*:

```
[SN5428-2A]# delete zoneset testgroup
```

The following example deletes the zone named *zoneA* from the zoneset named *testgroupA*:

```
[SN5428-2A]# delete zoneset testgroupA zone zoneA
```

## Related Commands

| Command | Description |
|---|---|
| **show zone** | Display configuration and operational information for Fibre Channel fabric zones from the local zoning database. |
| **show zoneset** | Display configuration and operational information for Fibre Channel fabric zone sets. |
| **zone** | Create a Fibre Channel fabric zone. |
| **zone member** | Add a device or an alias to a zone. |
| **zoneset** | Create a Fibre Channel fabric zone set. |
| **zoneset zone** | Add a member zone to a zone set. |

# download software

To fetch the specified object from the named location or the default download location, use the **download software list** command.

**download software {http | proxy} {list | url** *full_url* **| version** *v.x.y***}**

**download software tftp {hostname** *host* **filename** *file* **| list | version** *v.x.y***}**

## Syntax Description

| | |
|---|---|
| **http** | Download using the HTTP protocol. |
| **proxy** | Download using a proxy server. |
| **list** | (Optional) Download a list of available versions. |
| **url** | (Optional) Keyword indicating that the download is from the specified URL. |
| *full_url* | The fully qualified URL from which to download this version of storage router software. For example, http://anywebserver.com/3.3.1-K9.tar. |
| **version** *v.x.y* | (Optional) Download the specified version of storage router software from the default location. |
| **tftp** | Download using the TFTP protocol |
| **hostname** *host* | The name of the TFTP host. |
| **filename** *file* | The name of the file to be downloaded, such as *3.3.1-K9.tar*. This file contains the storage router software. |

## Defaults

None.

## Command Modes

Administrator.

## Command History

| Release | Modification |
|---|---|
| 2.2.1 | This command was introduced for the SN 5428. |
| 3.2.1 | This command was introduced for the SN 5428-2. |

## Usage Guidelines

The list of available software versions is stored in the file named *sw-sn5428-2-versions.txt*. This text file must contain one line for each version of software that is available from the download location. If you store and download software from a site other than the system default (http://www.cisco.com), create this file and update it whenever a new version of software is available.

Software is either downloaded from the default locations set for the specified protocol or from the location specified as part of the command. Always verify software after it has downloaded to assure no errors were encountered. Refer to the appropriate *Cisco Storage Router Software Configuration Guide* for your storage router model for details on verification and making updated software available to the storage router.

A maximum of two versions of software can be stored on the storage router.

**Note** While the size of the software file may vary, it will exceed 16 MB. Some older TFTP implementations have a 16 MB download limitation.

## Examples

The following example downloads storage router software version 3.3.1-K9 from the default location via standard Hypertext Transfer Protocol (HTTP):

```
[SN5428-2A]# download software http version 3.3.1-K9
```

The following example downloads a file named *sn5428-2v331.tar* from the TFTP host named *my_tftpHost*. The file must exist in the default TFTP directory.

```
[SN5428-2A]# download software tftp hostname my_tftpHost filename sn5428-2v331.tar
```

The following file downloads the list of available software from the default location using the proxy configuration:

```
[SN5428-2A]# download software proxy list
```

## Related Commands

| Command | Description |
|---|---|
| **delete software version** | Remove the specified version of software from the storage router. |
| **software http url** | Specify the default location from which to download updated storage router software via HTTP. |
| **software http username** | Configure the user name and optional password required to access the default download location. |
| **software proxy** | Configure HTTP proxy information. |
| **software proxy url** | Specify the default location from which to download updated storage router software via HTTP, using a proxy server. |
| **software proxy username** | Configure the user name and optional password required to access the proxy URL. |
| **software tftp** | Specify the default location from which to download updated storage router software via TFTP. |
| **verify software version** | Check the specified software version for problems. |