CHAPTER 3

# Commands

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# action

To execute predefined administrative functions on expansion modules (gateway cards), enter the **action** command in card configuration submode.

**action** {**delete-inactive-image** | **reset**}

## Syntax Description

| | |
|---|---|
| **delete-inactive-image** | Removes the inactive image from interface cards. Use the **delete-inactive-image** keyword before performing an installation to ensure enough disk space exists on all cards. |
| **reset** | Resets the cards that you specify in a Cisco SFS 7008 Server Switch. |

## Defaults

This command has no default settings.

## Command Modes

Card configuration (config-card) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7008, Cisco SFS 7008P
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted or card-specific read-write user.

This command pertains only to cards in expansion slots and can be entered only on server switches that have expansion slots.

Before you use the **action** command with the **delete-inactive-images** keyword, enter the **boot-config** command with the **primary-image-source** keyword to install and activate the proper image on the card. When you enter this command, the previously-active image becomes inactive. You can now enter the **action** command to clear the inactive image from your card.

## Examples

The following example deletes inactive images from the card that resides in slot 2:

```
SFS-3012R(config-card-2)# action delete-inactive-images
```

The following example resets a management I/O card on a Cisco SFS 7008:

```
SFS-7008(config-card-15)# action reset
```

## Related Commands

**boot-config**
**copy**
**install**
**show card**
**shutdown**

# addr-option

To configure the Ethernet Management port or the virtual in-band InfiniBand port to use a static IP address, obtain an IP address from a DHCP server, or automatically obtain an IP address from a hardware-designated controller, enter the **addr-option** command in Ethernet management configuration submode.

**addr-option** {**auto** | **dhcp** | **static**}

## Syntax Description

| | |
|---|---|
| **auto** | Applies an IP address from an outside controller to the Ethernet Management port or virtual in-band InfiniBand port. This keyword is relevant to the Cisco 4x InfiniBand IBM Blade Center only. |
| **dhcp** | Uses DHCP to configure the address for the Ethernet Management port or virtual in-band InfiniBand port. |
| **static** | Changes the address of the Ethernet management port or virtual in-band InfiniBand port from the DCHP address to the static address that you configure with the **ip address** command. |

## Defaults

Default settings for this command are platform dependent, as follows:

- **dhcp** on Cisco SFS 7000D
- **auto** on Cisco 4x InfiniBand Switch Module for IBM BladeCenter
- **static** on all other platforms

## Command Modes

Ethernet management interface configuration (config-if- mgmt-ethernet) submode, InfiniBand management interface configuration (config-if-mgmt-ib) submode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

Ethernet read-write user.

If you use the **static** keyword:

- Configure the IP address of the Ethernet Management port with the **ip address** command as described in the "ip address (Ethernet management interface configuration submode)" section on page 3-119.
- Configure the IP address of the InfiniBand Management port with the **ip address** command as described in the "ip address (InfiniBand management interface configuration submode)" section on page 3-121.

## Examples

The following example configures the Ethernet Management port to obtain an IP address from a DHCP server:

```
SFS-270(config-if-mgmt-ethernet)# addr-option dhcp
```

## Related Commands

**ip address (Ethernet management interface configuration submode)**
**ip address (InfiniBand management interface configuration submode)**

# arp ethernet

To statically map an IP address to the physical machine address of an Ethernet host on the local network, enter the **arp ethernet** command in global configuration mode. To clear a static IP address, use the **no** form of this command.

**Note** Layer 3 only; available to 4-port Ethernet gateways but not 6-port. This restriction applies only in Ethernet interface configuration submode.

**arp ethernet** *ip-address mac-address slot#*/*port#*

**no arp ethernet** *ip-address mac-address*

## Syntax Description

| | |
|---|---|
| *ip-address* | IP address of the host. |
| *mac-address* | MAC address of the host. |
| *slot#* | Slot on the server switch that holds the Ethernet gateway that connects to the host. |
| *port#* | Ethernet gateway port that connects to the host. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

The server switch supports dynamic ARP so that any IP host that connects to an Ethernet gateway port can see or detect all the other connected IP and IPoIB hosts.

An ARP table contains the available ARP records in the gateway. An ARP record can be dynamically learned or statically created. In most cases, you can rely upon dynamic ARP addressing. Dynamic ARP records can be deleted from the table after a period of time, or updated, if a host address-change occurs.

## Examples

```
SFS-3012R(config)# arp ethernet 10.2.0.50 00:30:48:23:A9:0A 4/1
```

## Related Commands

**show arp ethernet**

# authentication

Use the **authentication** command in global configuration mode to configure one of the following user authentication methods:

- local
- local and then RADIUS
- RADIUS and then local
- local and then TACACS+
- TACACS+ and then local
- RADIUS
- TACACS+

**authentication login** [**default** {**local** [**radius** | **tacacs**] | **tacacs** [**local]** | **radius [local]**}]

### Syntax Description

| | |
|---|---|
| **login** | Enables local login authentication.<br>**Note** When you enter **authentication login**, the command behaves as though you had entered **authentication login default local**. |
| **default** | (Optional) Configures where and in what order your server switch authenticates logins. |
| **local** | (Optional) Authenticates the login with the local CLI user database. |
| **radius** | (Optional) Authenticates the login with a RADIUS server. |
| **tacacs** | (Optional) Authenticates the login with a TACACS+ server. |

### Defaults

Authentication defaults to **local**.

### Command Modes

Global configuration mode.

### Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Use the **authentication** command to indicate the user login authentication sources and the sequence in which to check them.

Table 3-1 explains the valid authentication methods.

*Table 3-1 Authentication Methods for Logging In*

| Authentication | How it Works |
|---|---|
| local | Authenticates user logins against the chassis database. |
| local and then RADIUS | Authenticates user logins against the chassis database. Upon failure, authenticates with up to three configured RADIUS servers. Upon failure to authenticate the user or failure to reach any configured RADIUS server, the user is denied access. |
| RADIUS and then local | Authenticates user logins with up to three configured RADIUS servers. Upon failure to authenticate the user or failure to access any configured RADIUS server, authenticates against the chassis database. If authentication against the chassis database fails, then the user is denied access. |
| local and then TACACS+ | Authenticates user logins against the chassis database. Upon failure, authenticates with up to three configured TACACS+ servers. Upon failure to authenticate the user or failure to access any configured TACACS+ server, the user is denied access. |
| TACACS+ and then local | Authenticates user logins with up to three configured TACACS+ servers. Upon failure to authenticate the user or failure to access any configured TACACS+ server, authenticates against the chassis database. If authentication against the chassis database fails, then the user is denied access. |
| RADIUS | Authenticates user logins with up to three configured RADIUS servers. Upon failure to authenticate the user, the user is denied access. The authentication process checks against the chassis database only if it cannot access any RADIUS server. |
| TACACS+ | Authenticates user logins with up to three configured TACACS+ servers. Upon failure to authenticate the user, the user is denied access. The authentication process checks against the chassis database only if it cannot access any TACACS+ server. |

For more information, see the "Authentication" section on page 1-3.

## Examples

The following example configures the server switch to authenticate first with a RADIUS server and then with the local database if RADIUS server authentication fails:

```
SFS-7000P(config)# authentication login default radius local
```

The following example configures the server switch to authenticate first with a TACACS+ server and then with the local database if TACACS+ server authentication fails:

```
SFS-7000P(config)# authentication login default tacacs local
```

The following example configures the server switch to authenticate first with the local database and then with a RADIUS server if local authentication fails:

```
SFS-7000P(config)# authentication login default local radius
```

The following example configures the server switch to authenticate first with the local database and then with a TACACS+ server if local authentication fails:

```
SFS-7000P(config)# authentication login default local tacacs
```

The following example configures the server switch to authenticate to a TACACS+ server and then to the local database only if all configured TACACS+ servers are unreachable:

```
SFS-7000P(config)# authentication login default tacacs
```

## Related Commands

**tacacs-server**
**radius-server**
**show authentication**

# auto-negotiate (Ethernet interface configuration submode)

To dynamically determine the connection speed of direct-attached Ethernet devices, use the **auto-negotiate** command in Ethernet interface configuration submode. auto-negotiate

**no auto-negotiate**

## Syntax Description

This command has no arguments or keywords

## Defaults

Ethernet ports auto-negotiate connection speeds by default.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

Before you enable auto-negotiation, follow these steps to verify that the Ethernet host supports auto-negotiation:

**Step 1** Enter the **show interface ethernet** command in user EXEC mode or privileged EXEC mode.

**Step 2** Verify that the **auto-negotiate-supported** field displays **yes**. If the field displays **no**, you must manually configure the connection speed of the port.

## Examples

The following example disables auto-negotiation on ports 1 through 4 on Ethernet card 4. The result of this command appears in the **auto-negotiate-supported** field of the **show interface ethernet** command:

```
SFS-3012R(config-if-ether-4/1-4/4)# no auto-negotiate
```

## Related Commands

**link-trap**
**name**
**show interface ethernet**
**shutdown**
**speed (Ethernet interface configuration submode)**

# auto-negotiate (Fibre Channel interface configuration submode)

To dynamically determine the connection speed of direct-attached Fibre Channel devices, use the **auto-negotiate** command in Fibre Channel interface configuration submode. To disable auto-negotiation, use the **no** form of this command.

**auto-negotiate**

**no auto-negotiate**

## Syntax Description

This command has no arguments or keywords

## Defaults

Fibre Channel ports auto-negotiate connection speeds by default.

## Command Modes

Fibre Channel interface configuration (config-if-fc) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-write user.

**Fibre Channel:**

Before you configure your Fibre Channel port to auto-negotiate speed, follow these steps to verify that the attached Fibre Channel device supports auto-negotiation:

**Step 1** Enter the **show interface fc** command in user EXEC mode or privileged EXEC mode.

**Step 2** Verify that the **auto-negotiate-supported** field of the command output displays **yes**. If the field displays **no**, you must manually configure the connection speed of the port.

**Note** If you disable auto-negotiation in the CLI but leave it active on the attached Fibre Channel devices, the port manager for the Fibre Channel interface on your device does not negotiate speed and mode with the FC devices. The FC devices may choose a different duplex setting than the port manager and produce unexpected results.

## Examples

The following example disables auto-negotiation on ports 1 through 2 on Fibre Channel card 5. The result of this command appears in the **auto-negotiate** field of the **show interface fc** command:

```
SFS-3012R(config-if-fc-5/1-5/2)# no auto-negotiate
```

## Related Commands

**link-trap**
**name**
**show fc srp initiator**
**show interface fc**
**shutdown**
**speed (Fibre Channel interface configuration submode)**

# auto-negotiate (InfiniBand interface configuration submode)

To dynamically determine the connection speed of direct-attached InfiniBand devices, use the **auto-negotiate** command in InfiniBand interface configuration submode. To disable auto-negotiation, use the **no** form of this command.

**auto-negotiate**

**no auto-negotiate**

## Syntax Description

This command has no arguments or keywords

## Defaults

For InfiniBand ports, auto-negotiation is disabled by default on Cisco SFS 7008P, Cisco SFS 7000D, Cisco SFS 7008P, and Cisco 4x InfiniBand Switch Module for IBM BladeCenter. For InfiniBand ports, auto-negotiation is enabled by default onCisco SFS 3001, Cisco SFS 3012, and Cisco SFS 3012R.

## Command Modes

InfiniBand interface configuration (config-if-ib) submode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

InfiniBand read-write user (for InfiniBand ports).

Before you enable auto-negotiation, follow these steps to verify that the InfiniBand host supports auto-negotiation:

**Step 1** Enter the **show interface ib** command in user EXEC mode or privileged EXEC mode.

**Step 2** Verify that the **auto-negotiate-supported** field displays **yes**. If the field displays **no**, you must manually configure the connection speed of the port.

## Examples

The following example enables auto-negotiation on port 1 on a Cisco SFS 7000. The result of this command appears in the **auto-negotiate-supported** field of the **show interface ib** command:

```
SFS-7000(config-if-ib-1/1)# auto-negotiate
```

## Related Commands

**link-trap**
**name**
**show interface ib**
**shutdown**
**speed (InfiniBand interface configuration submode)**

# boot-config

To specify the system image to run when your server switch boots, enter the **boot-config** command in global configuration mode.

**boot-config primary-image-source** *dir*

## Syntax Description

| | |
|---|---|
| **primary-image-source** | Specifies that you want to configure the boot image. |
| *dir* | Directory that contains the boot image. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Specify an image *directory* as a boot image. Do not specify image files that end in ".img" since these files are compressed archives that must be installed first.

**Note** Use the **dir** command with the **image** keyword to view a list of images on your device.

## Examples

The following example configures the server switch controller to use the TopspinOS-2.9.0/build134 directory when the server switch boots. Without this directory, the system cannot boot successfully.

```
SFS-7000P(config)# boot-config primary-image-source TopspinOS-2.9.0/build134
```

## Related Commands

**dir**
**install**
**reload**
**show boot-config**
**show card**
**show card-inventory**

# bridge-group (Ethernet interface configuration submode)

To assign a bridge group to an Ethernet port and optionally configure the port with an IEEE 802.1Q VLAN tag, enter the **bridge-group** command in Ethernet interface configuration mode. To remove a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **[vlan-tag** *integer***]**

**no bridge-group** *bridgegroupID* **[vlan-tag** *integer***]**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group to create or reconfigure. |
| **vlan-tag** | (Optional) Specifies a virtual LAN ID tag. |
| *integer* | (Optional) LAN ID tag. |

## Defaults

This command has no default settings.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

Create bridge-groups to associate specific Ethernet gateway ports with Ethernet switch ports. Bridge Groups are used to associate the InfiniBand fabric with an Ethernet subnet.

## Examples

The following example assigns bridge group 2 to the Ethernet interface slot 6, port 2:

```
SFS-3012R(config-if-ether-6/2)# bridge-group 2
```

## Related Commands

**interface**
**show bridge-group**

# bridge-group (gateway interface configuration submode)

To assign a bridge group to a gateway interface and optionally configure 16-bit partition key, enter the **bridge-group** command in gateway interface configuration mode. To remove a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* [**pkey** *partition-key*]

**no bridge-group** *bridgegroupID* [**pkey**]

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group to create or reconfigure. |
| **pkey** | (Optional) Specifies a partition key to assign to the bridge group. |
| *partition-key* | (Optional) Partition key to assign to the bridge group. |

## Defaults

This command has no default settings.

## Command Modes

Gateway interface configuration (config-if-gw) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example assigns bridge group 2 to the internal gateway interface slot 6, ports 1 and 2:

```
SFS-3012R(config-if-gw-6)# bridge-group 2
```

## Related Commands

**interface**
**show bridge-group**

# bridge-group (global configuration mode)

To create a bridge group, enter the **bridge-group** command in global configuration mode. To remove a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID*

**no bridge-group** *bridgegroupID*

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to create or remove. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

Create a bridge group to bridge one Ethernet VLAN to one Infiniband IPoIB partition. A bridge group created with this command must have Ethernet and Infiniband ports assigned in order to start forwarding.

## Examples

The following example creates a bridge group with bridge group ID 1:

```
SFS-3012(config)# bridge-group 1
```

## Related Commands

**show bridge-group**
**interface**

# bridge-group (trunk interface configuration submode)

To assign a trunk group to a bridge group and optionally configure the trunk group with an IEEE 802.1Q VLAN tag, enter the **bridge-group** command in trunk interface configuration mode. To remove a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **[vlan-tag** *integer***]**

**no bridge-group** *bridgegroupID* **[vlan-tag** *integer***]**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group to create or reconfigure. |
| **vlan-tag** | (Optional) Specifies a virtual LAN ID tag. |
| *integer* | (Optional) LAN ID tag. |

## Defaults

This command has no default settings.

## Command Modes

Trunk interface configuration (config-if-trunk) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example assigns trunk group 1 to bridge group 2:

```
SFS-3012R(config)# interface trunk 1
SFS-3012R(config-if-trunk)# bridge-group 2
```

## Related Commands

**interface**
**show bridge-group**
**show trunk**

# bridge-group broadcast-forwarding

To enable broadcast forwarding for a selected bridge group, enter the **bridge-group broadcast-forwarding** command in global configuration mode. To disable broadcast forwarding for a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **broadcast-forwarding**

**no bridge-group** *bridgegroupID* **broadcast-forwarding**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | ID of bridge group to be enabled or disabled. |

## Defaults

On a new bridge group the broadcast forwarding is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

## Examples

The following example enables broadcast forwarding for bridge group 1:

```
SFS-3012(config)# bridge-group 1 broadcast-forwarding
```

## Related Commands

**show bridge-group**

# bridge-group directed-broadcast

To enable directed broadcast for a bridge group, enter the **bridge-group directed-broadcast** command in global configuration mode. Once enabled, directed broadcasting allows directed broadcast traffic from the remote subnet Ethernet host to be broadcast to the IB network bridged by this bridge group.

To disable directed broadcast for a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **directed-broadcast**

**no bridge-group** *bridgegroupID* **directed-broadcast**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | ID of bridge group to be enabled or disabled. |

## Defaults

Directed broadcast is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

## Examples

The following example enables directed broadcast for bridge group 1:

```
SFS-3012(config)# bridge-group 1 directed-broadcast
```

## Related Commands

**show bridge-group**

# bridge-group eth-next-hop

Creates or removes an IPv4 Ethernet route for a bridge group. The Ethernet route is used by hosts on the Ethernet side of the bridge. The next hop must be on the InfiniBand side of the bridge.

To configure a route for a selected bridge group, enter the **bridge-group eth-next-hop** command in global configuration mode. To remove a route from a bridge group, use the **no** form of this command. Up to 16 IPv4 routes per bridge group are supported.

**bridge-group** *bridgegroupID* **eth-next-hop** *next-hop* **[next-hop-mask** *mask***] [dest** *remote-subnet remote-subnet-mask***]**

**no bridge-group** *bridgegroupID* **eth-next-hop** *next-hop* **[next-hop-mask** *mask***] [dest** *remote-subnet remote-subnet-mask***]**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to create or remove route. |
| *next-hop* | IP address of the next hop for this route. |
| **next-hop-mask** | Specifies the subnet mask to be applied to the next hop to determine which IP subnet the rout belongs to. |
| *mask* | Subnet mask to be applied to the next-hop in order to determine which IP subnet the route belongs to. The default value is 0, which makes the route belong to all bridge group IP subnets. |
| **dest** | Specifies the subnet targeted by this route. |
| *remote-subnet* | IP address of the remote IP subnet targeted by this route. If missing or 0, specifies the default route. |
| *remote-subnet-mask* | Remote IP subnet mask. If missing or 0, specifies the default route. |

## Defaults

Default values and behaviors appear in the Syntax Description.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

Use of this command is uncommon because L3 switches and routers are usually located on the Ethernet side of the bridge.

The simplest form of the command, where the **next-hop-mask** and **dest** keywords are missing, specifies one default route for all IP subnets. This form is useful when one IP subnet is bridged by this bridge group.

To create a more specific route, use the **dest** keyword to specify a remote subnet prefix and prefix length.

If a bridge group bridges more than one IP subnet, each subnet will have a separate set of routes. In this case, use **next-hop-mask** to specify the IP subnet that this route belongs to. The **dest** keyword can be used in the same command to identify a more specific route.

The bridge group IP subnets must be configured before the routes belonging to them are created.

## Examples

The following example creates a default route for bridge group 1 with next hop 10.0.0.1:

```
SFS-3012(config)# bridge-group 1 eth-next-hop 10.0.0.1
```

The following example creates a route with next hop 10.0.0.2 for 30.0.0.0/8 remote subnet:

```
SFS-3012(config)# bridge-group 1 eth-next-hop 10.0.0.2 dest 30.0.0.0 255.0.0.0
```

The following example creates a default route for both IP subnets bridged by bridge group 1. The bridge group IP subnets are 10.0.0.0/8 and 20.0.0.0/8:

```
SFS-3012(config)# bridge-group 1 eth-next-hop 10.0.0.1 next-hop-mask 255.0.0.0
SFS-3012(config)# bridge-group 1 eth-next-hop 20.0.0.1 next-hop-mask 255.0.0.0
```

The following example creates a more specific route for both IP subnets bridged by bridge group 1. The bridge group IP subnets are 10.0.0.0/8 and 20.0.0.0/8. The remote subnet 30.0.0.0/8 is reachable from both IP subnets but through different next hops 10.0.0.2 and 20.0.0.2.

```
SFS-3012(config)# bridge-group 1 eth-next-hop 10.0.0.2 next-hop-mask 255.0.0.0 dest
30.0.0.0 255.0.0.0
SFS-3012(config)# bridge-group 1 eth-next-hop 20.0.0.2 next-hop-mask 255.0.0.0 dest
30.0.0.0 255.0.0.0
```

## Related Commands

**bridge-group subnet-prefix**
**show bridge-subnets**
**show bridge-forwarding**

# bridge-group gratuitous-igmp

To enable gratuitous IGMP for a selected bridge group, enter the **bridge-group gratuitous-igmp** command in global configuration mode. To disable gratuitous IGMP for a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **gratuitous-igmp**

**no bridge-group** *bridgegroupID* **gratuitous-igmp**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to enable or disable gratuitous IGMP. |

## Defaults

On a new bridge group the gratuitous IGMP is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

Use this command when IGMP snooping is enabled on the Ethernet switches connected to the Ethernet gateway.

## Examples

The following example enables gratuitous IGMP for bridge group 1:

```
SFS-3012(config)# bridge-group 1 gratuitous-igmp
```

## Related Commands

**show bridge-group**
**bridge-group igmp**

# bridge-group ib-next-hop

Creates or removes an IPv4 InfiniBand route for a bridge group. The InfiniBand route is used by hosts on the InfiniBand side of the bridge. The next hop must be on the Ethernet side of the bridge.

To configure a route for a selected bridge group, enter the **bridge-group ib-next-hop** command in global configuration mode. To remove a route from a bridge group, use the **no** form of this command. Up to 16 IPv4 routes per bridge group are supported.

**bridge-group** *bridgegroupID* **ib-next-hop** *next-hop* **[next-hop-mask** *mask***] [dest** *remote-subnet remote-subnet-mask***]**

**no bridge-group** *bridgegroupID* **ib-next-hop** *next-hop* **[next-hop-mask** *mask***] [dest** *remote-subnet remote-subnet-mask***]**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to create or remove route. |
| *next-hop* | IP address of the next hop for this route. |
| **next-hop-mask** | (Optional) Specifies the subnet mask to be applied to the next hop to determine which IP subnet the route belongs to. |
| *mask* | (Optional) Subnet mask to be applied to the next-hop in order to determine which IP subnet the route belongs to. The default value is 0, which makes the route belong to all bridge group IP subnets. |
| **dest** | (Optional) Specifies the subnet targeted by this route. |
| *remote-subnet* | (Optional) IP address of the remote IP subnet targeted by this route. If missing or 0, specifies the default route. |
| *remote-subnet-mask* | (Optional) Remote IP subnet mask. If missing or 0, specifies the default route. |

## Defaults

Default values and behaviors appear in the Syntax Description.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

The simplest form of the command, where **next-hop-mask** and **dest** keywords are missing specifies one default route for all IP subnets. This form is useful when one IP subnet is bridged by this bridge group.

To create a more specific route, use the **dest** keyword to specify a remote subnet prefix and prefix length.

If a bridge group bridges more than one IP subnet, each subnet will have a separate set of routes. In this case, use the **next-hop-mask** keyword to specify the IP subnet this route belongs to. The **dest** keyword can be used in the same command to specify a more specific route.

The bridge group IP subnets must be configured before the routes belonging to them are created.

## Examples

The following example creates a default route for bridge group 1 with next hop 10.0.0.1:

```
SFS-3012(config)# bridge-group 1 ib-next-hop 10.0.0.1
```

The following example creates a route with next hop 10.0.0.2 for 30.0.0.0/8 remote subnet:

```
SFS-3012(config)# bridge-group 1 ib-next-hop 10.0.0.2 dest 30.0.0.0 255.0.0.0
```

The following example creates a default route for both IP subnets bridged by bridge group 1. The bridge group IP subnets are 10.0.0.0/8 and 20.0.0.0/8:

```
SFS-3012(config)# bridge-group 1 ib-next-hop 10.0.0.1 next-hop-mask 255.0.0.0
SFS-3012(config)# bridge-group 1 ib-next-hop 20.0.0.1 next-hop-mask 255.0.0.0
```

The following example creates a more specific route for both IP subnets bridged by bridge group 1. The bridge group IP subnets are 10.0.0.0/8 and 20.0.0.0/8. The remote subnet 30.0.0.0/8 is reachable from both IP subnets but through different next hops 10.0.0.2 and 20.0.0.2.

```
SFS-3012(config)# bridge-group 1 ib-next-hop 10.0.0.2 next-hop-mask 255.0.0.0 dest
30.0.0.0 255.0.0.0
SFS-3012(config)# bridge-group 1 ib-next-hop 20.0.0.2 next-hop-mask 255.0.0.0 dest
30.0.0.0 255.0.0.0
```

## Related Commands

**bridge-group subnet-prefix**
**show bridge-subnets**
**show bridge-forwarding**

# bridge-group igmp

To set the IGMP version for the selected bridge group, enter the **bridge-group igmp** command in global configuration mode.

**bridge-group** *bridgegroupID* **igmp {v1 | v2 | v3}**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to set IGMP version. |
| **v1** | Specifies IGMP version 1. |
| **v2** | Specifies IGMP version 2. |
| **v3** | Specifies IGMP version 3. |

## Defaults

On a new bridge group v2 is set by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

The IGMP version must be set to correspond to the version used by the hosts and routers bridged by this bridge group. It is used by gratuitous IGMP to generate reports and might have additional future uses.

## Examples

The following example sets IGMP version for bridge group 1 to v3:

```
SFS-3012(config)# bridge-group 1 igmp v3
```

## Related Commands

**show bridge-group**
**bridge-group gratuitous-igmp**

# bridge-group ip-addr

To set the IP address for a selected bridge group, enter the **bridge-group ip-addr** command in global configuration mode. To unassign the IP address use 0.0.0.0.

**bridge-group** *bridgegroupID* **ip-addr** *IPaddress*

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to assign IP address. |
| *IPaddress* | Bridge group IP address in dotted decimal notation. |

## Defaults

On a new bridge group the IP address is not assigned. It shows up as 0.0.0.0.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

A unique IP address must be assigned to each bridge group member of a redundancy group with load-balancing enabled. IP address must be from the IP subnet bridged by the bridge group.

## Examples

The following example sets IP address of bridge group 1 to 192.168.0.1:

```
SFS-3012(config)# bridge-group 1 ip-addr 192.168.0.1
```

## Related Commands

show bridge-group

# bridge-group loop-protection

To enable loop protection for a selected bridge group, enter the **bridge-group loop-protection** command in global configuration mode. To disable loop protection for a bridge group, use the **no** form of this command. Currently only one method of loop protection is supported.

**bridge-group** *bridgegroupID* **loop-protection one**

**no bridge-group** *bridgegroupID* **loop-protection**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to enable or disable loop protection. |
| **one** | Specifies the only method of loop protection currently supported. |

## Defaults

On a new bridge group the loop protection is disabled

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

## Examples

The following example enables loop protection for bridge group 1:

```
SFS-3012(config)# bridge-group 1 loop-protection one
```

## Related Commands

**show bridge-group**

# bridge-group multicast

To enable multicast forwarding for a selected bridge group, enter the **bridge-group multicast** command in global configuration mode. To disable multicast forwarding for a bridge group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **multicast**

**no bridge-group** *bridgegroupID* **multicast**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to enable or disable multicast forwarding. |

## Defaults

On a new bridge group the multicast forwarding is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

## Examples

The following example enables multicast forwarding for bridge group 1:

```
SFS-3012(config)# bridge-group 1 multicast
```

## Related Commands

**show bridge-group**

# bridge-group name

To set the name for a selected bridge group, enter the **bridge-group name** command in global configuration mode.

**bridge-group** *bridgegroupID* **name** *bridge-name*

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to assign the name. |
| *bridge-name* | Bridge group name. |

## Defaults

On a new bridge group the name is not assigned.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

## Examples

The following example sets the name of bridge group 1 to Bridge-1:

```
SFS-3012(config)# bridge-group 1 name Bridge-1
```

## Related Commands

**show bridge-group**

# bridge-group redundancy-group

To assign a selected bridge group to a redundancy group, enter the **bridge-group redundancy-group** command in global configuration mode. To remove a bridge group from a redundancy group, use the **no** form of this command.

**bridge-group** *bridgegroupID* **redundancy-group** *redundancygroupID*

**no bridge-group** *bridgegroupID* **redundancy-group**

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to be assigned to a redundancy group. |
| *redundancygroupID* | Redundancy group ID to which the bridge group is to be assigned. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

The bridge group must have Ethernet and InfiniBand ports configured before this command can be used.

## Examples

The following example assigns bridge group 1 to redundancy group 1:

```
SFS-3012(config)# bridge-group 1 redundancy-group 1
```

## Related Commands

**show bridge-group**
**show redundancy-group**
**interface**

# bridge-group subnet-prefix

To configure an IPv4 subnet for bridging by a bridge group, enter the **bridge-group subnet-prefix** command in global configuration mode. To remove an IPv4 subnet from a bridge group, use the **no** form of this command. Up to 8 IPv4 subnets per bridge group are supported.

**bridge-group** *bridgegroupID* **subnet-prefix** *subnet prefix-length*

**no bridge-group** *bridgegroupID* **subnet-prefix** *subnet prefix-length*

## Syntax Description

| | |
|---|---|
| *bridgegroupID* | Bridge group ID to create or remove. |
| *subnet* | IPv4 subnet prefix. |
| *prefix-length* | IPv4 subnet prefix length. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

If the subnet prefix is not configured, the bridge group forwards only in the local IP subnet. The hosts from the corresponding IP subnet cannot reach remote IP subnets.

## Examples

The following example configures bridge group 1 to bridge 10.0.0.0 subnet:

```
SFS-3012(config)# bridge-group 1 subnet-prefix 10.0.0.0 8
```

## Related Commands

**show bridge-subnets**

# broadcast

To send text messages to all other CLI users, enter the **broadcast** command in user EXEC mode or privileged EXEC mode.

**broadcast** *message*

## Syntax Description

| | |
|---|---|
| *message* | Message to broadcast. This message may consist of one or more words and may include any alphanumeric character or symbol (except for quotation marks). |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Multi-word messages must begin and end with quotation marks (“,”). Single-word messages do not require quotation marks.

You can broadcast a message to warn other CLI users about events that may impact their sessions, such as a network outage or major configuration change. A broadcast message appears on every active CLI session on the server switch, including the user who sends the message.

## Examples

The following example prints “FC card 5 going down in 10 minutes” to the terminal screens of all users on the server switch:

```
SFS-3001# broadcast "FC card 5 going down in 10 minutes."
```

## Related Commands

**reload**
**who**
**write**

# card

To enter card configuration submode, enter the **card** command in global configuration mode.

**card** {*slot-list* | **all** | *digit* | *digit,digit* | *digit-digit*}

## Syntax Description

| | |
|---|---|
| *slot-list* | Card, list of cards, or range of cards to configure. |
| **all** | Configures all cards in the chassis. |
| *digit* \| *digit,digit* | Specifies the slot numbers for cards you want to configure in the chassis. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Card-specific read-write user

Enter card configuration submode to enable, disable, configure, and reinitialize cards in your server switch.

## Examples

The following example enters card configuration submode for all cards on the server switch. Any commands that execute in this mode apply to all of the cards in the chassis.

```
SFS-7008P(config)# card all
SFS-7008P(config-card-1,6,11,15-16)#
```

## Related Commands

**delete**
**install**
**show card**
**show card-inventory**
**shutdown**

# cdp holdtime

To set the Cisco Discovery Protocol (CDP) transmission holdtime, enter the **cdp holdtime** command in global configuration mode.

**cdp holdtime** *seconds*

## Syntax Description

| | |
|---|---|
| *seconds* | Sets the number of seconds for transmission holdtime. |

## Defaults

The default value of **holdtime** is 180 seconds.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

CDP packets are sent with a time to live, or hold time, value. The receiving device will discard the CDP information in the CDP packet after the hold time has elapsed. You can set the hold time lower than the default setting of 180 seconds if you want the receiving devices to update their CDP information more rapidly. The CDP hold time must be set to a higher number of seconds than the time between CDP transmissions, which is set using the **cdp timer** command.

## Examples

The following example sets the CDP holdtime:

```
SFS-7000P(config)# cdp holdtime 120
```

## Related Commands

**cdp run**
**cdp timer**
**show cdp**
**show cdp entry**
**show cdp neighbors**
**show clock**

# cdp run

To enable Cisco Discovery Protocol (CDP), use the **cdp run** command in global configuration mode. To disable CDP, use the **no** form of this command. The **cdp run** command enables the chassis to send advertisements to other network devices. The CDP protocol is always on, so it listens to advertisements from other devices even after completing the **no** version of the command.

**cdp run**

**no cdp run**

## Syntax Description

This command has no arguments or keywords.

## Defaults

Disabled

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

CDP is enabled by default, which means the Cisco IOS software will receive CDP information. CDP also is enabled on supported interfaces by default. To disable CDP on an interface, use the **no cdp run** interface configuration command.

Each device configured for CDP sends periodic messages, known as advertisements, to a multicast address. Each device advertises at least one address at which it can receive SNMP messages. The advertisements also contain time-to-live, or holdtime information, which indicates the length of time a receiving device should hold CDP information before discarding it. Each device also listens to the periodic CDP messages sent by others to learn about neighboring devices and determine when their interfaces to the media go up or down.

CDP Version 2 is the most recent release of the protocol. With CDP Version-2, detailed information is provided on the VLAN Trunking Protocol (VTP) management domain and duplex modes of neighbor devices, CDP-related counters, and VLAN IDs of connecting ports. This information can help the Ethernet gateway configuration. CDP is run on server switches over management-Ethernet interfaces. CDP Version 2 has three additional type-length values (TLVs): VTP Management Domain Name, Native VLAN, and full/half-Duplex.

**Note** CDP runs by default when a chassis boots, but CDP is only learning in this mode. If any neighbors are advertising, CDP will identify them.

## Examples

The following example starts CDP advertising on your chassis:

```
SFS-7000P(config)# cdp run
```

The following example starts CDP advertising on your chassis and specifies the CDP timer interval:

```
SFS-7000P# configure
SFS-7000P(config)# cdp run
SFS-7000P(config)# cdp timer 10
```

## Related Commands

**cdp holdtime**
**cdp timer**
**show cdp**
**show cdp entry**
**show cdp neighbors**

# cdp timer

To specify how often Cisco Discovery Protocol (CDP) updates are sent, use the **cdp timer** command in global configuration mode. To revert to the default setting, use the **no** form of this command.

**cdp timer** *seconds*

**no cdp timer**

## Syntax Description

| | |
|---|---|
| *seconds* | Sets the number of seconds for the transmission timer. |

## Defaults

60 seconds

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

Unrestricted and general read-write user.

The trade-off with sending more frequent CDP updates to provide up-to-date information is that bandwidth is used more often.

## Examples

The following example sets the CDP timer:

```
SFS-7000P(config)# cdp timer 120
```

## Related Commands

**cdp holdtime**
**cdp run**
**show cdp**
**show cdp entry**
**show cdp neighbors**

# clear counters

To clear the counters associated with a given InfiniBand port or range of ports, use the **clear counters** command in privileged EXEC mode.

**clear counters ib** [*port-selection* | **all**]

## Syntax Description

| | |
|---|---|
| **ib** | Specifies IB ports to have counters cleared. |
| *port-selection* | Identifies the IB port or range of IB ports to have counters cleared. |
| **all** | Clears counters for all IB ports on the chassis. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

This command resets all counters displayed by the **show interface ib** *port-selection* **statistics** command. The counters are listed and described in Table 3-2.

*Table 3-2 InfiniBand Counters Reset by clear counters Command*

| Counter | Description |
|---|---|
| in-octets | Cumulative number of octets that arrived at the port, including framing characters. |
| in-ucast-pkts | Cumulative number of incoming packets destined for a single port. |
| in-multicast-pkts | Cumulative number of incoming packets destined for the ports of a multicast group. |
| in-broadcast-pkts | Cumulative number of incoming packets destined for all ports on the fabric. |
| in-discards | Cumulative number of inbound packets that the port discarded for a reason other than a packet error (for example, lack of buffer space). |
| in-errors | Number of inbound packets with errors that the port discarded. |

*Table 3-2 InfiniBand Counters Reset by clear counters Command (continued)*

| Counter | Description |
|---|---|
| in-unknown-protos | For packet-oriented interfaces, the number of packets that were received through the interface that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received through the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is always 0. |
| out-octets | Total number of octets transmitted out of the interface, including framing characters. |
| out-ucast-pkts | Total number of packets that higher-level protocols requested be transmitted and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-multicast-pkts | Total number of packets that higher-level protocols requested be transmitted and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. |
| out-broadcast-pkts | Total number of packets that higher-level protocols requested to be transmitted and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-discards | Number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free-up buffer space. |
| out-errors | For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors. |

## Examples

The following example clears the counters on ports 6, 7 and 8 of the InfiniBand module in slot 3:

```
SFS-7008P# clear counters ib 3/6-3/8
```

## Related Commands

**show interface ib**

# clock set

To manually configure the time and date of the on-board server switch clock, enter the **clock set** command in privileged EXEC mode.

**clock set** *hh:mm:ss dd mm yy*

## Syntax Description

| | |
|---|---|
| *hh* | Hour to assign. |
| *mm* | Minute to assign. |
| *ss* | Second to assign. |
| *dd* | Day to assign. |
| *mm* | Month to assign. |
| *yy* | Year to assign. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Your server switch uses one of the following means to maintain system time:

- an on-board system clock
- an external NTP server (recommended)

When you first power on your server switch, factory-default system clock settings run. To ensure accurate synchronization, we recommend that you use an external NTP server, as it will synchronize log dates with other management systems. To configure NTP servers, refer to the "ntp" section on page 3-140.

## Examples

The following example sets the clock time to 7:22 PM and 10 seconds on the 25th of May, 2015:

```
SFS-7000P# clock set 19:22:10 25 05 15
```

## Related Commands

**ntp**
**show clock**

# clock summer-time

To set daylight savings time on your server switch, use the **clock summer-time** command in global configuration mode. After entering this command, daylight savings time is displayed in, for example, the output of the **show clock** command and in message logs for the period for which it is configured.

To undo the daylight savings time configuration and revert to use the configured standard local time, use the **no** form of this command.

**Note** This command and support for time zones are available on release 2.8.0. These features are not available on release 2.9.0.

**clock summer-time** *summertime-name start-month start-date start-year start-hour***:***start-minute end-month end-date end-year end-hour***:***end-minute offset*

**no clock summer-time**

## Syntax Description

| | |
|---|---|
| *summertime-name* | Name of the daylight savings time that appears in displays. |
| *start-month* | The month in which daylight savings time starts. |
| *start-date* | The day in the month on which daylight savings time starts. |
| *start-year* | The year in which daylight savings time starts. |
| *start-hour* | The hour of the day in which daylight savings time starts. This field assumes a 24-hour clock. |
| *start-minute* | The minute of the hour in which daylight savings time starts. |
| *end-month* | The month in which daylight savings time ends. |
| *end-date* | The day of the month in which daylight savings time ends, |
| *end-year* | The year in which daylight savings time ends. |
| *end-hour* | The hour of the day in which daylight savings time ends. This field assumes a 24-hour clock. |
| *end-minute* | The minute of the hour in which daylight savings time ends. |
| *offset* | The time in minutes by which daylight savings time is advanced from local standard time. |

## Defaults

By default, daylight savings time is not enforced.

## Command Modes

Global configuration mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R.

**Privilege Level:**

Unrestricted read-write user.

The local time zone should be set on your server switch using the **clock itemizing** command before applying daylight savings time.

The timestamp of syslog messages is adjusted when daylight savings time is configured.

## Examples

The following example sets Pacific Daylight Time to start at 2:00 a.m. on March 11, 2007, and to end at 2:00 a.m. on November 8, 2007.

```
SFS-3012(config)# clock summer-time PDT 3 11 2007 2:00 11 8 2007 2:00 60
```

## Related Commands

**clock timezone**
**clock set**
**show clock**

# clock timezone

To define and set the time zone for the server switch, enter the **clock timezone** command in global configuration mode. Once a time zone is set, the time is displayed in local time in, for example, the output of the **show clock** command and in message logs. To reset the time zone back to the default Coordinated Universal Time (UTC), use the **no** form of this command.

**Note** This command and support for time zones are available on release 2.8.0. These features are not available on release 2.9.0.

**clock timezone** *timezone-name hours minutes*

**no clock timezone**

## SyntaxDescription

| | |
|---|---|
| *timezone-name* | Specifies the time zone name that appears in displays. |
| *hours-offset* | Number of hours offset from UTC. |
| *minutes-offset* | Number of additional minutes offset from UTC. |

## Defaults

The time zone for the server switch is UTC by default.

## Command Modes

Global configuration mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R.

**Privilege Level:**

Unrestricted read-write user.

The timestamp of a syslog message is adjusted when a time zone is configured.

## Examples

The following command sets the time zone to Pacific Standard Time:

```
SFS-3012(config)# clock timezone PST 8 0
```

## Related Commands

**clock summer-time**
**clock set**
**show clock**

# configure terminal

To enter global configuration mode, enter the **configure terminal** command in privileged EXEC mode.

**configure terminal**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

Use the **configure terminal** command to enter global configuration mode. From this mode, you can configure gateway and switch cards, subnet management, IP addressing, and various aspects of your server switch.

## Examples

The following example enters global configuration mode:

```
SFS-7000P# configure terminal
SFS-7000P(config)#
```

## Related Commands

exit

# copy

Use the **copy** command in privileged EXEC mode to perform the following operations:

- Copy files to your server switch from a remote location.
- Copy files from your server switch to a remote location.
- Copy files from one directory on your server switch to another.

To download a file from an FTP server, use this syntax:

```
copy ftp://user-id:password@host[/path]/file-name [slot-number:]file-system[:file-name]
```

To securely transfer files from a remote server to the chassis, use this syntax:

```
copy scp://user-id:password@host[/path]/file-name [slot-number:]file-system[:file-name]
```

To download a file from a remote TFTP server, use this syntax:

```
copy tftp://remote-system[/path]/file-name [slot-number:]file-system[:file-name]
```

To uploads a file to an FTP server, use this syntax:

```
copy {[slot-number:]file-system:file-name | startup-config | running-config}
    ftp://user-id:password@host[/path]/[file-name]
```

To save the running configuration as the startup configuration, use this syntax:

```
copy running-config startup-config
```

To execute a configuration file without a system reboot, use this syntax:

```
copy [slot-number:]file-system:file-name running-config
```

## Syntax Description

| | |
|---|---|
| **ftp** | Identifies a remote system that runs file transfer protocol (FTP). |
| **scp** | Securely transfers files from a remote server to the chassis. |
| **tftp** | Identifies a remote system that runs trivial file transfer protocol (TFTP). |
| *remote-system* | IP address (or DNS name, if appropriate) of the remote host. |
| **running-config** | Refers to the active configuration running on your server switch. |
| **startup-config** | Refers to the configuration that your server switch runs when it boots. |
| *user-id* | User ID that you use to log in to the FTP server. |
| *password* | Password that you use to log in to the FTP server. |
| *host* | FTP server domain name or IP address. |
| *path* | (Optional) Directory path on the host from which or to which you want to copy a file. |
| *slot-number* | (Optional) Slot of the controller card (1 on the Cisco SFS 3001, Cisco SFS 7000, and Cisco 4x InfiniBand Switch Module for IBM BladeCenter; 1 or 14 on the Cisco SFS 3012R; 11 or 12 on the Cisco SFS 7008). |
| *file-name* | Name of the file that you want to copy. |
| *file-system* | File system on your server switch. |

### Defaults

This command has no default settings.

### Command Modes

Privileged EXEC mode.

### Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Use the **copy** command to save a running configuration as a boot-up configuration, to download image files to install, or to upload configurations that you want to propagate to other server switches. The **copy** command copies image data, configuration data, and log data locally as well as onto and off of the system chassis.

**Note** If an administrator has configured the system-mode to VFrame, the server switch does not apply SRP configuration changes to the startup configuration. For more information, refer to this command: system-mode, page 3-384.

The **copy** command can also copy the contents of a configuration file.

**Note** Configuration files that you upload from your server switch to a remote host contain plain text that you can read with any word processor. Log files also appear in plain text.

You may download image and configuration files from an FTP server to the system chassis. You may also upload log and configuration files from the system chassis to an FTP server.

Download image files to your server switch to upgrade system firmware. Download configuration files to quickly replicate a desired configuration. Upload configuration and log files to maintain back-up files and to troubleshoot your server switch.

Image files require additional processing. Your server switch can run an image only after you install the image file. For more information about how to install an image, see install, page 3-115.

**Note** Image files must have an .img extension. The **copy** command returns an error if you attempt to copy an image file and specify a destination file name without an .img extension.

After you download a configuration file to your server switch, you can use the **boot-config** command to configure your server switch to load that configuration when you reboot the server switch.

The **copy** command recognizes **Ctrl-C** as a command to terminate a file transfer. Use **Ctrl-C** to cancel a transfer if the network hangs.

**Note** You can download image and configuration files only. Log files cannot be downloaded. You can upload configuration files and log files only. System image data cannot be uploaded.

## Examples

The following example downloads an image file from a remote host to the server switch:

```
SFS-7000P# copy ftp://bob:mypassword@10.0.0.5/SFS-7000P-sfsOS-2.3.0-build497.img
image:SFS-7000P-2.3.0-build497.img

sfsOS-2.3.0-build497.img
operation completed successfully
```

The following example saves the running configuration as the startup configuration so the current configuration executes when the server switch reboots:

```
SFS-7000P# copy running-config startup-config
operation completed successfully
```

The following example copies the startup configuration image from the controller card in slot 1 on a Cisco SFS 3012R to the controller card in slot 14:

```
SFS-3012R# copy 1:config:startup-config 14:config:save.cfg
** operation completed successfully
```

## Related Commands

**action**
**boot-config**
**delete**
**dir**
**exec**
**ftp-server enable**
**history**
**install**
**show boot-config**

# data-pattern

To specify a data pattern when you run a diagnostic test on an interface, enter the data-pattern command in interface diagnostic configuration submode. To clear the data pattern, use the no form of this command.

**data-pattern** *pattern*

**no data-pattern** *pattern*

## Syntax Description

| | |
|---|---|
| *pattern* | Artificial traffic pattern to create for testing purposes. |

## Defaults

This command has no default settings.

## Command Modes

Interface diagnostic configuration (config-diag-if) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

## Examples

The following example configures the data pattern that runs during a diagnostic test:

```
SFS-3012R(config-diag-if-fc-4/1)# data pattern 11:22:33:44
```

## Related Commands

**test**
**diagnostic**
**start**
**stop**
**show interface ethernet**
**show interface fc**
**show interface ib**

# data-size

Configure the data size property of your test to customize the size of packets, frames, or IB packets that your server switch uses for your test. To configure the payload size of an interface, enter the **data-size** command in interface diagnostic configuration submode. To clear the data size, use the **no** form of this command.

**data-size** *size*

**no data-size** *size*

## Syntax Description

Data size defaults to 4 octets.

| | |
|---|---|
| *size* | Integer value that represents the payload size, in octets. |

## Command Modes

Interface diagnostic configuration submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

## Examples

The following example configures the payload size for a diagnostic test:

```
SFS-3012R(config-diag-if-fc-4/1)# data size 8
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface fc**
**show interface gateway**
**start**
**stop**
**test**

# delete

To remove image files, configuration files, or log files from your server switch, enter the **delete** command in privileged EXEC mode.

**delete** [*slot-number*:]*file-system*:*file*

## Syntax Description

| | |
|---|---|
| *file-system* | server switch file system. Your server switch displays this internal directory by name only. The file systems are config, images, and syslog. The specified file system must be appropriate to the type of file that you want to delete. For example, if you attempt to delete a configuration file from the syslog file system, an error occurs because the name of the file does not match the file system. A colon (:) always follows the file-system specification.<br>**Note** The startup configuration maps to config:startup-config. Therefore, you do not need to specify the file system at the CLI. |
| *slot-number* | (Optional) Slot of the controller card (1 on the Cisco SFS 3001 and Cisco SFS 7000, 1 or 14 on the Cisco SFS 3012R, 11 or 12 on the 7008P). |
| *file* | Name of the configuration file, image file, or log file that you want to delete. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

You cannot delete an active image. The following images are considered active:

- The last loaded image (the one you're currently running).
- The image that was made active with "boot-config primary-image-source" command.

## Examples

The following example deletes the delete-me.cfg file from the controller card in slot 1 of a Cisco SFS 3012R:

```
SFS-3012R# delete 1:config:delete-me.cfg
Delete file 1:delete-me.cfg? [yes(default) | no] yes
******
```

The following example deletes an image file from the controller card in slot 14 of a Cisco SFS 3012R:

```
SFS-3012# delete 14:image:sfs360-sfsOS-2.0.0-build488.img
Delete file 14:sfs360-sfsOS-2.0.0-build488.img? [yes(default) | no] yes
******
```

## Related Commands

**boot-config**
**copy**
**dir**
**install**

# diagnostic

To enter diagnostic configuration submode, enter the **diagnostic** command in global configuration mode.

**diagnostic** {**card** {*card-selection* | **all**} | **chassis** | **interface** {**fc** | **ib** | **ethernet**} {*interface-selection* | **all**} | **fan** {*fan-number* | **all**} | **power-supply** {**supply** | **all**} }

**Note** Not all syntax applies to all hardware platforms. Enter diagnostic submode to run test on cards and interfaces.

## Syntax Description

| | |
|---|---|
| **card** | Enters card diagnostic configuration submode. |
| *card-selection* | Card, list of cards, or range of cards to diagnose. |
| **chassis** | Configures chassis-specific diagnostic tests. |
| **fan** | Configures fan-specific diagnostic tests. |
| **interface** | Enters interface diagnostic configuration submode. |
| **fc** | Specifies Fibre Channel interfaces. |
| **ib** | Specifies InfiniBand interfaces. |
| **ethernet** | Specifies Ethernet interfaces. |
| *interface-selection* | Interface, list of interfaces, or range of interfaces to diagnose. |
| **all** | Specifies all interfaces of the technology type that you specified for all cards. |
| **power-supply** | Configures power supply-specific diagnostic tests. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Note** The SFS 3001 and SFS 3012 can run card and interface tests only.

**Privilege Level:**

Read-write user for the appropriate technology.

## Examples

The following example enters diagnostic configuration submode for Ethernet port 2/1:

```
SFS-3012R(config)# diagnostic interface ethernet 2/1
SFS-3012R(config-diag-if-ether-2/1)#
```

## Related Commands

show diagnostic
show card
start
stop
test

# dir

To list the configuration files, log files, and system image files on your server switch, enter the **dir** command in privileged EXEC mode.

**dir** [*slot-number*:]{**config** | **image** | **syslog**}

## Syntax Description

| | |
|---|---|
| *slot-number* | (Optional) Slot of the controller card (1 on the Cisco SFS 3001 and Cisco SFS 7000, 1 or 14 on the Cisco SFS 3012R, 11 or 12 on the Cisco SFS 7008). |
| **config** | Lists all configuration files in the config directory. |
| **image** | Lists the current image files and system images in the image directory. Image files end with a .img extension. Installed system images look like path names.<br>**Note** You must unpack and install image files before they can boot the system. For more information, refer to the **install** command. |
| **syslog** | Lists the log files in the syslog directory. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use this command to list the files on your server switch. This command requires one of three arguments: **config**, **image**, or **syslog**. Files reside on the server switch in separate file systems. The CLI automatically tracks these file systems, so you do not need to include file-path information to administer these files.

Use the **dir** command with the **image** keyword to see the installed image directories on your server switch.

On the Cisco SFS 3012R, use the *slot-number* variable to view files on the controller card in slot 1 or slot 14. The **dir** command lists the files of the active controller by default.

## Examples

The following example displays the configuration files on the server switch:

```
SFS-7000P# dir config
================================================================================
                          Existing Configurations on System
================================================================================
slot    date-created                   size       file-name
----------------------------------------------------------------------------
1       Thu Oct 24 11:21:06 2002       58         check.cfg
1       Thu Dec  5 14:50:09 2002       39216      check2.cfg
1       Wed Dec 11 09:09:54 2002       1712       config_bc.cfg
1       Thu Dec  5 11:18:21 2002       1712       running_config.cfg
1       Wed Dec  4 07:10:23 2002       4407       running_config.cfg.backup
1       Thu Dec  5 12:04:53 2002       1712       running_config2.cfg
1       Thu Oct 24 11:19:53 2002       58         test.cfg
SFS-7000P#
```

The following example displays installed system images and image files on the server switch:

```
SFS-7000P# dir image
===============================================================
             Existing Boot-Images on System
===============================================================
slot    date-created                   size       file-name
----------------------------------------------------------------------------
1       Thu Jun 1 11:16:50 2003       23691613   TopspinOS-1.1.3-build548.img
1       Wed Jul 11 00:56:52 2002       1024       TopspinOS-1.1.3/build541
1       Thu Jul 1 00:10:40 2003       1024       TopspinOS-1.1.3/build548
SFS-7000P#
```

The following example displays the log files in the syslog directory on the server switch:

```
SFS-7000P# dir syslog
============================================================================
                        Existing Syslog-files on System
============================================================================
slot    date-created                   size       file-name
----------------------------------------------------------------------------
1       Thu Jun 12 12:13:06 2002       19636      ts_log
1       Wed Jun 11 13:28:54 2002       4978       ts_log.1.gz
1       Tue Jun 10 04:02:02 2002       30         ts_log.2.gz
1       Mon Jun 9 04:02:02 2002       30         ts_log.3.gz
1       Sun Jul 8 04:02:02 2002       30         ts_log.4.gz
1       Sat Jul 7 04:02:02 2002       30         ts_log.5.gz
1       Fri Jul 6 17:20:35 2002       16264      ts_log.6.gz
1       Thu Jul 5 15:14:57 2002       245        ts_log.7.gz
SFS-7000P#
```

The following example displays the files in the image directory on the controller in slot 14 of a Cisco SFS 3012R:

```
SFS-3012R# dir 14:image


================================================================================
                         Existing Boot-Images on System
================================================================================
slot date-created              size      file-name
--------------------------------------------------------------------------------
14   Thu Mar 18 14:59:06 2004  0         TopspinOS-2.0.0/build488
```

## Related Commands

**boot-config**
**copy**
**delete**
**install**
**more**

# disable (privileged EXEC mode)

To exit privileged EXEC mode and return to user EXEC mode, enter the **disable** command in privileged EXEC mode.

**disable**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

## Examples

The following example exits privileged EXEC mode and enters user EXEC mode:

```
SFS-7000P# disable
SFS-7000P>
```

## Related Commands

**enable (user EXEC mode)**

# disable (trunk interface configuration submode)

To disable a trunk group, enter the **disable** command in trunk interface configuration submode.

**disable**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Trunk interface configuration (config-if-trunk) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

## Examples

The following example disables a trunk group:

```
SFS-3012R(config-if-trunk)# disable
```

## Related Commands

**enable (trunk interface configuration submode)**
**show interface ethernet**

# distribution-type

To configure the type of load distribution that your Ethernet gateway uses to communicate with a Link Aggregation-aware switch, enter the **distribution-type** command in trunk interface configuration submode.

**distribution-type** {**dist-ip** | **dst-mac** | **src-dst-ip** | **src-dst-mac** | **src-ip** | **src-mac** | **round-robin**}

## Syntax Description

| | |
|---|---|
| **dst-ip** | Bases the load distribution on the destination IP address of the incoming packet. Packets to the same destination travel on the same port, but packets to different destinations travel on different ports in the channel. |
| **dst-mac** | Bases the load distribution on the destination host MAC address of the incoming packet. Packets to the same destination travel on the same port, but packets to different destinations travel on different ports in the channel. |
| **src-dst-ip** | Bases load distribution on the IP address of the source logic gate (XOR) destination. |
| **src-dst-mac** | Bases load distribution on the MAC address of the source logic gate (XOR) destination. |
| **src-ip** | Bases the load distribution on the source IP address. Packets from the same source travel on the same port, but packets from different sources travel on different ports in the channel. |
| **src-mac** | Bases load distribution on the source MAC address of the incoming packet. Packets from different hosts use different ports in the channel, but packets from the same host use the same port in the channel. |
| **round-robin** | Bases the load distribution on a circular pattern to create an evenly distributed load. |

## Defaults

The distribution-type defaults to src-mac.

## Command Modes

Trunk interface configuration (config-if-trunk) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

You must configure a distribution type to bridge to a load aggregation-aware Ethernet switch. Contact your administrator to discover if a switch is load aggregation-aware.

## Examples

The following example configures src-mac distribution for the trunk interface:

```
SFS-3012R# interface trunk 1
SFS-3012R(config-if-trunk)# distribution-type src-mac
```

## Related Commands

**show trunk**

# enable (user EXEC mode)

To enter privileged EXEC mode from user EXEC mode, enter the **enable** command in user EXEC mode.

**enable**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Enter the **enable** command in user EXEC mode to make administrative configuration changes to your server switch.

## Examples

The following example enters privileged EXEC mode from user EXEC mode:

```
SFS-7000P> enable
SFS-7000P#
```

## Related Commands

**disable (privileged EXEC mode)**
**exit**

# enable (trunk interface configuration submode)

To enable a trunk group, enter the **enable** command in trunk interface configuration submode.

**enable**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Trunk interface configuration (config-if-trunk) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Enter the **enable** command in trunk interface configuration submode to activate a trunk group.

## Examples

The following example enables a new trunk group:

```
SFS-7000P(config-if-trunk)# enable
```

## Related Commands

disable (trunk interface configuration submode)

# exec

To execute a file in the config file system on your server switch, enter the **exec** command in privileged EXEC mode.

**exec** *file-name*

## Syntax Description

| | |
|---|---|
| *file-name* | Name of the file that you want to execute. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

You can create command files on a management workstation and copy them to config file system on the switch using **copy** command. Then you can execute these files with **exec** command. Use the **save-log** command to save the latest commands that you have executed in the CLI to a file, then copy the file to the management station and use it as an example. See the **save-log** and **copy** commands for further details.

**Note** You can run files only from the config directory of your file system.

## Examples

The following example executes the test.cfg file in the config file system on the server switch:

```
SFS-7000P# exec test.cfg
```

## Related Commands

copy

# exit

To exit your current CLI mode and return to the previous mode, enter the **exit** command in any mode.

**exit** [**all**]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Returns you to user EXEC mode from any other CLI mode. |

## Defaults

This command has no default settings.

## Command Modes

All modes.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

All users.

The **exit** command performs different functions in different modes.

*Table 3-3 Exit Command Modes and Functions*

| Mode(s) | Function |
|---|---|
| User EXEC<br>Privileged EXEC | Logs you out of the server switch. |
| Global Configuration | Returns you to privileged EXEC mode. |
| Configuration submode (any) | Returns you to global configuration mode. |

## Examples

The following example exits card configuration submode and enters user EXEC mode:

```
SFS-7000P(config-card-1,2)# exit all
SFS-7000P>
```

## Related Commands

enable (user EXEC mode)
login
logout

# fc srp initiator

To create or modify an initiator—normally a SAN-attached host but in IB terms a SRP host combined with a server switch—to communicate with a Fibre Channel SAN across a Fibre Channel gateway on your server switch, enter the **fc srp initiator** command in global configuration mode. To delete an initiator, its WWPNs, initiator target pairs (ITs) associated with the deleted initiator, and initiator-target-LUNs associated with the deleted initiator, use the **no** form of this command.

**fc srp initiator** *guid extension* {**auto-bind** | {**bootup** | **alt-bootup** } **target** *target-wwpn* **lu** *logical-unit* | **description** *descr* | **discover-itl** | **pkey** *pkey-value* | **wwnn** *wwnn-value*}

**no fc srp initiator** *guid extension* [**description**]

## Syntax Description

| | |
|---|---|
| *guid* | Global unique identifier (GUID) of the SRP host.<br>**Note** The GUID of your SRP host appears printed on the HCA in your server, and you can use host driver utilities to view the GUID. For more information, refer to the *Host Channel Adapter Installation Guide*. |
| *extension* | GUID extension of the SRP host. |
| **auto-bind** | 1. Creates the initiator entry in the configuration file and binds the host to a world-wide node name (WWNN) that your server switch generates internally to uniquely identify the host.<br>2. Creates virtual ports for this initiator on every possible physical FC gateway port on your server switch. FC devices use these virtual ports to communicate with the initiator. |
| **bootup** | Configures the SRP host to boot from a Fibre Channel logical unit (LU). |
| **alt-bootup** | Configures an alternate Fibre Channel LU for the SRP host to boot from in case the path to the primary boot LU is unavailable. |
| **target** | Specifies the world-wide port name (WWPN) of the port of the FC storage device that stores image that you want the initiator to boot. |
| *target-wwpn* | WWPN of the port of the FC storage device that stores image that you want the initiator to boot. |
| **lu** | Specifies the logical unit (LU) that stores image that you want the initiator to boot. |
| *logical-unit* | Logical ID of the LU that stores image that you want the initiator to boot. |
| **description** | (Optional) Assigns an alphanumeric ASCII description string to the initiator.<br>Enter a description to help identify an initiator without reading its GUID and extension. |
| *descr* | Alphanumeric ASCII description string to assign to the initiator. |
| **discover-itl** | Discovers initiator-target-LUN (ITL) combinations and adds them to your configuration file. Targets refer to SAN storage devices, and LUNs refer to the logical units within SAN storage devices.<br>For detailed information on ITLs, refer to the *Fibre Channel Gateway User Guide*. |

| | |
|---|---|
| **pkey** | Assigns a partition key (P_key) to the initiator.<br>**Note** Your server switch does not currently support partition keys for SRP.<br>Refer to the *Element Manager User Guide* to learn more about partitions. |
| *pkey-value* | 16-bit partition key to assign to the initiator. Assign multiple partition keys by appending a colon, then the next key (aa:aa:bb:bb:cc:cc:dd:dd). |
| **wwnn** | Creates the initiator entry in the configuration file and assigns a manually-entered WWNN to the initiator. |
| *wwnn-value* | WWNN to assign to the initiator.<br>Enter a question mark (**?**) to have the CLI provide a recommended WWNN value. |

## Defaults

By default, no P_keys apply to initiators. By default, global policies apply to initiators. Configure global policies with **fc srp-global** commands.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user, Fibre Channel read-write user

Configure initiators so SRP hosts can communicate with SANs.

**Note** When you configure new initiators, those initiators inherit the global policies that exist at that time. When you change global policies, the new global policies do not apply to existing initiators.

### Creating SRP Initiators

Before you can customize initiators, you must create the initiators and assign, or *bind*, a WWNN (an identifier that FC devices recognize) to each initiator so that Fibre Channel devices can communicate with initiators. You can create an initiator entry with either the **auto-bind** keyword or the **wwnn** keyword. Once you identify a host as an initiator, you can customize the initiator with the remaining keywords.

- Using the **auto-bind** keyword, the switch creates an Initiator with an automatically assigned initiator WWNN and one virtual port (NL_Port) for each possible Fibre Channel port. The server switch assigns an internally generated WWPN to each virtual port. For example, for a Cisco SFS 3012 server switch (14 gateway slots and 2 ports per Fibre Channel gateway) 14 * 2 WWPNs are configured for this new initiator.

  Each physical port on the Fibre Channel gateway supports 256 ports to form a virtual Fibre Channel arbitrated loop.

- Using the **wwnn** keyword, this command creates an initiator with a user assigned WWNN. You must then use **fc srp initiator-wwpn** command to configure virtual ports and initiator WWPNs for this initiator.

**Note** We strongly recommend that you use the **auto-bind** keyword to assign WWNNs to initiators as you configure the initiators. If you do manual configuration, you might create duplicate WWNNs that create traffic conflicts.

### Removing an alternate boot target and LU

To remove an alternate boot target and LU, use the **alt-boot** keyword with the *target-wwpn* and *logical-unit* set to 00:00:00:00:00:00:00:00,

## Examples

The following example adds an initiator to the running configuration and automatically configures the WWNN of the initiator and the WWPNs of the virtual ports that point to the initiator from the physical FC gateway ports:

```
SFS-3012R(config)# fc srp initiator 00:00:2C:90:01:1b:b7:50 00:00:00:00:00:00:00:00
auto-bind
```

The following example assigns the description **InfiniBand Host** to an existing initiator. The name now appears in the **show fc srp initiator** command output:

```
SFS-3012R(config)# fc srp initiator 00:00:2C:90:01:1b:b7:50 00:00:00:00:00:00:00:00
description "InfiniBand Host"
```

The following example discovers all potential initiator-target-LUN (ITL) combinations that your server switch can support and adds them to the running configuration. To view the results of this command, enter the **show fc srp itl** command:

```
SFS-3012R(config)# fc srp initiator 00:00:2C:90:01:1b:b7:50 00:00:00:00:00:00:00:00
discover-itl
```

The following example configures a primary target and LUN for the SRP host to boot from and an alternate boot target and LUN in case the primary boot LUN is unavailable:

```
SFS-3012R(config)# fc srp initiator 00:00:00:fd:00:00:34:ad 00:00:00:00:00:00:00:00 bootup
target 00:00:3f:00:00:00:00:02 lu 00:00:00:14:00:00:00:00
SFS-3012R(config)# fc srp initiator 00:00:00:fd:00:00:34:ad 00:00:00:00:00:00:00:00
alt-bootup target 00:00:3f:00:00:00:00:05 lu 00:00:00:15:00:00:00:00
```

The following example removes the alternate boot target and LUN:

```
SFS-3012R(config)# fc srp initiator 00:00:00:fd:00:00:34:ad 00:00:00:00:00:00:00:00
alt-bootup target 00:00:00:00:00:00:00:00 lu 00:00:00:00:00:00:00:00
```

## Related Commands

**fc srp-global lun-policy restricted**
**show fc srp initiator**

# fc srp initiator-wwpn

To manually create, on a physical FC gateway port, a virtual port that points to an initiator, enter the **fc srp initiator-wwpn** command in global configuration mode.

**fc srp initiator-wwpn** *guid extension slot#/port# wwpn*

## Syntax Description

| | |
|---|---|
| *guid* | Global unique identifier (GUID) of the SRP host (initiator) that you want to connect to a Fibre Channel SAN. |
| *extension* | GUID extension of the SRP host that you want to connect to a Fibre Channel SAN. |
| *slot#* | Slot of the FC gateway expansion module that you want to use. |
| *port#* | Fibre Channel gateway port that you want to use to connect your initiator to the SAN. |
| *wwpn* | WWPN to assign to the new virtual port. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

Configure WWPNs for initiators so that FC devices can recognize them and communicate with them. With virtual ports (NL_ports), physical FC ports can point to multiple initiators, and multiple ports can point to the same initiator. For instance, if you have Initiators X and Y and Physical FC Ports A and B, you can create the following virtual ports:

- virtual port AX on port A that points to initiator X
- virtual port AY on port A that points to initiator Y
- virtual port BX on port B that points to initiator X
- virtual port BY on port B that points to initiator Y

As you can see, in this way, multiple virtual ports can point to one initiator and individual physical ports can support multiple initiators.

When you enter a question mark (?) after the *port#* variable, the CLI provides a suggested WWPN value.

**Note** Use the recommended WWPN unless you have a compelling reason to do otherwise. We *strongly* recommend that you use the **fc srp initiator** command with the **auto-bind** keyword to create initiator entries and assign WWPNs to initiators.

## Examples

The following example uses the online help (**?**) to find the recommended WWPN value, then configures a virtual port on port 1 on the FC gateway expansion module in slot 7:

```
SFS-3012R(config)# fc srp initiator-wwpn 00:00:2c:90:01:1b:b7:50 00:00:00:00:00:00:00:00
7/1 ?
<wwpn>                - wwpn
Suggested wwpn = 20:03:00:05:ad:70:00:02
SFS-3012R(config)# fc srp initiator-wwpn 00:00:2c:90:01:1b:b7:50 00:00:00:00:00:00:00:00
7/1 20:03:00:05:ad:70:00:02
SFS-3012R(config)#
```

## Related Commands

**fc srp initiator**
**show fc srp initiator**

# fc srp it

To configure an *initiator-target* (IT) pair—a fully-configured link between an initiator and a target storage device port—with your server switch, enter the **fc srp it** command in global configuration mode. To delete or reconfigure an IT pair entry from the configuration file, use the **no** form of this command.

**fc srp it** *guid extension wwpn* {**description** "*descr*" | **discover-itl** | **gateway-portmask-policy** {**default** | **test-mode** | **restricted** *port-selection*}}

**no fc srp it** *guid extension wwpn* [**test-mode** | **gateway-portmask-policy restricted** *port-selection*]

## Syntax Description

| | |
|---|---|
| *guid* | Global unique identifier (GUID) of the initiator. |
| *extension* | GUID extension of the initiator. |
| *wwpn* | World-wide port name (WWPN) of the target port of the FC storage device. |
| **description** | Assigns a description to the initiator-target pair. |
| *descr* | Alphanumeric description to assign to the initiator target. |
| **discover-itl** | Discovers initiator-target-LUN (ITL) groups for the specified target and adds them to the configuration file. For detailed information on ITLs, refer to the *Fibre Channel Gateway User Guide*. |
| **gateway-portmask-policy** | (Optional) Designates the physical FC gateway ports that the initiator can use to access the storage port. When you add FC gateway ports to the policy, the initiator cannot use those ports to access the storage. When you use the **no** keyword to remove FC gateway ports from the policy, the initiator can access the storage through those ports. |
| **default** | Assigns the global gateway portmask policy to the IT. To view your default policy, enter the **show fc srp-global** command (in user EXEC mode or privileged EXEC mode) and view the **default-gateway-portmask-policy** field. |
| **restricted** | (Optional) Denies the initiator access to the ports that you specify with the *port-selection* variable. Use the **no** form of the command to add ports to the policy to grant the initiator access. |
| *port-selection* | (Optional) Port, list of ports, or range of ports to which you grant or deny the initiator access. |
| **test-mode** | (Optional) Sets an inactive initiator-target pairing to test mode, which configures the FC gateway to log in to storage persistently and block log-ins from SRP hosts (initiators). Use test mode as you set up your Fibre Channel connections, then use the **no** form of the command to return to normal mode.<br>**Note** You cannot configure an active IT to test mode. Active ITs must remain in normal mode.<br>**Note** A test-mode configuration does not persist across reboots. |

## Defaults

By default, this policy denies initiators access to all targets.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

The **fc srp it** command sets policies that control the extent to which the initiator accesses Fibre Channel gateway ports. Use the **no** form of this command with the **gateway-portmask-policy** keyword to grant an initiator access to the ports you specify.

**Note** We strongly recommend that you let your server switch populate the running configuration with IT pairs; do not manually enter IT pairs.

## Examples

The following example assigns a description of **entry** to an existing IT:

```
SFS-3012R(config)# fc srp it 00:00:2c:90:01:1b:b7:40 00:00:00:00:00:00:00:00
21:00:00:04:cf:75:6b:3b description "entry"
```

The following examples configure and then reset test mode:

```
SFS-3012R(config)# fc srp it 00:02:c9:02:00:40:0e:d4 00:00:00:00:00:00:00:00 2
1:00:00:04:cf:86:a0:1f test-mode

SFS-3012R(config)# no fc srp it 00:02:c9:02:00:40:0e:d4 00:00:00:00:00:00:00:0
0 21:00:00:04:cf:86:a0:1f test-mode
SFS-3012R(config)#
```

## Related Commands

**fc srp-global gateway-portmask-policy restricted**
**show fc srp it**
**show interface fc**

# fc srp itl

To configure an initiator-target-LUN (ITL) group—a fully-configured link between an initiator and Fibre Channel storage—on your server switch, enter the **fc srp itl** command in global configuration mode. To delete an ITL entry or reset the description of an ITL to an empty string, use the **no** form of this command.

**Note** For a breakdown of the different actions that you can perform with the **fc srp itl** command, refer to Table 3-4.

**fc srp itl** *guid extension wwpn LUN* {**description** "*descr*" | **dynamic-gateway-port-failover** [**default**] | **dynamic-gateway-port-loadbalancing** [**default**] | **dynamic-path-affinity** [**default**] | **gateway-portmask-policy** {**default** | **restricted** {*port-selection* | **all**}} | **io-hi-mark** *mark* [**default**] | **lun-policy** {**default** | **restricted**} | **max-retry** *retry* [**default**] | **min-io-timeout** *timeout* [**default**] | **srp-lunid** *lunid* **logical-id** *logical-id*}

**no fc srp itl** *guid extension wwpn LUN* {**description** | **dynamic-gateway-port-failover** | **dynamic-gateway-port-loadbalancing** | **dynamic-path-affinity** | **gateway-portmask-policy restricted** *port-selection* | **io-hi-mark** | **lun-policy restricted** | **max-retry** | **min-io-timeout**}

## Syntax Description

| | |
|---|---|
| *guid* | Global unique identifier (GUID) of the initiator. |
| *extension* | GUID extension of the initiator. |
| *wwpn* | World-wide port name (WWPN) of the target port of the FC storage device. |
| *LUN* | FC LUN ID of the FC storage disk. |
| **description** | Assigns a text description to the ITL. |
| *descr* | Alphanumeric description (up to 50 characters) to assign to the initiator-target-LUN. |
| **dynamic-gateway-port-failover** | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| **default** | (Optional) Sets an attribute to its global default value. |
| **dynamic-gateway-port-loadbalancing** | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| **dynamic-path-affinity** | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| **gateway-portmask-policy** | Defines the port restrictions that apply to the initiator for that ITL. |
| **restricted** | Denies the initiator access to select ports or LUNs for the ITL. Grants the initiator access to select ports or LUNs when you use the **no** keyword. |
| *port-selection* | Port, list of ports, or range of ports that the initiator can or cannot access for the ITL. |

| | |
|---|---|
| **all** | Specifies all ports. |
| **lun-policy** | Permits the initiator to access the LUN or denies the initiator access to the LUN. |
| **io-hi-mark** | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| *mark* | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| **max-retry** | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| *retry* | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| **min-io-timeout** | The **fc srp itl** command no longer supports this syntax.<br>**Note** This syntax appears for legacy purposes. Use the config **fc srp lu** command to set this feature. |
| *timeout* | The **fc srp itl** command no longer supports this syntax. This syntax appears for legacy purposes. |
| **srp-lunid** | Specifies a LUN ID called the SRP LUN ID to which you map an existing FC LUN ID. Essentially, this keyword creates an alias LUN ID. |
| *lunid* | SRP LUN ID that maps to an existing FC LUN ID. This value appears in the **srp-lunid** field of the **show fc srp itl** command output. |
| **logical-id** | Specifies the FC LUN ID to map to the SRP LUN ID. |
| *logical-id* | Complete Logical ID (entered without colons, as per the example below) of the LU that maps to the user-created SRP LUN ID. This value appears in the **fc-lunid** field of the **show fc srp itl** command output. |

## Defaults

Default values and behaviors appear in the Syntax Description and Table 3-4 on page 3-79.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

The **fc srp itl** command configures new ITLs and sets policies to control access that the SCSI RDMA Protocol (SRP) initiator has to the Fibre Channel storage devices on a per-LUN basis. An “initiator-target-lun” (ITL) identifies a fully-configured link between an initiator and storage.

When an ITL entry is created, the gateway-portmask-policy setting is independent of its IT entry. You can change the setting on a per ITL basis. However, a port is accessible for an ITL only when the port is accessible for both the IT and ITL entries.

The port list specified in this command creates an accumulative effect to the actual gateway-portmask-policy. For example, if your current mask is 2/1 and 2/2, after you enter the **config fc srp itl gateway-portmask-policy restricted 2/1** command, the result of the mask for this ITL would be 2/2. The same effect applies to the no-command for gateway-portmask-policy.

We recommend that you create ITLs with the **discover-itl** keyword in the CLI or the **Discover LUNs** button in Element Manager.

*Table 3-4 fc srp itl Command Usage Examples*

| Example | Result |
|---|---|
| **fc srp itl** *guid extension wwpn LUN* **srp-lunid** *lunid* **logical-id** *logical-id* | Creates an SRP LUN ID alias for an existing FC LUN ID. |
| **no fc srp itl** *guid extension wwpn LUN* | Deletes an ITL entry from the ITL table. |
| **fc srp itl** *guid extension wwpn LUN* **description "***descr***"** | Assigns a text description to the ITL. |
| **no fc srp itl** *guid extension wwpn LUN* **description** | Resets the description of the ITL to an empty string. |
| **fc srp itl** *guid extension wwpn LUN* **gateway-portmask-policy restricted** *port-selection* | Denies the ITL access to the ports that you specify with the *port-selection* variable. |
| **fc srp itl** *guid extension wwpn LUN* **gateway-portmask-policy default** | Applies the current IT gateway-portmask-policy configuration to the ITL. The whole port list is copied from the IT entry to the ITL entry. You configure the default access with the **fc srp-global gateway-portmask-policy restricted** command. |
| **no fc srp itl** *guid extension wwpn LUN* **gateway-portmask-policy restricted** *port-selection* | Grants the ITL access to the ports that you specify with the *port-selection* variable.<br>Default: An ITL entry inherits its gateway-portmask-policy configuration from its IT entry at entry creation time. |
| **fc srp itl** *guid extension wwpn LUN* **lun-policy restricted** | Denies the initiator access to the storage. |
| **no fc srp itl** *guid extension wwpn LUN* **lun-policy restricted** | Grants the initiator access to the storage. |
| **fc srp itl** *guid extension wwpn LUN* **lun-policy default** | Resets the LUN-policy to the global default. Set the default with the **fc srp-global lun-policy restricted** command. |

## Examples

This example denies the initiator access to port 1 of Fibre Channel interface card 6 for this ITL:

```
SFS-3012R(config)# fc srp itl 00:00:2c:90:01:1b:b7:40 00:00:00:00:00:00:00:00
21:00:00:04:cf:75:6b:3b 00:00:00:00:00:00:00:00 gateway-portmask-policy restricted 6/1
```

The following example creates a SRP LUN and maps a LU to it:

```
SFS-3012R(config)# fc srp itl 00:02:c9:01:07:fc:64:a0 00:00:00:00:00:00:00:00
21:00:00:04:cf:fb:8c:87 00:00:00:00:00:00:00:00 srp-lunid 01:01:01:01:01:01:01:01
logical-id 0103000820000004cffb8c870000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000000000
```

## Related Commands

fc srp lu
fc srp target
show fc srp-global
show fc srp initiator
show fc srp it
show fc srp itl
show fc srp lu

# fc srp lu

To configure a logical unit, enter the **fc srp lu** command in global configuration mode. To delete a logical unit or to set a LU attribute to the factory default value, use the **no** form of this command.

**fc srp lu** *logical-id* {**description** "*descr*" | **device-category** {**random target** *wwpn* | **sequential target** *wwpn*} | **dynamic-gateway-port-failover** [**default**] | **dynamic-gateway-port-loadbalancing** [**default**] | **dynamic-path-affinity** [**default**] | **io-hi-mark** *mark* [**default**] | **max-retry** *retry* [**default**] | **min-io-timeout** *timeout* [**default**] | **target** *wwpn*}

**no fc srp lu** *logical-id* {**dynamic-gateway-port-failover** | **dynamic-gateway-port-loadbalancing** | **dynamic-path-affinity** | **target**}

## Syntax Description

| | |
|---|---|
| *logical-id* | LU identifier in 64-byte, hexadecimal format *without colons* (see example). |
| **description** | Assigns a textual description to the LU. |
| *descr* | Alphanumeric description to assign to the LU. |
| **device-category** | Configures the device category of the LU: random (disk) or sequential (tape). |
| **random** | Identifies a LU for a random device. |
| **sequential** | Identifies a LU for a sequential device |
| **dynamic-gateway-port-failover** | Enables dynamic gateway port failover so that if one gateway port fails, the other port on the gateway maintains the traffic to the LU. |
| **default** | (Optional) Sets an attribute to its global default value. |
| **dynamic-gateway-port-loadbalancing** | Enables gateway port load balancing across multiple ports for this LU to optimize performance and utilize all available bandwidth. |
| **dynamic-path-affinity** | Enables dynamic path affinity for this LU, which locks a storage connection to a path for the duration of data transfer to provide faster, more efficient data delivery. |
| **io-hi-mark** | Configures the maximum amount of I/O that the LU can send to the initiator. |
| *mark* | Maximum amount of I/O (integer value from 1 - 256) that the initiator can send to the storage device (LU). This value defaults to 5. |
| **max-retry** | Maximum number of times that the initiator unsuccessfully sends data to a LU before the initiator identifies the LU as inaccessible. |
| *retry* | Integer value from 1 - 100. The *retry* variable defaults to 5. |
| **min-io-timeout** | Configures the maximum amount of time during which the storage device can accept I/O. |
| *timeout* | Maximum amount of time during which a storage device can accept I/O. Integer value from 1 - 1800. This value defaults to 10. |
| **target** | Specifies a target to add to the LU target list. |
| *wwpn* | World-wide port name (WWPN) of the target port to add to the LU target list. |

## Defaults

Refer to the Syntax Description for default behavior and values.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

Use the **fc srp lu** command to configure LU attributes.

We recommend that you do not manually create LUs. We recommend that you let your gateway card(s) detect LUs. The gateway card automatically creates LU entries when it discovers LUs.

For the following settings, the LU entry gets the default from srp-global settings at entry creation time depending on the LU category.

Once a LU entry is created, the LU settings are independent of the srp-global. You can change the settings on a per LU basis using this command.

Table 3-5 provides usage guidelines for this command.

*Table 3-5 Usage Guidelines for fc srp lu Command Arguments*

| Argument | Description |
|---|---|
| **dynamic-gateway-port-failover** | Default: the configured value of the **srp-global itl** command for this LU category (random/sequential).<br>Allows the controller to select an alternate gateway interface port if the primary path fails. Enter the **fc srp lu** command with this keyword to enable this feature. Otherwise, use the **no** form of the command string to disable this feature. If you enable this policy, you implicitly disable port load balancing and dynamic path affinity. |
| **dynamic-gateway-port-loadbalancing** | Default: the configured value of the **srp-global itl** command for this LU category (random/sequential).<br>Allows data to be sent between the initiator and Fibre Channel target using all available ports on the gateway interface. Port selection relies upon comparative I/O traffic. The controller attempts to distribute traffic equally between the ports. Enter the **fc srp lu** command with this keyword to enable this feature. Otherwise, user the **no** form of the command string to disable this feature. If you enable this policy, you implicitly disable port failover and dynamic path affinity. |

*Table 3-5 Usage Guidelines for fc srp lu Command Arguments (continued)*

| Argument | Description |
|---|---|
| **dynamic-path-affinity** | Default: the configured value of srp-global itl for this LU category (random/sequential).<br>Allows the system to maintain a preference for a specific path. If the number of outstanding I/Os becomes excessive, or the path fails, the gateway uses an alternate path. When enabled, the gateway uses the current path until the path condition changes. Note that frequent switching degrades performance. Enter the **fc srp lu** command with this keyword to enable this feature. Otherwise, use the **no** form of the command string to disable this feature. If you enable this policy, you implicitly disable port failover and port load balancing. |
| **io-hi-mark mark** | Default: the configured value of srp-global itl for this LU category (random/sequential).<br>Sets the maximum number of I/O requests that can be sent per logical unit. The value, an integer, must fall between 1 and 256. Enter the **fc srp lu** command with this keyword and the desired io-hi-mark value to set this feature. |
| **max-retry retry** | Default: the configured value of the srp-global itl for this LU category (random/sequential).<br>Number of times the same I/O request can be sent to a logical unit. Increase the value if heavy traffic runs, or increase the min-io-timeout value. The value, an integer, must fall between 1 and 100. Enter the **fc srp lu** command with this keyword and the desired max-retry value to set this feature. - min-io-timeout timeout Default: the configured value of srp-global itl for this LU category (random/sequential).<br>Maximum amount of time allowed for I/O traffic to be accepted by a logical unit. Increase this value (or increase the max-retry value) if you use a known slow connection. The value, an integer, must fall between 1 and 1800. |
| **target target-wwpn** | Specifies a target to add to the LU target list. The LU can be accessed via the target ports configured. You can add at most eight targets to a LU one at a time. Enter the **fc srp lu** command with this keyword and the desired world-wide port name (WWPN) of the target port value to add the target port to the list. Use the **no** form of this command to remove a target port from the list. |

## Examples

The following example assigns a name to more easily identify the logical unit:

```
SFS-3012R(config)# fc srp lu
0103000820000004cf86a01f000000000000000000000000000000000000000000000000000000000000000000
00000000000000000000000000000000000000 description "my-LUN"
```

**Related Commands**

- fc srp itl
- show fc srp initiator
- show interface fc
- show fc srp-global
- show fc srp lu

# fc srp target

To configure targets, enter the **fc srp target** command in global configuration mode. To delete a target from the running configuration, use the **no** form of this command.

**fc srp target** *wwpn* {**description** *desc* | **ioc-guid** *guid*}

**no fc srp target** *wwpn* [**description** | **service-name**]

## Syntax Description

| | |
|---|---|
| *wwpn* | World-wide port name (WWPN) of the target port. |
| **description** | (Optional) Applies a text description to the target port. |
| *desc* | Description to apply to the target port. |
| **ioc-guid** | Manually assigns an I/O Controller (IOC) to the target. |
| *guid* | GUID of the IOC to assign to the target. |
| **service-name** | (Optional) Configures the service name of the target to an empty string. |

## Defaults

The service name serves as the default target name.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level:

Unrestricted read-write user or Fibre Channel read-write user.

Use the **fc srp target** command to configure target attributes.

We recommend that you allow your gateway cards to detect targets. We recommend that you let your gateway card(s) detect targets. A gateway card automatically creates FC-SRP target entries when it discovers targets.

## Examples

The following example assigns a name to identify the target easily:

```
SFS-3012R(config)# fc srp target 21:00:00:04:cf:75:6b:3b description jumbalya
```

## Related Commands

fc srp itl
show interface fc
show fc srp initiator

# fc srp-global gateway-portmask-policy restricted

To deny new initiators port access to FC gateway ports, enter the **fc srp-global gateway-portmask-policy restricted** command in global configuration mode. To grant port access to new initiators, enter the **no** form of this command.

**fc srp-global gateway-portmask-policy restricted**

**no fc srp-global gateway-portmask-policy restricted**

## Syntax Description

This command has no arguments or keywords.

## Defaults

Restricted

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

Apply the default policy to new ITs and ITLs to restrict access so new SRP initiators do not use the Fibre Channel gateway or see the Fibre Channel fabric. If you do not restrict access, new SRP initiators can communicate through the FC gateway ports. You can modify access policies on an individual basis with the **fc srp itl** command.

**Note** Policies only apply to ITs and ITLs that you create after you configure the policies.

## Examples

The following example denies port access to all new ITLs:

```
SFS-3012R(config)# fc srp-global gateway-portmask-policy restricted
```

## Related Commands

show fc srp initiator
show interface fc

# fc srp-global itl

To configure the default attributes that your server switch assigns to all new ITLs, enter the **fc srp-global itl** command in global configuration mode. To configure any attribute to an empty string or disable an attribute, use the **no** form of this command.

**fc srp-global itl** [**sequential**] {**dynamic-gateway-port-failover** | **dynamic-gateway-port-loadbalancing** | **dynamic-path-affinity** | **io-hi-mark** *mark* | **max-retry** *retry* | **min-io-timeout** *timeout*}

**no fc srp-global itl** [**sequential**] {**dynamic-gateway-port-failover** | **dynamic-gateway-port-loadbalancing** | **dynamic-path-affinity** | **io-hi-mark** | **max-retry** | **min-io-timeout**}

## Syntax Description

| | |
|---|---|
| **sequential** | (Optional) Configures SRP global defaults for ITLs of sequential access devices. |
| **dynamic-gateway-port-failover** | The **fc srp-global itl** command no longer supports this syntax. This syntax appears for legacy purposes. |
| **dynamic-gateway-port-loadbalancing** | The **fc srp-global itl** command no longer supports this syntax. This syntax appears for legacy purposes. |
| **dynamic-path-affinity** | The **fc srp-global itl** command no longer supports this syntax. This syntax appears for legacy purposes. |
| **io-hi-mark** | Assigns the maximum number of I/O requests that the initiator can send to the storage device. |
| *mark* | Maximum number of requests that the initiator can send to the storage device. |
| **max-retry** | Assigns the maximum number of consecutive, failed attempts to pass traffic to a LUN that the initiator makes before it identifies the LUN as inaccessible. |
| *retry* | Number of retries before an initiator recognizes a LUN as inaccessible. |
| **min-io-timeout** | Configures the maximum amount of time during which the storage device can accept I/O. |
| *timeout* | Maximum amount of time during which a storage device can accept I/O. |

## Defaults

By default, the **fc srp-global itl** command configures ITLs for random (non-sequential) targets. For additional default values, see Table 3-6 on page 3-88.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

Table 3-6 provides usage guidelines for this command.

*Table 3-6 Usage Guidelines for fc srp-global itl Command Arguments*

| Policy | Description |
|---|---|
| **sequential** | (Optional) Configures SRP global defaults for LUs of sequential access devices. Without this keyword, the configuration will be for the global defaults for LUs of random access devices. |
| **dynamic-gateway-port-failover** | SRP global defaults for LUs of random/sequential access devices.<br>Default for random devices: false<br>Default for sequential devices: true<br>This value is applied to LU entries as their default setting at entry creation time. You can overwrite the value on LU basis later.<br>Allows the controller to select an alternate gateway interface port if the primary path fails. Enter the **fc srp-global itl** command with this keyword to enable this feature. Otherwise, include the **no** keyword at the beginning of the command string to disable this feature. If you enable this policy, you implicitly disable port load balancing and dynamic path affinity. |
| **dynamic-gateway-port-loadbalancing** | SRP global defaults for LUs of random/sequential access devices.<br>Default for random devices: true<br>Default for sequential devices: false<br>This value is applied to LU entries as their default setting at entry creation time. You can overwrite the value on LU basis later.<br>Allows data to be sent between the initiator and Fibre Channel target using all available ports on the gateway interface. Port selection relies upon comparative I/O traffic. The controller attempts to distribute traffic equally between the ports. Enter the **fc srp-global itl** command with this keyword to enable this feature. Otherwise, include the **no** keyword at the beginning of the command string to disable this feature. If you enable this policy, you implicitly disable port failover and dynamic path affinity. |

*Table 3-6 Usage Guidelines for fc srp-global itl Command Arguments (continued)*

| Policy | Description |
|---|---|
| **dynamic-path-affinity** | SRP global defaults for LUs of random/sequential access devices.<br>Default for random devices: false<br>Default for sequential devices: false<br>This value is applied to LU entries as their default setting at entry creation time. You can overwrite the value on LU basis later.<br>Allows the system to maintain a preference for a specific path. If the number of outstanding I/Os becomes excessive, or the path fails, the gateway uses an alternate path. When enabled, the gateway uses the current path until the path condition changes.<br>**Note** Frequent switching degrades performance.<br>Enter the **fc srp-global itl** command with this keyword to enable this feature. Otherwise, include the **no** keyword at the beginning of the command string to disable this feature. If you enable this policy, you implicitly disable port failover and port load balancing. |
| **io-hi-mark** *mark* | SRP global defaults for LUs of random/sequential access devices.<br>Default for random devices: 16<br>Default for sequential devices: 1<br>This value is applied to LU entries as their default setting at entry creation time. You can overwrite the value on LU basis later.<br>Sets the maximum number of I/O requests that can be sent per logical unit. The value, an integer, must fall between 1 and 256. The hi mark defaults to 16. Enter the **fc srp-global itl** command with this keyword and the desired io-hi-mark value to set this feature. |

*Table 3-6 Usage Guidelines for fc srp-global itl Command Arguments (continued)*

| Policy | Description |
|---|---|
| **max-retry** *retry* | SRP global defaults for LUs of random/sequential access devices.<br>Default for random devices: 5<br>Default for sequential devices: 1<br>This value is applied to LU entries as their default setting at entry creation time. You can overwrite the value on LU basis later.<br>Number of times the same I/O request can be sent to a logical unit. Increase the value if heavy traffic runs, or increase the min-io-timeout value. The value, an integer, must fall between 1 and 100. The retry value defaults to 5. Enter the **fc srp-global itl** command with this keyword and the desired max-retry value to set this feature. |
| **min-io-timeout** *timeout* | SRP global defaults for LUs of random/sequential access devices.<br>Default for random devices: 10<br>Default for sequential devices: 60<br>This value is applied to LU entries as their default setting at entry creation time. You can overwrite the value on LU basis later.<br>Maximum amount of time allowed for I/O traffic to be accepted by a logical unit. Increase this value (or increase the max-retry value) if you use a known slow connection. The value, an integer, must fall between 1 and 1800. The timeout defaults to 10 seconds. |

## Examples

The following example sets the I/O high mark of the ITL to 32:

```
SFS-3012R(config)# fc srp itl 00:05:ad:00:00:01:29:c5 00:00:00:00:00:00:00:00
21:00:00:04:cf:f6:c2:ab 00:00:00:00:00:00:00:00 io-hi-mark 32
```

## Related Commands

show interface fc
show fc srp-global

# fc srp-global lun-policy restricted

Enable LUN masking on all new ITs and ITLs, with the **fc srp-global lun-policy restricted** command in global configuration mode. Disable default LUN masking with the **no** form of the command.

**fc srp-global lun-policy restricted**

**no fc srp-global lun-policy restricted**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user or Fibre Channel read-write user.

Enable global LUN masking to deny LUN access to new initiators so that they cannot communicate with SAN nodes until you grant them access on an individual basis. Disable LUN masking to grant new ITLs immediate access to all LUNs.

**Note** An initiator requires both port and LUN access before it can successfully access a LUN. To grant port access, use the **fc srp-global gateway-portmask-policy restricted**, **fc srp it** and **fc srp itl** commands.

**Note** Policies only apply to ITs and ITLs that you create after you configure the policies.

## Examples

The following example denies all new initiators access to all LUNs:

```
SFS-3012R(config)# fc srp-global lun-policy restricted
```

## Defaults

Restricted.

## Related Commands

**authentication**
**radius-server**
**fc srp it**
**fc srp itl**
**fc srp-global gateway-portmask-policy restricted**
**show fc srp-global**

# ftp-server enable

To enable the FTP server on your server switch, enter the **ftp-server enable** command in global configuration mode. To disable this feature, use the **no** form of this command.

**ftp-server enable**

**no ftp-server enable**

## Syntax Description

This command has no arguments or keywords.

## Defaults

By default, FTP server is disabled.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

All users.

The FTP server feature provides read-only access to the file systems on the server switch and complements the **copy** command. Use a FTP client on a management workstation to connect to the server using FTP protocol. You can download log files, configuration files or image files.

## Examples

The following example disables FTP services on the server switch:

```
SFS-7000P(config)# no ftp-server enable
```

## Related Commands

**show system-services**
**copy**
**telnet**

# gateway

To assign a default IP gateway to

- the Ethernet Management port,
- the virtual in-band InfiniBand port,

enter the **gateway** command in the appropriate interface configuration mode. To disassociate a port from a gateway, use the **no** form of this command.

**gateway** *gateway*

**no gateway**

## Syntax Description

| | |
|---|---|
| *gateway* | IP address of the gateway to assign to the port. |

## Defaults

The gateway address defaults to 0.0.0.0.

## Command Modes

Ethernet management interface configuration (config-if-mgmt-ethernet) submode, InfiniBand Management interface configuration (config-if-mgmt-ib) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

The gateway that you assign connects the port to the InfiniBand backplane on your server switch. Enter the IP address of the gateway when you configure the management interfaces.

## Examples

The following example assigns a default IP gateway to the Ethernet Management interface:

```
SFS-7000P(config-if-mgmt-ethernet)# gateway 10.3.0.94
```

The following example assigns a default IP gateway to the InfiniBand Management interface:

```
SFS-7000P(config-if-mgmt-ib)# gateway 10.3.0.2
```

## Related Commands

**show interface mgmt-ethernet**
**show interface mgmt-ib**
**snmp-server**

# half-duplex

To configure an Ethernet connection in half duplex mode, enter the **half-duplex** command in Ethernet interface configuration submode. To undo this configuration, use the **no** form of this command.

**half-duplex**

**no half-duplex**

## Syntax Description

This command has no arguments or keywords.

## Defaults

Your server switch runs in full duplex mode by default.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

If you disable auto-negotiation, set speed and duplex mode with the **half-duplex** command and the **speed (Ethernet interface configuration submode)** command.

You cannot manually configure half duplex mode while auto-negotiation runs on your server switch or while the connection speed exceeds 1000 Mbps.

**Note** The 6-port Ethernet gateway does not support half duplex transmission or 10 Mbps speed.

## Examples

The example below configures half duplex mode for ports 1 - 4 on slot 4:

```
SFS-3012R(config-if-ether-4/1-4/4)# half-duplex
```

## Related Commands

**auto-negotiate (Ethernet interface configuration submode)**
**show interface ethernet**
**speed (Ethernet interface configuration submode)**

# help

To view the help options that the CLI provides, enter the **help** command in any mode.

**help**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

All modes.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

All users.

This command may be executed in any mode. It provides the methods for you to display the various types of available help. The **help** command provides the same instructions regardless of mode.

## Examples

The following example displays help options:

```
SFS-7008P(config-if-ib-16/1-16/12)# help
Help may be requested at any point in a command by entering
a question mark '?'. If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)
SFS-7000P360(config-if-ib-16/1-16/12)#
```

# history

To display a list of the commands that you executed during your CLI session, enter the **history** command in any mode.

**history**

## Syntax Description

This command has no arguments or keywords.

## Defaults

The **history** command stores the last 40 commands that you entered.

## Command Modes

All modes.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

All users.

The format of the history output and a configuration file are similar. You can cut and paste the contents of the history output to a text file and, with minor editing, use it as a configuration file.

This global command may be executed in any mode. To display just one screen of history data at a time, configure the terminal display length.

## Examples

The following example displays the recent command history:

```
SFS-7000P(config)# history
  1 history
  2 enable
  3 config
  4 arp
  5 boot-conf
  6 boot-config
  7 diagn
  8 interface ib all
  9 exit
  10 interface ethernet all
  11 ip
  12 history
SFS-7000P(config)#
```

## Related Commands

**terminal**

# hostname

To assign a hostname to your server switch, enter the **hostname** command in global configuration mode.

**hostname** *name*

## Syntax Description

| | |
|---|---|
| *name* | Name to assign to the system. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

When you enter the **hostname** command, you apply the new name to the following three areas:

- Server switch version information
- CLI prompt

After you configure the host name, the name that you assigned appears in the **show version** command output. When you change modes, the new host name will appear in the CLI prompt.

## Examples

Note the change in the CLI prompt that occurs in the last line of example output:

```
SFS-7000P(config)# hostname samplename
SFS-7000P(config)# exit
samplename#
```

## Related Commands

**ping**
**show version**

# ib pm

To configure performance monitoring, enter the **ib pm** command in global configuration mode.

**ib pm subnet-prefix** *prefix* {**connection** {**monitor** | **reset-counter** | **test**} **src-lid** *source-LID* **dst-lid** *destination-LID* | **polling-period** *seconds* | **port** {**counter** | **monitor node-guid** *GUID* **port-num** *num* | **reset-counter** [**node-guid** *GUID* [**port-num** *num*]]}| **start-delay** *delay* | **state** {**disable** | **enable** | **enable-topspin-switches** | **enable-all**}| **threshold** {**excess-buf-overruns** | **link-downs** | **link-recovery-errors** | **local-link-errors** | **rcv-constrnt-errors** | **rcv-errors** | **rcv-rate** | **rcv-rem-phy-errors** | **rcv-sw-relay-errors** | **symbol-errors** | **vl15-droppeds** | **xmit-constrnt-errors** | **xmit-discards** | **xmit-rate**} *int*}

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the IB subnet on which you want to configure performance monitoring. |
| *prefix* | Subnet prefix of the IB subnet on which you want to configure performance monitoring |
| **connection** | Specifies a connection-level action. Designates a connection that you want to monitor, reset, or test. You specify the connection with the **src-lid** and **dst-lid** arguments. |
| **monitor** | Configures monitoring of the port or connection. |
| **reset-counter** | Resets the performance monitoring counter(s). |
| **test** | Starts a connection test. |
| **src-lid** | Specifies the source Local Identifier (LID) of the connection. |
| *source-LID* | Source Local Identifier (LID) of the connection. |
| **dst-lid** | Specifies the destination Local Identifier (LID) of the connection. |
| *destination-LID* | Destination Local Identifier (LID) of the connection. |
| **polling-period** | Interval at which monitoring polls occur. |
| *seconds* | Interval at which monitoring polls occur, in seconds. |
| **port** | Specifies a port-level action. Designates a port you want to monitor or reset. Specify the port with the **node-guid** and **port-num** arguments. |
| **counter** | Enables the IB PM port counter feature. |
| **monitor node-guid** | (Optional) Specifies the GUID of the node that contains the port that you want to monitor. |
| *GUID* | (Optional) GUID of the node that contains the port that you want to monitor. |
| **port-num** | (Optional) Specifies the port number to monitor. |
| *num* | (Optional) Port number to monitor. |
| **start-delay** | Delay time before performance monitoring starts after being enabled. |
| *delay* | Delay time before starting performance monitoring, in seconds. |
| **state** | Configures the state of performance monitoring. |
| **disable** | Disables monitoring. |
| **enable** | Enables monitoring. |
| **enable-topspin-switches** | Enables monitoring on all server switches in the subnet. |
| **enable-all** | Enables monitoring on all ports in the subnet. |

| | |
|---|---|
| **threshold** | Configures threshold values. |
| **excess-buf-overruns** | Configures the threshold for the number of “excess buffer overrun” errors. |
| **link-downs** | Configures the threshold for the number of “link down” errors. |
| **link-recovery-errors** | Configures the threshold for the number of “link recovery” errors. |
| **local-link-errors** | Configures the threshold for the number of “local link integrity” errors. |
| **rcv-constrnt-errors** | Configures the threshold for the number of “receive constraint” errors. |
| **rcv-errors** | Configures the threshold for the number of “receive” errors. |
| **rcv-rate** | Configures receive rate thresholds. |
| **rcv-rem-phy-errors** | Configures the threshold for the number of “receive remote physical” errors. |
| **rcv-sw-relay-errors** | Configures the threshold for the number of “receive remote relay” errors. |
| **symbol-errors** | Configures the threshold for the number of “symbol” errors. |
| **vl15-droppeds** | Configures the threshold for the number of “vl15 dropped” events. |
| **xmit-constrnt-errors** | Configures the threshold for the number of “transmit constraint” errors. |
| **xmit-discards** | Configures the threshold for the number of “transmit discard” errors. |
| **xmit-rate** | Configures transmit rate thresholds. |
| *int* | Threshold value (integer). |

## Defaults

Performance monitoring is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

InfiniBand read-write access

Use performance manager to do the following:

- View IB port counters.
- Test connectivity between two IB ports (test a connection).
- Monitor any/all IB ports for errors, generating SNMP traps and log messages when user-defined thresholds are exceeded.

To monitor IB ports for errors, follow these steps:

- Configure error thresholds.
- (Optional) Configure specific ports and/or connections to monitor.
- (Optional) Configure new start-delay and/or polling-period values.

- Start performance monitoring.
- Either use the **show ib pm** command to check for errors or wait for SNMP traps or log messages to be generated by your server switch.

## Examples

The following example configures a symbol-errors threshold of 3:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 threshold symbol-errors 3
```

The following example configures a link-downs threshold of 1:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 threshold link-downs 1
```

The following example configures a polling period of 60 seconds:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 polling-period 60
```

The following example configures a start delay of 0 seconds:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 start-delay 0
```

The following example starts performance monitoring on all IB ports:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 state enable-all
```

The following example stops performance monitoring:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 state disable
```

The following example starts performance monitoring on only the specific connections and ports configured by the user:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 state enable
```

The following example configures a specific connection from LID 3 to LID 7 to monitor:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 connection monitor src-lid
3 dst-lid 7
```

The following example configures a specific port to monitor:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 port monitor node-guid
00:05:ad:00:00:01:34:e0 port-num 3
```

The following example resets the counters on all ports:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 port reset-counter
```

The following example resets the counters on a specific port:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 port reset-counter
node-guid 00:05:ad:00:00:01:34:e0 port-num 3
```

The following example resets the counters on all ports on the connection from LID 3 to LID 7:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 connection reset-counter
src-lid 3 dst-lid 7
```

The following example initiates a connection test from LID 3 to LID 7:

```
SFS-7000P(config)# ib pm subnet-prefix fe:80:00:00:00:00:00:00 connection test src-lid 3
dst-lid 7
```

## Related Commands

**show ib pm config**
**show ib pm connection counter**
**show ib pm connection monitor**
**show ib pm port counter**
**show ib pm port monitor**
**show ib pm threshold**

# ib sm

To administer the subnet manager (SM) on your server switch for everything except multicast, and to create and populate partitions, enter the **ib sm** command in global configuration mode. To undo configurations and partitions, use the **no** form of this command. Enter this command without arguments to add a subnet manager with default values.

**ib sm subnet-prefix** *prefix* [**p_key** *pkey* [**partition-member** *node-guid port-num* {**full-member** | **limited-member**} | *limited-member*] [**ipoib** {**enable** | **disable**}] | **priority** *sm-priority* [**sm-key** *key* | **lid-mask-control** *lmc*] | **sm-key** *key* | **sweep-interval** *interval* | **lid-mask-control** *lmc* | **master-poll-intval** *mp-interval* | **master-poll-retries** *retries* | **max-active-sms** *SMs* | **ca-link-hoqlife** *life* | **sw-link-hoqlife** *life* | **switch-life-time** *life* | **max-hops** *integer* | **mad-retries** *retries* | **node-timeout** *seconds* | **response-timeout** *milliseconds* | **wait-report-response** {**true** | **false**} | **sa-mad-queue-depth** *size* | **route-around** {**chassis-guid** *guid* | **node-guid** *guid* [**port-num** *port*]}]

**no ib sm subnet-prefix** *prefix* [**p_key** *pkey* [**partition-member** *node-guid port*] | **priority** | **response-timeout** | **sweep-interval** | **lid-mask-control** | **master-poll-intval** | **master-poll-retries** | **max-active-sms** | **route-around** {**chassis-guid** *guid* | **node-guid** *guid* [**port-num** *port*]}]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager. |
| *prefix* | Subnet prefix of the subnet manager. You can enter any prefix, but we recommend that you enter **fe:80:00:00:00:00:00:00** to indicate a locally administered subnet. |
| **p_key** | (Optional) Creates a partition and optionally assigns members to the partition, or assigns a partition key to a multicast group.<br>**Note** With database sync enabled on all chassis, only the chassis running the master SM will accept partition configuration from the user. |
| *pkey* | (Optional) Partition identifier, in *##:##* format. |
| **partition-member** | (Optional) Specifies a node GUID for the partition member. |
| *node-guid* | (Optional) Node GUID of the partition member. |
| *port-num* | (Optional) Port number of the partition-member. |
| **full-member** | (Optional) Specifies full partition membership. |
| **limited-member** | (Optional) Specifies limited partition membership. |
| **ipoib** | (Optional) Specifies whether or not IPoIB is enabled for the partition. Disabling IPoIB disables all current multicast joins for the specified partition and prevents all future multicast joins for the specified partition. This value defaults to **enable**. |
| **enable** | (Optional) Enables IPoIB for the partition. |
| **disable** | (Optional) Disables IPoIB for the partition. Enabled is the default. |
| **priority** | (Optional) Assigns a priority level to the subnet manager. |
| *sm-priority* | (Optional) Integer value that represents the subnet manager priority level. The higher the integer, the higher the priority. |
| **sm-key** | (Optional) Assigns a subnet management key to a new subnet manager. |
| *key* | (Optional) 64-bit subnet management key. |

| | |
|---|---|
| **lid-mask-control** | (Optional) Assigns the number of path bits present in the base LID to each channel adapter port. Increasing the LMC value increases the number of LIDs assigned to each port to increase the number of potential paths to reach each port. This value defaults to 0. |
| *lmc* | (Optional) Number of path bits. |
| **sweep-interval** | (Optional) Specifies how frequently the SM queries the InfiniBand fabric for network changes. |
| *interval* | (Optional) Frequency, in seconds, at which the SM queries the InfiniBand fabric for network changes. |
| **master-poll-intval** | (Optional) Specifies the interval at which the slave SM polls the master to see if it still runs. |
| *mp-interval* | (Optional) Poll interval, in seconds. This value defaults to 3 seconds. |
| **master-poll-retries** | (Optional) Specifies the number of unanswered polls that cause the slave to identify the master as dead. |
| *retries* | (Optional) Number of unanswered polls (integer). This value defaults to 2. |
| **max-active-sms** | (Optional) Specifies the maximum number of standby SMs that the master supports. This value defaults to 0, which indicates unlimited SMs. |
| *SMs* | (Optional) Number of standby SMs that the master supports (integer). |
| **ca-link-hoqlife** | (Optional) Specifies the lifetime of a packet at the head-of-queue of a host port. |
| **sw-link-hoqlife** | (Optional) Specifies the packet lifetime at the head-of-queue of a switch port. |
| **switch-life-time** | (Optional) Specifies the packet lifetime inside a server switch. |
| *life* | (Optional) lifetime interval (0 - 20). The interval is a function of microseconds. |
| **max-hops** | (Optional) Configure maximum length path for SM to examine for routing. |
| *integer* | (Optional) Specifies the number of hops. Range is from 0 to 64. Default is 64. A value of 0 causes SM to calculate and use the lowest possible value that will still ensure connectivity between all endpoints.<br>**Note** Selecting any nondefault value restricts the length of paths used by SM. The SM might therefore select paths that are optimal for distance, but not for other factors, such as link capacity. |
| **mad-retries** | (Optional) Specifies the number of times the SM will retry sending a MAD after not receiving a response. |
| *retries* | (Optional) The number of times the SM will retry sending a MAD after not receiving a response. The value range is 0 - 100; the default value is 5. |
| **node-timeout** | (Optional) Specifies the minimum amount of time in seconds that a HCA can be unresponsive before the SM will remove it from the IB fabric. |
| *seconds* | (Optional) The amount of time in seconds that a HCA can be unresponsive before the SM will remove it from the IB fabric. The value range is 1 - 2000 seconds; the default value is 10 seconds. |
| **response-timeout** | (Optional) Specifies the maximum amount of time in milliseconds that the SM waits for a response before resending a MAD. |
| *milliseconds* | (Optional) Maximum amount of time in milliseconds that the SM waits for a response before resending a MAD. The value range is 100-5000 milliseconds; the default value is 200 milliseconds. |

| | |
|---|---|
| **wait-report-response** | (Optional) Determines whether SM waits to receive ReportResponse MADs. Default is false. |
| **true** | (Optional) SM continues to send Report MADs until either the ReportResponse MAD is received or the maximum number of Report MADs are sent. |
| **false** | (Optional) SM sends Report MADs once. |
| **sa-mad-queue-depth** | (Optional) Specifies the size of the SA's internal queue for receiving MADs. |
| *size* | (Optional) Size of the SA's internal queue for receiving MADs. The value range is 256 - 1024; the default value is 256. |
| **route-around** | (Optional) Excludes a switch chassis, switch node, or port from consideration during route calculations. |
| **chassis-guid** | (Optional) Excludes a chassis from consideration during route calculations. |
| *guid* | (Optional) Identifies by GUID a chassis to be excluded from route calculations. |
| **node-guid** | (Optional) Excludes a node from route calculations or, with the **port-num** parameter, excludes a port from route calculations. |
| *guid* | (Optional) Identifies by GUID the node to be excluded form route calculations. |
| **port-num** | (Optional) Excludes a port from route calculations. |
| *port* | (Optional) Identifies by port number the port to be excluded from route calculations. |

## Defaults

*Table 3-7 ib sm Command Defaults*

| Variable | Default |
|---|---|
| sm-key | 00:00:00:00:00:00:00:00 |
| IPoIB | enabled |
| priority | 10 |
| sweep-interval | 10 seconds |
| max-hops | 64 |
| mad-retries | 5 |
| node-timeout | 10 |
| response-timeout | 200 microseconds |
| wait-report-response | false |
| sa-mad-queue-depth | 256 |

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

The subnet manager:

- Discovers the subnet topology and dynamically updates it at a specified sweep interval that you specify with the *interval* variable.
- Assigns the local identifiers (LIDs), global identifier (GID) subnet prefix, and partition keys for each HCA port.
- Assigns the LIDs, GID subnet prefix, and forwarding databases for each switch on the subnet.
- Maintains the end-node and service databases of the subnet, providing a GUID to LID/GID resolution service as well as a services directory.

One subnet manager administers the InfiniBand fabric. All InfiniBand hosts run on this one subnet. The subnet manager loads upon bootup.

Each node in the fabric has a subnet management agent (SMA) to shuttle communication requests between the node and the subnet manager. Communication between the subnet manager and the subnet management agent uses the common management datagram (MAD) message structure.

Multicast, partition, and route-around configuration settings are synchronized between master and standby SMs. If other settings are changed, they must be manually configured at the standby SMs as well.

If, in the future, there is a change in the location of standby SMs, run the command **show config** to list all of the configuration changes previously made at the master SM. Then replay the configuration changes at the new standby SMs.

**Regarding Partitions:**

Partitions are created, and then ports are added to those partitions to enforce isolation.

**Route-around Considerations**

The route-around feature allows specific chassis, nodes, or ports to be excluded from consideration during routing calculations. Uses of this feature include the following:

- Isolating ports that have accumulated errors to avoid a potential job failure. The route-around feature enables you to stop traffic from passing over a link while a job is still running, without disrupting the job.
- Isolating a specific component, such as an InfiniBand switch card, allowing that component to be removed without the potential for job failure. You might do this, for example, before component upgrade or other replacement.

**Caution** The route-around feature has the potential to exclude any chassis, node, or port from routing calculations to the extent that it is possible to disable entirely a connection between a pair of endpoints. Use care to avoid segmenting the InfiniBand fabric when using this feature.

## Examples

The following example defines a subnet manager, or redefines the existing subnet manager, with the specified priority, sm-key, response-timeout, and sweep-interval configurations:

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 priority 10 sm-key
00:00:00:00:00:00:00:00 response-timeout 2000 sweep-interval 10
```

The following example removes a specified subnet manager:

```
SFS-7000P(config)# no ib sm subnet-prefix fe:80:00:00:00:00:00:00
```

The following example resets the response-timeout value for the specified subnet manager back to its default value:

```
SFS-7000P(config)# no ib sm subnet-prefix fe:80:00:00:00:00:00:00 response-timeout
```

The following example creates a partition and adds a member:

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 p_key 00:02
partition-member 00:00:2c:90:01:1a:c8:00 3 full-member
```

The following example disables the IPoIB multicast groups on the specified partition:

```
SFS-7000D(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 p_key 00:02 ipoib disable
```

The following example excludes port 5 on a specified node from consideration during route calculations:

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 route-around node-guid
00:00:2c:90:01:1a:c8:00 port-num 5
```

## Related Commands

**ib-agent**
**ib sm multicast ipoib**
**ib sm multicast mgid**
**ib sm db-sync**
**show ib sm configuration**
**show ib sm route-around**

# ib sm db-sync

To configure the database synchronize feature between the master subnet manager and one or more standby (slave) subnet managers, enter the **ib sm db-sync** command in global configuration mode. To disable database synchronization features, use the **no** form of this command.

**Note** With database sync enabled on all chassis, only the chassis running the master SM will accept partition configuration from the user.

**ib sm db-sync subnet-prefix** *prefix* {**enable** | **max-backup-sms** *max* | **session-timeout** *timeout* | **poll-interval** *interval* | **cold-sync-timeout** *cs-timeout* | **cold-sync-limit** *cs-limit* | **cold-sync-period** *cs-period* | **new-session-delay** *delay* | **resync-interval** *resync*}

**no ib sm db-sync subnet-prefix prefix** {**enable** | **max-backup-sms** | **session-timeout** | **poll-interval** | **cold-sync-timeout** | **cold-sync-limit** | **cold-sync-period** | **new-session-delay** | **resync-interval**}

## Syntax Description

| | |
|---|---|
| **subnet prefix** | Specifies the subnet prefix of the IB subnet on which you want to configure database synchronization. |
| *prefix* | Subnet prefix of the IB subnet on which you want to configure database synchronization. |
| **enable** | Enables database synchronization on your IB fabric. |
| **max-backup-sms** | Specifies the maximum number of backup subnet managers that will synchronize with the master SM.<br>**Note** Although we offer this configuration option, the master SM currently only supports one standby. |
| *max* | Maximum number of backup subnet managers that will synchronize with the master SM. This value defaults to 1. |
| **session-timeout** | Specifies the interval, in seconds, during which a synchronization session status MAD packet must arrive at the master SM to maintain synchronization. This value should be greater than the poll-interval value. |
| *timeout* | Timeout interval, in seconds. This value defaults to 10 seconds. |
| **poll-interval** | Interval at which the master SM polls an active slave SM to verify synchronization. |
| *interval* | Poll interval, in seconds. This value defaults to 3 seconds. |
| **cold-sync-timeout** | Allots a maximum amount of time in which to perform a cold sync. During the cold sync, the master SM copies all out-of-sync tables to the standby. |
| *cs-timeout* | Cold sync interval, in seconds. This value defaults to 10 seconds. |
| **cold-sync-limit** | Specifies the maximum number of cold syncs that can take place during the cold sync period. This value defaults to 2. |
| *cs-limit* | Maximum number of cold syncs per cold sync period (integer). |
| **cold-sync-period** | Specifies the length of the interval during which cold syncs can occur. |
| *cs-period* | Duration, in seconds, of the cold sync period. This value defaults to 900 seconds. |

| | |
|---|---|
| **new-session-delay** | Specifies the amount of time that the master SM waits before it attempts to initiate a synchronization session with a new SM. |
| *delay* | Delay length, in seconds. This value defaults to 120 seconds. |
| **resync-interval** | Specifies the interval at which the master SM sends a resynchronization request to all active sync sessions. |
| *resync* | Resynchronization interval, in seconds. This value defaults to 3600 seconds. |

## Defaults

Databases synchronize by default. Use the **disable** keyword to prevent synchronizing SM databases. For attribute-specific defaults, refer to the syntax description.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-write access

Synchronize the database of the master subnet manager with one or more standby subnet managers to retain all database information in the event of a failover.

**Note** If you make configuration changes to the master SM and then save the configuration, verify that the master and backup have synchronized, then save the configuration on the backup as well.

## Examples

The following example enables database synchronization on the IB fabric:

```
SFS-7000P(config)# ib sm db-sync subnet-prefix fe:80:00:00:00:00:00:00 enable
```

## Related Commands

show ib sm db-sync

# ib sm multicast ipoib

To create or configure an IPoIB broadcast multicast group for a specific partition, enter the **ib sm multicast ipoib** command in global configuration mode. To undo IPoIB broadcast multicast configurations, use the **no** form of this command.

If the multicast group already exists and was not user configured, you can use the **ib sm multicast ipoib** command to overwrite the configuration to become user configured, on condition that any options you specify do not conflict with those already present in the multicast group.

**ib sm subnet-prefix** *prefix* **multicast ipoib p_key** *pkey* [**mtu** *MTU-value*] [**q_key** *qkey*] [**rate** *GBPS*] [**scope** {**link-local** | **site-local** | **org-local** | **global**}] [**sl** *service-level*]

**no ib sm subnet-prefix** *prefix* **multicast ipoib p_key** *pkey* [**scope** {**link-local** | **site-local** | **org-local** | **global**}]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager. |
| *prefix* | Subnet prefix for the subnet manager, for example fe:80:00:00:00:00:00:00. |
| **multicast** | Creates a multicast group. |
| **ipoib** | Creates an IPoIB broadcast multicast group. |
| **p_key** | Specifies a partition |
| *pkey* | Identifies a partition in ##:## format. |
| **mtu** | (Optional) Specifies the maximum transmission unit of the multicast group. |
| *MTU-value* | (Optional) Maximum transmission unit of the multicast group. |
| **q_key** | (Optional) Specifies the queue key of the multicast group. |
| *qkey* | (Optional) Queue key of the multicast group. |
| **rate** | (Optional) Specifies the data rate of the multicast group, in Gbps. |
| *GBPS* | (Optional) Data rate of the multicast group, in Gbps. |
| **scope** | (Optional) Specifies the scope of the broadcast multicast group. |
| **link-local** | (Optional) Applies a link-local scope to the broadcast multicast group. |
| **site-local** | (Optional) Applies a site-local scope to the broadcast multicast group. |
| **org-local** | (Optional) Applies a org-local scope to the broadcast multicast group. |
| **global** | (Optional) Applies a global scope to the broadcast multicast group. |
| **sl** | (Optional) Specifies the service level of the multicast group. |
| *service-level* | (Optional) Service level of the multicast group. Range is 0 through 15. |

## Defaults

There are no defaults for this command.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

## Examples

The following example creates an IPoIB broadcast multicast group:

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 multicast ipoib p_key 99:99
```

## Related Commands

**ib sm multicast mgid**
**ib sm**
**show ib sm configuration**
**show ib sm multicast**

# ib sm multicast mgid

To create or configure non-IPoIB multicast groups, enter the **ib sm multicast mgid** command in global configuration mode. To undo non-IPoIB or IPoIB multicast configurations, use the **no** form of this command.

**ib sm subnet-prefix** *prefix* **multicast mgid** *GID-address* [**mtu** *MTU-value*] [**p_key** *pkey*] [**q_key** *qkey*] [**rate** *GBPS*] [**sl** *service-level*]

**no ib sm subnet-prefix** *prefix* **multicast mgid** *GID-address*

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager. |
| *prefix* | Subnet prefix for the subnet manager, for example fe:80:00:00:00:00:00:00. |
| **multicast** | Creates a multicast group. |
| **mgid** | Specifies the global ID of the non-IPoIB multicast group. |
| *GID-address* | Global ID of the multicast group. |
| **mtu** | (Optional) Specifies the maximum transmission unit of the multicast group. |
| *MTU-value* | (Optional) Maximum transmission unit of the multicast group. |
| **p_key** | (Optional) Specifies a partition |
| *pkey* | (Optional) Identifies a partition in ##:## format. |
| **q_key** | (Optional) Specifies the queue key of the multicast group. |
| *qkey* | (Optional) Queue key of the multicast group. |
| **rate** | (Optional) Specifies the data rate of the multicast group, in Gbps. |
| *GBPS* | (Optional) Data rate of the multicast group, in Gbps. |
| **sl** | (Optional) Specifies the service level of the multicast group. |
| *service-level* | (Optional) Service level of the multicast group. Range is 0 through 15. |

## Defaults

There are no defaults for this command.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

## Examples

The following example creates a non-IPoIB multicast group:

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 multicast mgid
ff:02:00:00:00:00:00:00:00:00:00:00:00:01:01:01
```

## Related Commands

**ib sm multicast ipoib**
**ib sm**
**show ib sm configuration**
**show ib sm multicast**

# ib-agent

To configure subnet management agent (SMA) node strings, enter the **ib-agent** command in global configuration mode.

**ib-agent** {**channel-adapter** *HCA-port-guid* | **switch** *switch-guid*} **node-string** "string"

## Syntax Description

| | |
|---|---|
| **channel-adapter** | Specifies that you are changing the node string for an HCA. |
| *HCA-port-guid* | GUID of the HCA that you want to identify with a node string. |
| **switch** | Specifies that you are changing the node string for a switch. |
| *switch-guid* | GUID of the switch that you want to identify with a node string. |
| **node-string** | Specifies the node string description. |
| *string* | Node string description. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and InfiniBand read-write users.

The **ib-agent** command allows a user to modify the node description string displayed by the **show ib-agent** command. By specifying an IB node (either switch or HCA) inside the switch chassis, and providing a string, the user will override the description string for the given node.

**Note** This command does not affect how the node appears on the IB subnet, and the IB "NodeDescription" string is not modified by this command.

## Examples

The following example changes the node string of a channel adapter:

```
SFS-7000P(config)# ib-agent channel-adapter 00:05:ad:00:00:00:13:f7 node-string "primary
HCA"
```

The following example changes the node string of a switch:

```
SFS-7000P(config)# ib-agent switch 00:05:ad:00:00:00:13:da node-string "Switch 0, LID 2"
```

## Related Commands

- ib sm
- show ib sm configuration
- show ib-agent summary

# install

To install an image file on your server switch, enter the **install** command in privileged EXEC mode.

**install** [*slot-number*:]**image:***file*

## Syntax Description

| | |
|---|---|
| *slot-number* | (Optional) Slot of the controller card (1 on the Cisco SFS 3001, Cisco SFS 7000, and Cisco 4x InfiniBand Switch Module for IBM BladeCenter; 1 or 14 on the Cisco SFS 3012R; 11 or 12 on the Cisco SFS 7008). |
| **image** | Specifies that the file resides in the image file-system. |
| *file* | The name of the image file to install. |

Image files must reside in the image file system, and the file name must have the .img extension.

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

To run a new system image, you must follow these steps:

**Step 1** (Optional) Enter the **action** command with the **delete-inactive-images** keyword for each card in your chassis to remove old images. You will not be able to install a new image if sufficient space is not available on the cards.

**Step 2** Download an image file to your server switch. See the **copy** command at the "copy" section on page 3-51.

**Step 3** Power up all modules in your chassis.

**Step 4** Install the image file with the **install** command.

**Step 5** Use the **boot-config** command to configure your server switch to run the new system image when it boots.

**Step 6** Reboot the chassis using the **reload** command.

The **install** command places an active image on all cards with an administrative status of **up**.

To update additional cards, re-enter the **install** and **boot-config** commands after you add the cards.

**Note** When you upgrade your server switch, your configuration file persists.

## Examples

The following example installs a new image on the server switch:

```
SFS-7000P# install image:SFS-7000P-sfsOS-2.3.0-build497.img
************************** operation completed successfully
SFS-7000P#
```

**Note** If you try to install an operating system software image designed for InfinScale switch chips on a system with InfiniScale III switch chips, you will receive an error message similar to the following:

```
SFS-7000P# install image:Topspin120-TopspinOS-2.0.0-build572.img
Proceed with install? [yes(default) | no] y
****************************************
Error: This image cannot be used with the Anafa2 chip(s) installed.
SFS-7000P#
```

## Related Commands

**action**
**boot-config**
**card**
**dir**
**reload**
**show boot-config**
**show card**
**show card-inventory**
**shutdown**

# interface

To enter an interface configuration submode, enter the **interface** command in global configuration mode.

**interface {ethernet** *port* **| fc** *port* **| gateway** *port* **| ib** *port* **| mgmt-ethernet | mgmt-ib | trunk** *trunk-ID***}**

## Syntax Description

| | |
|---|---|
| **ethernet** | Enters Ethernet interface configuration submode. |
| **fc** | Enters Fibre Channel interface configuration submode. |
| **gateway** | Enters gateway interface configuration submode. |
| **ib** | Enters InfiniBand configuration submode. |
| *port* | Specifies a port or range of ports to be configured:<br>• For a single port, specify slot#/port#, for example 2/3.<br>• For multiple ports, use a comma-separated list, for example 2/3,2/5.<br>• For a range of ports specify the beginning and end of the range separated by a hyphen (-), for example 2/3-2/5.<br>• For all ports, specify **all**. |
| **mgmt-ethernet** | Enters Ethernet management interface configuration submode. |
| **mgmt-ib** | Enters InfiniBand management interface configuration submode. |
| **trunk** | Enters trunk configuration submode. |
| *trunk-ID* | Integer identifier of the trunk group to be configured, |

## Defaults

This command has no default values.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

Unrestricted read-write user.

## Examples

The following example enters Ethernet configuration submode to configure ports 11/2 through 11/4:

```
SFS-3012R (config)# interface ethernet 11/2-11-4
SFS-3012R (config-if-ether-11/2-11/4)#
```

## Related Commands

exit

# ip address (Ethernet interface configuration submode)

To assign an IP address and subnet mask or backup address to an Ethernet port, enter the **ip address** command in Ethernet interface configuration submode. To clear this configuration, use the **no** form of this command.

**Note** Layer 3 only; available to 4-port Ethernet gateways but not 6-port. This restriction applies only in Ethernet interface configuration submode.

**ip address** *primary-ip-address subnet-mask*

**no ip address** *primary-ip-address subnet-mask*

## Syntax Description

| | |
|---|---|
| *primary-ip-address* | Primary IP address to assign. |
| *subnet-mask* | Subnet mask to assign. |

## Defaults

This command has no default settings.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

- You can assign an IP address to only one port at a time.
- The maximum transmission unit dictates payload size. TCP uses the MTU to determine the maximum payload allowed for every transmission. Too great a value can overwhelm routers and result in data retransmission. Too small a value results in degraded performance because there are more headers and acknowledgements required to transmit the same amount of data.

## Examples

The following example assigns the IP address 10.3.0.24 and the subnet mask 255.255.255.0 to Ethernet card 4 port 1:

```
SFS-3012R(config-if-ether-4/1)# ip address 10.3.0.24 255.255.255.0
```

## Related Commands

**ip backup-address**
**show arp ethernet**
**show ip**

# ip address (Ethernet management interface configuration submode)

To assign an IP address to the Ethernet Management Interface port, enter the **ip address** command in Ethernet management interface submode. To clear this configuration, use the **no** form of this command.

**ip address** *ip-address subnet-mask* **[ gateway** *gateway-ip-address* **]**

**no ip**

## Syntax Description

| | |
|---|---|
| **address** | Assigns an IP address to the Ethernet management port. |
| *ip-address* | IP address to assign |
| *subnet-mask* | Subnet mask to assign. |
| **gateway** | (Optional) Assigns an IP address for the gateway configured for the management port. |
| *gateway-ip-address* | (Optional) The gateway address to assign. |

## Defaults

The Ethernet management port gateway IP address defaults to 0.0.0.0.

## Command Modes

Ethernet management interface configuration (config-if-mgmt-ethernet) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example assigns the IP address 10.3.0.24, subnet mask 255.255.255.0, and gateway IP address 172.29.230.1 to the Ethernet management port:

```
SFS-3012R(config-if-mgmt-ethernet)# ip address 172.29.231.28 255.255.255.0 gateway 
172.29.230.1
```

## Related Commands

**show interface mgmt-ethernet**

# ip address (gateway interface configuration submode)

To assign an IP address and subnet mask or backup address to a gateway interface, enter the **ip address** command in gateway interface configuration submode. To clear this configuration, use the **no** form of this command.

**Note** Layer 3 only; available to 4-port Ethernet gateways but not 6-port. This restriction applies only in Ethernet interface configuration submode.

**ip address** *primary-ip-address subnet-mask*

**no ip address** *primary-ip-address subnet-mask*

## Syntax Description

| | |
|---|---|
| *primary-ip-address* | Primary IP address to assign. |
| *subnet-mask* | Subnet mask to assign. |

## Defaults

This command has no default settings.

## Command Modes

Gateway interface configuration submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

- You can assign an IP address to only one port at a time.
- The maximum transmission unit dictates payload size. TCP uses the MTU to determine the maximum payload allowed for every transmission. Too great a value can overwhelm routers and result in data retransmission. Too small a value results in degraded performance because there are more headers and acknowledgements required to transmit the same amount of data.

## Examples

The following example assigns the IP address 10.3.0.24 and the subnet mask 255.255.255.0 to Ethernet card 4 port 1:

```
SFS-3012R(config-if-gw-8/2)# ip address 10.3.0.24 255.255.255.0
```

## Related Commands

**ip backup-address**
**show arp ethernet**
**show ip**

# ip address (InfiniBand management interface configuration submode)

To assign an IP address to the InfiniBand Management Interface port, enter the **ip address** command in InfiniBand management interface configuration submode. To clear this configuration, use the **no** form of this command.

**ip address** *ip-address subnet-mask*

**no ip**

## Syntax Description

| | |
|---|---|
| **address** | Assigns an IP address to the InfiniBand management port. |
| *ip-address* | IP address to assign |
| *subnet-mask* | Subnet mask to assign. |

## Defaults

This command has no default settings.

## Command Modes

InfiniBand management interface configuration (config-if-mgmt-ib) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example assigns the IP address 10.3.0.24 and subnet mask 255.255.255.0 to the InfiniBand management port:

```
SFS-3012R(config-if-mgmt-ib)# ip address 10.3.0.24 255.255.255.0
```

## Related Commands

**show interface mgmt-ib**

# ip backup-address

To assign a backup address to an Ethernet port, enter the **ip backup-address** command in Ethernet interface configuration submode. To clear this configuration, use the **no** form of this command.

**Note** Layer 3 only; available to 4-port Ethernet gateways but not 6-port. This restriction applies only in Ethernet interface configuration submode.

**ip backup-address** *backup-ip-address* [**priority** *address-priority*]

**no ip backup-address** *ip-address*

## Syntax Description

| | |
|---|---|
| *backup-ip-address* | Backup IP address to assign to the port. |
| **priority** | (Optional) Assigns a priority to the backup address that determines the order in which the backup address adopts the traffic of the primary address. Your server switch does not currently support this feature. |
| *address-priority* | (Optional) Priority to assign. The higher the integer value, the higher the priority. |

## Defaults

This command has no default settings.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

- You can assign an IP address to only one port at a time.
- The maximum transmission unit dictates payload size. TCP uses the MTU to determine the maximum payload allowed for every transmission. Too great a value can overwhelm routers and result in data retransmission. Too small a value results in degraded performance because there are more headers and acknowledgements required to transmit the same amount of data.

## Examples

The following example assigns the backup IP address 10.3.0.25 to Ethernet card 4 port 1:

```
SFS-3012R(config-if-ether-4/1)# ip address 10.3.0.24
```

## Related Commands

**ip address (Ethernet interface configuration submode)**
**show arp ethernet**
**show ip**

# ip domain-name

To assign a DNS name to your server switch, use the **ip domain name** command in global configuration mode. To unassign the DNS name, use the **no** form of this command.

**ip domain-name** *name-string*

**no ip domain-name**

## Syntax Description

| | |
|---|---|
| **domain-name** | Assigns a DNS name to your server switch. |
| *name-string* | Domain name to assign. |

## Defaults

By default, no DNS name is assigned.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example assigns the domain name **shasta** to the server switch:

```
SFS-3012R(config)# ip domain-name “shasta”
```

## Related Commands

**show host**
**ip name-server-one**
**ip name-server-two**

# ip http

To enable or configure HTTP and HTTPS services on your server switch, enter the **ip http** command in global configuration mode. To disable service or change a port number to the default value, use the **no** form of this command.

**ip http** {**polling** | **port** *number* | **secure-cert-common-name** {**useSysName** | **useMgmtEnetIpAddr** | **useMgmtIbIpAddr**} | **secure-port** *secure-port-number* | **secure-server** | **server**}

**no ip http** {**polling** | **port** | **secure-port** | **secure-server** | **server}**

## Syntax Description

| | |
|---|---|
| **polling** | Enables polling on the server switch. |
| **port** | Specifies the HTTP port that the HTTP server uses. Returns the port configuration to the default value (80) when you use the **no** form of the command. |
| *number* | HTTP port (integer) that the HTTP server uses. |
| **secure -cert-common-name** | Specifies where to get the common name used to generate a SSL certificate. |
| **useSysName** | Configures your server switch to use its system name (that you configure with the **hostname** command) in SSL certificates. |
| **useMgmtEnetIpAddr** | Configures your server switch to use the IP address of its Ethernet Management Port in SSL certificates. |
| **useMgmtIbIpAddr** | Configures your server switch to use the IP address of its InfiniBand Management Port in SSL certificates. |
| **secure-port** | Specifies the HTTPS port that the HTTP server uses. Returns the port configuration to the default value (443) when you use the **no** form of the command. |
| *secure-port-number* | Port number to assign for the HTTPS port. |
| **secure-server** | Enables HTTPS with Secure Sockets Layer (SSL) on your server switch. Use this keyword with the **no** form of the command to disable HTTPS. |
| **server** | Enables the HTTP server on your server switch. Use this keyword with the **no** form of the command to disable the HTTP server. |

## Defaults

The HTTP port value defaults to 80.
HTTP services on your server switch run by default.
The HTTPS port value defaults to 443.
HTTPS services on your server switch run by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-write user.

Configure the **ip http** command to run Chassis Manager. For more information, refer to the *Chassis Manager User Guide*.

## Examples

The following example enables the HTTP server on the server switch:

```
SFS-7000P(config)# ip http server
```

## Related Commands

**show ip http**
**show ip http server secure**

# ip name-server-one

To specify a primary domain name server (DNS), use the **ip name-server-one** command in global configuration mode. To remove the DNS, use the **no** form of this command.

**ip name-server-one** *server*

**no ip name-server-one**

## Syntax Description

| | |
|---|---|
| **name-server-one** | Specifies a primary domain name server (DNS). |
| *server* | IP address of the domain name server for your server switch to use. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-write user.

Assign a DNS name and servers to support network name resolution.

## Examples

The following example configures your server switch to use a primary DNS:

```
SFS-3012R(config)# ip name-server-one 10.3.103.22
```

## Related Commands

show host
ip domain-name
ip name-server-two

# ip name-server-two

To specify a secondary domain name server (DNS), use the **ip name-server-two** command in global configuration mode. to remove the secondary DNS, use the **no** form of this command.

**ip name-server-two** *server*

**no ip name-server-two**

## Syntax Description

| | |
|---|---|
| **name-server-two** | Specifies a secondary domain name server (DNS). |
| *server* | IP address of the secondary domain name server for your server switch to use. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-write user.

Assign a DNS name and servers to support network name resolution.

## Examples

The following example configures your server switch to use a secondary DNS:

```
SFS-3012R(config)# ip name-server-two 10.3.103.23
```

## Related Commands

**show host**
**ip domain-name**
**ip name-server-one**

# ip route

To define static routes to remote hosts or networks for forwarding IP packets, use the **ip route** command in global configuration mode. To clear a configured static route, use the **no** form of this command.

**ip route** *dest-address dest-subnet-mask next-hop*

**no ip route** *dest-address subnet-mask next-hop*}

## Syntax Description

| | |
|---|---|
| *dest-address* | IP address of the host or network that you want to reach. |
| *dest-subnet-mask* | Netmask used to resolve host and network addressing. The netmask can be an IP network address, a host route (for example, 255.255.255.255), or the default route (0.0.0.0). |
| *next hop* | IP address of the next hop (out of your server switch) on the way to the destination. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

Configure IP routes to hosts that reside one or more hops away from your server switch.

## Examples

The following example configures a static route on which to forward IP packets:

```
SFS-3012R(config)# ip route 192.168.3.0 255.255.255.0 10.10.1.0
```

## Related Commands

**show ip**

# iterations

To specify the number of times to run a diagnostic test on an interface, enter the **iterations** command in interface diagnostic configuration submode. If you do not specify a specific number of repetitions for a test to run, use the **stop** command.

**iterations** *repetitions*

## Syntax Description

| | |
|---|---|
| *repetitions* | Integer value for the number of times that you want a test to run. |

## Defaults

The iterations value defaults to zero, which causes the test to run until you stop it with the **stop** command.

## Command Modes

Interface diagnostic configuration submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

## Examples

The following example configures diagnostic tests to run four times and then stop:

```
SFS-3012R(config-diag-if-fc-4/1)# iterations 4
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface fc**
**show interface gateway**
**start**
**stop**
**test**

# link-trap

To configure internal and external ports to generate link-up and link-down SNMP traps when the operating status (oper-status) of the ports changes, enter the **link-trap** command in the appropriate interface configuration submode. To disable this function, use the **no** form of this command.

**link-trap**

**no link-trap**

## Syntax Description

This command has no arguments or keywords.

## Defaults

By default, ports do not generate link traps.

## Command Modes

All interface configuration submodes.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Fibre Channel read-write user, Ethernet read-write user.

Ports generate link-up traps when the oper-status of the port changes to **up** and link-down traps when the oper-status of the port changes to **down**. Trap receivers (that you define with the **snmp-server** command) receive the traps. You can then perform link validation and checking with the receivers, or configure SNMP alerts.

## Examples

The following example enables link-trap generation for Fibre Channel interface ports 1 and 2 on card 5:

```
SFS-3012R(config-if-fc-5/1-5/2)# link-trap
```

The following example enables link-trap generation for InfiniBand interface ports 1 through 5 on card 15. The resulting traps are sent to trap receivers, as defined by the **snmp-server** command:

```
SFS-3012R(config-if-ib-15/1-15/5)# link-trap
```

The following example enables link-trap generation for Ethernet interface port 1 on card 4. The resulting traps are sent to trap receivers, as defined by the **snmp-server** command:

```
SFS-3012R(config-if-ether-4/1)# link-trap
```

## Related Commands

**auto-negotiate (Ethernet interface configuration submode)**
**shutdown**
**show snmp**
**snmp-server**

# location

To assign a text-based location identifier to your server switch, enter the **location** command in global configuration mode. To reset the location to an empty string, use the **no** form of this command.

**location** "*string*"

**no location**

## Syntax Description

| | |
|---|---|
| *string* | Refers to an ASCII text string. Enclose multi-word strings within double-quotes (","). |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Use the **location** command to assign a readable identifier to your server switch. Use the location string to identify support providers, the server switch owner, the server switch itself, or the physical location of the server switch. Display the location with the **show location** command.

**Note** The **location** command configures the same parameter that the **snmp-server** command configures with the **location** and *location-string* arguments.

## Examples

The following example assigns a location to the server switch:

```
SFS-7000P(config)# location "515 Ellis Street, Mountain View, CA 94043"
```

## Related Commands

**snmp-server**
**show location**
**show version**

# logging

To identify a remote server as a server that accepts log messages from your server switch, enter the **logging** command or the **logging-server** command in global configuration mode. To remove logging settings, use the **no** form of this command.

**[No] logging** *ip-address*

**[No] logging-server one** *ip-address*

**[No] logging-server two** *ip-address*

## Syntax Description

| | |
|---|---|
| *ip-address* | IP address of the remote syslog server. |
| **one** | Identifies a primary logging server. |
| **two** | Identifies a secondary logging server. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

All users.

Warnings, errors, notifications, and alerts occur once the system boots successfully. The **logging** command sends these occurrences to the remote server that you specify.

To configure only one **logging** server, use either the logging command or the **logging-server one** command. These commands have the same effect.

## Examples

The following example configures the server switch to send log messages to the host with an IP address of 10.3.0.60:

```
SFS-7000P(config)# logging-server one 10.3.0.60
```

## Related Commands

**show logging**
**terminal**
**snmp-server**
**show snmp**

# login

To change user identity during a CLI session, enter the **login** command in user EXEC mode or privileged EXEC mode.

**login** *userid*

## Syntax Description

| | |
|---|---|
| *userid* | User ID that you want to use to log in. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

All users.

The **login** command allows you to assume the identity of another user without having to exit the CLI. The CLI prompts you for your password.

**Note** To change back to a previous login, do not use the **logout** command. Instead, use the **login** command again.

**Note** Cisco SFS Server Switch product configurations with operating system release 2.3.x and higher use a 128-bit MD5-based hashing scheme to store passwords.

## Examples

In the following example, the user moves from the current login to the **super** login:

```
SFS-7000P> login super
Password: xxxxx
SFS-7000P>
```

## Related Commands

**exit**
**logout**
**username**
**show user**

# logout

To log out of the current CLI session, enter the **logout** command in user EXEC mode or privileged EXEC mode.

**logout**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

All users.

The **logout** command ends the current CLI session. If logged in through the serial console port, the CLI login prompt appears. If logged in through a Telnet connection, the Telnet session ends, and you are returned to your operating system.

## Examples

The following example logs the user out of the CLI:

```
SFS-7000P# logout
SFS-7000P#
Connection to host lost.
```

## Related Commands

**exit**
**login**

# more

To view the contents of a text file on your terminal screen, enter the **more** command in privileged EXEC mode.

**more** [*slot-number*:]*file-system*:*file-name*

## Syntax Description

| | |
|---|---|
| *slot-number* | (Optional) Slot of the controller card (1 on the Cisco SFS 3001 and Cisco SFS 7000, 1 or 14 on the Cisco SFS 3012R, 11 or 12 on the Cisco SFS 7008P). |
| *file-system* | File system on your server switch in which the text file resides.<br>**Note** For the startup configuration file, you do not need to include the file system in the command syntax. |
| *file-name* | Name of the file to display. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

The **more** command displays text data resident on the chassis in increments determined by the **terminal length** command. The specified file-system must be appropriate for the file. See also the **dir** command to list the names of files in the respective file-systems.

Press any key (except the **q** key) to display the next screen of text lines.

The *file-system* variable represents the file system that contains the file. The file system variable may be **config** or **syslog**. You cannot display image file data or compressed system log files. Only the currently active log file, ts_log, may be viewed.

## Examples

The following example displays the contents of the startup configuration file:

```
SFS-7000D# more config:startup-config
!   TopspinOS-2.9.0/build127
!   Wed Sep 27 14:15:22 2006
enable
config terminal
!
```

```
boot-config primary-image-source TopspinOS-2.9.0/build000
!
!
SFS-7000D#
```

**Note** The lines beginning with an exclamation point (!) are comments that are ignored when the configuration file executes.

The following example displays the contents of the hwif_log file:

```
SFS-7000P# more 14:syslog:hwif_log
Mon Mar  1 00:32:10 2004: card_startup.x : card is starting up
Mon Mar  1 00:32:26 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 03:58:49 2004: card_startup.x : card is starting up
Mon Mar  1 03:59:05 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 04:01:37 2004: card_startup.x : card is starting up
Mon Mar  1 04:01:53 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 04:04:27 2004: card_startup.x : card is starting up
Mon Mar  1 04:04:43 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 04:07:10 2004: card_startup.x : card is starting up
Mon Mar  1 04:07:26 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 19:27:10 2004: card_startup.x : card is starting up
Mon Mar  1 19:27:26 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 19:30:39 2004: card_startup.x : card is starting up
Mon Mar  1 19:30:55 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
1.200000000.bin: PASSED
Mon Mar  1 19:55:33 2004: card_startup.x : card is starting up
Mon Mar  1 19:55:50 2004: POST: Tavor: Firmware rev 200000000 matches tavor_fw.A
```

## Related Commands

**dir**
**telnet**
**terminal**

# mtu

To configure the maximum transmission unit on the chassis, enter the **mtu** command in InfiniBand management interface configuration submode.

**mtu** *integer*

**no mtu**

## Syntax Description

| | |
|---|---|
| *integer* | The largest frame size in bytes that can be transmitted over the physical network. MTUs must match on all connected devices. |

## Defaults

The IB MTU value defaults to 1500.

## Command Modes

InfiniBand management interface configuration (config-if-mgmt-ib) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

The maximum possible MTU for InfiniBand is higher than the MTU for Ethernet. To smoothly transition traffic through Ethernet gateways, the factory setting of IB MTU matches the maximum Ethernet setting. On an IB-only network, you can set the MTU as high as 2044.

## Examples

The following example configures the IB MTU:

```
SFS-7000(config-if-mgmt-ib)# mtu 1500
```

## Related Commands

**show interface mgmt-ib**

# name

To assign a user-defined name to an interface port, enter the **name** command in the appropriate interface configuration submode.

**name** *string*

## Syntax Description

| | |
|---|---|
| *string* | Alphanumeric ASCII text string (up to 20 characters, including spaces) to assign to one or more ports. |

## Defaults

By default, the name of a port appears as a slot#/port# pair.

## Command Modes

Interface configuration (config-if-fc, config-if-ib, config-if-ether, config-if-fc) submodes.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Fibre Channel read-write user, InfiniBand read-write user, Ethernet read-write user.

The name can be used to simplify port identification and indicate port use. Assign the same name to multiple ports to identify the ports as a group with a uniform function. The name that you assign appears in the **name** field of the appropriate **show interface** command.

# ntp

To synchronize the clock on your server switch to primary, secondary, and tertiary NTP servers, enter the **ntp** command in global configuration mode. To reset an NTP configuration to the default value, use the **no** form of this command.

**ntp** {**server-one** | **server-two** | **server-three**} *ip-address*

**no ntp** {**server-one** | **server-two** | **server-three**}

## Syntax Description

| | |
|---|---|
| **server-one** | Specifies the primary NTP server. |
| **server-two** | Specifies the secondary NTP server. |
| **server-three** | Specifies the tertiary NTP server. |
| *ip-address* | IP address of the NTP server. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Use the **ntp** command to configure your server switch to take time information from up to three servers so that your server switch can identify a problem when one server sends faulty data packets. We strongly recommend that you configure all three servers for maximum precision.

## Examples

The following example assigns primary, secondary, and tertiary NTP servers to the server switch:

```
SFS-7000P(config)# ntp server-one 10.0.3.110
SFS-7000P(config)# ntp server-two 10.0.3.111
SFS-7000P(config)# ntp server-three 10.0.3.112
```

## Related Commands

**clock set**
**show clock**
**show ntp**
**snmp-server**

# ping

To verify that your server switch can reach a given host, enter the **ping** command from user EXEC mode or privileged EXEC mode.

**ping** *host*

## Syntax Description

| | |
|---|---|
| *host* | IP address or hostname of the host, port, or expansion module that you want to reach. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use the **ping** command to verify connectivity between your server switch and a host or port. The reply packet tells you if the host received the ping and the amount of time it took to return the packet.

**Note** You must configure domain name and IP addresses of name servers on the switch using IP commands.

To ping an expansion module, you need the IP address of the module:

- On Cisco SFS 7008P, only node cards can be pinged. The IP address if the node card in slot 9 is 1.1.1.9, in slot 10 is 1.1.1.10, and so on.
- On Cisco SFS 3001, you can ping the gateway in slot 2. Its IP address is 1.1.1.2.
- On Cisco SFS 3012R, you can ping gateways, controllers, and switches:
  - Gateway IP addresses include 1.1.1.2 through 1.1.1.13.
  - The switch card in slot 15 has IP address 1.1.2.15. The switch card in slot 16 has IP address 1.1.3.16.
  - The controller in slot 1 has IP address 1.1.6.1. The controller in slot 14 has IP address 1.1.6.14.

## Examples

The following example verifies that the server switch can contact the device with an IP address of 10.3.102.24:

```
SFS-7000P# ping 10.3.102.24
Sending 5 ICMP Echoes to 10.3.102.24, 56 data bytes
```

```
!!!!!
Success rate is 100 percent (5/5)
round-trip min/avg/max = 0.000000/0.000000/0.000000 ms
SFS-7000P#
```

## Related Commands

**hostname**
**ip address (Ethernet management interface configuration submode)**
**ip domain-name**

# pkey

To use a different partition as the inband IPoIB management partition, enter the **pkey** command in InfiniBand management interface configuration submode. To revert to the default ff:ff partition, use the **no** form of this command.

**pkey** *p_key*

**no pkey**

## Syntax Description

| | |
|---|---|
| *p_key* | Key value in the form *nn:nn* designating the partition to be used as the inband IPoIB management partition instead of the default. |

## Defaults

The default inband IPoIB management partition has the partition key ff:ff.

## Command Modes

InfiniBand management interface configuration (config-if-mgmt-ib) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

General read-write user.

In case IPoIB multicast joins are disabled on the default partition, you can use this command to change the inband IPoIB management partition to a partition that allows IPoIB multicast joins.

Use the **show config** and **show interface mgmt-ib** commands to view the results of the **pkey** command.

## Examples

The following example command sequence configures the InfiniBand management interface as the 80:80 partition and verifies the result:

```
SFS-3012R(config-if-mgmt-ib)# pkey 80:80
SFS-3012R(config-if-mgmt-ib)# exit all
SFS-3012R> show config
...
interface mgmt-ib
 pkey 80:80
 ip address 10.10.10.4 255.255.255.0
...
SFS-3012R> show interface mgmt-ib


================================================================================
                          Mgmt-InfiniBand Information
================================================================================
                    descr : Inband Management Port
             admin-status : down
                  ip-addr : 10.10.10.4
                     mask : 255.255.255.0
```

```
gateway-addr : 0.0.0.0
         mtu : 2044
        pkey : 80:80
```

## Related Commands

**ib sm multicast ipoib**
**ib sm**
**show config**
**show interface mgmt-ib**

# power-supply

To enter power supply configuration submode, enter the **power-supply** command from global configuration mode.

**power-supply** [**all** | *selection*]

## Syntax Description

| | |
|---|---|
| **all** | (Optional) Configures all power supplies. |
| *selection* | (Optional) Selection of power supplies to configure. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P

**Privilege Level:**

General read-write user.

Use the **shutdown** or **no shutdown** commands to bring down and bring up power supplies. The command will only enable you to bring down one power supply at a time.

## Examples

The following example enters power supply configuration submode for all power supplies:

```
SFS-7000(config)# power-supply all
```

## Related Commands

**show power-supply**

# radius-server

To configure up to three RADIUS servers that your server switch uses to authenticate CLI user logins, enter the **radius-server** command in global configuration mode. To remove a RADIUS server from the configuration, use the **no** form of this command.

**radius-server host** *ip-address* [**auth-port** *udp-port*] [**timeout** *seconds*] [**retransmit** *retries*] [**key** *authentication-key*]

**no radius-server host** *ip-address*

## Syntax Description

| | |
|---|---|
| **host** | Specifies the IP address of the RADIUS server. |
| *ip-address* | IP address of the RADIUS server. |
| **auth-port** | (Optional) Specifies the user datagram protocol (UDP) authentication port of the RADIUS server. |
| *udp-port* | (Optional) UDP authentication port of the RADIUS server. |
| **timeout** | (Optional) Specifies the amount of time that your server switch waits for a reply from the server before the login request times out. |
| *seconds* | (Optional) Amount of time, in seconds, that your server switch waits for a reply from the server before the login request times out. |
| **retransmit** | (Optional) Specifies the number of times that your server switch tries to authenticate after a timeout. |
| *retries* | (Optional) Number of times that your server switch tries to authenticate after a timeout. |
| **key** | (Optional) Specifies the authentication key that the client and radius server use. |
| *authentication-key* | (Optional) Authentication key that the client and radius server use. |

## Defaults

The RADIUS server IP address defaults to 0.0.0.0, which assigns no server, and the server switch authenticates locally by default.

The *udp-port* variable defaults to 1812.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

Unrestricted read-write access.

Configure a RADIUS server to authenticate CLI user logins. Enter the **authentication** command to enable authentication and to configure your server switch to authenticate with the RADIUS server. Use the **show authentication** command to display the configuration of the radius server, including the priority.

The order in which you configure RADIUS servers determines the order in which the authentication process attempts to access them.

## Examples

The following example assigns the RADIUS server that the server switch can use to validate logins:

```
SFS-7000P(config)# radius-server host 10.5.0.100
```

## Related Commands

**authentication**
**show authentication**
**snmp-server**
**tacacs-server**

# redundancy-group

To create a redundancy group, enter the **redundancy-group** command in global configuration mode. To remove a redundancy group, use the **no** form of this command. When you remove a redundancy group, all bridge groups members of this redundancy group are removed from redundancy group.

**redundancy-group** *redundancygroupID*

**no redundancy-group** *redundancygroupID*

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to create or remove. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

Create a redundancy group to bridge one Ethernet VLAN to one InfiniBand IPoIB partition redundantly. To initiate bridging at least one bridge group must be assigned to the redundancy group. To arrange a redundant configuration, at least two bridge groups must be assigned to a redundancy group.

## Examples

The following example creates a redundancy group:

```
SFS-3012R(config)# redundancy-group 1
```

## Related Commands

**show redundancy-group**
**bridge-group redundancy-group**

# redundancy-group broadcast-forwarding

To enable broadcast forwarding for all members of a redundancy group, enter the **redundancy-group broadcast-forwarding** command in global configuration mode. To disable broadcast forwarding, use the **no** form of this command.

This command temporarily overwrites the broadcast forwarding setting on all bridge groups that are members of the redundancy group. Once a bridge group is removed from a redundancy group the original broadcast forwarding setting is restored.

**redundancy-group** *redundancygroupID* **broadcast-forwarding**

**no redundancy-group** *redundancygroupID* **broadcast-forwarding**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to have broadcast forwarding enabled. |

## Defaults

For a new redundancy group, broadcast forwarding is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example enables broadcast forwarding for redundancy group 1:

```
SFS-3012R(config)# redundancy-group 1 broadcast-forwarding
```

## Related Commands

**show redundancy-group**
**redundancy-group**

# redundancy-group directed-broadcast

To enable directed broadcast for a redundancy group, enter the **redundancy-group directed-broadcast** command in global configuration mode. Once enabled, directed broadcasting allows directed broadcast traffic from the remote subnet Ethernet host to the IB network bridged by this redundancy group.

To disable directed broadcast for a redundancy group, use the **no** form of this command.

This command temporarily overwrites the directed-broadcast setting on all bridge groups that are members of the redundancy group. Once a bridge group is removed from a redundancy group the original directed-broadcast setting is restored.

**redundancy-group** *redundancygroupID* **directed-broadcast**

**no redundancy-group** *redundancygroupID* **directed-broadcast**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of redundancy group to be enabled or disabled. |

## Defaults

Directed broadcast is disabled by default.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level

Ethernet read-write user.

## Examples

The following example enables directed broadcast for redundancy group 1:

```
SFS-3012(config)# redundancy-group 1 directed-broadcast
```

## Related Commands

**show redundancy-group**
**bridge-group directed-broadcast**

# redundancy-group gratuitous-igmp

To enable gratuitous IGMP for all members of all bridge groups in a specified redundancy group, enter the **redundancy-group gratuitous-igmp** command in global configuration mode. To disable gratuitous IGMP on a redundancy group, use the **no** form of this command.

This command temporarily overwrites the gratuitous IGMP status on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group, the original gratuitous IGMP status is restored.

**redundancy-group** *redundancygroupID* **gratuitous-igmp**

**no redundancy-group** *redundancygroupID* **gratuitous-igmp**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to have gratuitous IGMP enabled or disabled. |
| **gratuitous-igmp** | Enable gratuitous IGMP. |

## Defaults

On a new redundancy group, gratuitous IGMP is disabled.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

Use this command when IGMP snooping is enabled on the Ethernet switches connected to the Ethernet gateway.

## Examples

The following example enables gratuitous IGMP on redundancy group 1:

```
SFS-3012R(config)# redundancy-group 1 gratuitous-igmp
```

## Related Commands

**show redundancy-group**
**bridge-group gratuitous-igmp**
**redundancy-group igmp**
**redundancy-group**

# redundancy-group igmp

To set the IGMP version for all members in a redundancy group, enter the **redundancy-group igmp** command in global configuration mode. To reset the IGMP version to the default version, use the **no** form of this command.

This command temporarily overwrites the IGMP version setting on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group the original IGMP version setting is restored.

**redundancy-group** ***redundancygroupID*** **igmp {v1 | v2 | v3}**

**no redundancy-group** ***redundancygroupID*** **igmp**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to have its igmp version configured. |
| **v1** | Configures IGMP version 1. |
| **v2** | Configures IGMP version 2. |
| **v3** | Configures IGMP version 3. |

## Defaults

By default, all members or all bridge groups in the redundancy group have version 2 unless configured to a different version by the **bridge-group igmp** command.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

The IGMP version must be set to correspond to the version used by the hosts and routers bridged by members of this redundancy group. It is used by gratuitous IGMP to generate reports and might have additional future uses.

## Examples

The following example sets the IGMP version for all member bridge groups of redundancy group 1 to v3:

```
SFS-3012R(config)# redundancy-group 1 igmp v3
```

## Related Commands

**show redundancy-group**
**redundancy-group gratuitous-igmp**
**bridge-group igmp**
**redundancy-group**

# redundancy-group load-balancing

To enable load balancing among members of a redundancy group, enter the **redundancy-group load-balancing** command in global configuration mode. To disable load balancing, use the **no** form of this command.

**redundancy-group** *redundancygroupID* **load-balancing**

**no redundancy-group** *redundancygroupID* **load-balancing**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to have load balancing enabled or disabled. |

## Defaults

By default, load balancing is disabled and the redundancy group operates in active-passive mode.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example enables load balancing among members of redundancy group 1:

```
SFS-3012R(config)# redundancy-group 1 load-balancing
```

## Related Commands

show redundancy-group
redundancy-group

# redundancy-group multicast

To enable multicast forwarding for a selected redundancy group, enter the **redundancy-group multicast** command in global configuration mode. To disable multicast forwarding, use the **no** form of this command.

This command temporarily overwrites the multicast forwarding setting on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group the original multicast forwarding setting is restored.

**redundancy-group** *redundancygroupID* **multicast**

**no redundancy-group** *redundancygroupID* **multicast**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to have multicast forwarding enabled or disabled. |

## Defaults

By default, multicast forwarding is disabled for the redundancy group.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example enables multicast forwarding for redundancy group 1:

```
SFS-3012R(config)# redundancy-group 1 multicast
```

## Related Commands

**show redundancy-group**
**bridge-group multicast**
**redundancy-group**

# redundancy-group name

To configure a name for a redundancy group, enter the **redundancy-group name** command in global configuration mode.

**redundancy-group** ***redundancygroupID*** **name** ***name***

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to be assigned a name. |
| *name* | Name to assign to the redundancy group. |

## Defaults

By default, redundancy groups are not named.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example assigns group-one as the name of redundancy group 1:

```
SFS-3012R(config)# redundancy-group 1 name group-one
```

## Related Commands

**show redundancy-group**
**redundancy-group**

# redundancy-group new-member-force-reelection

To configure a redundancy group to force re-election when a new member joins, or when an existing member comes online, enter the **redundancy-group new-member-force reelection** command in global configuration mode. To disable forced re-election, use the **no** form of this command.

**redundancy-group** *redundancygroupID* **new-member-force-reelection**

**no redundancy-group** *redundancygroupID* **new-member-force-reelection**

## Syntax Description

| | |
|---|---|
| *redundancygroupID* | Integer ID of the redundancy group to have forced re-election of new members enabled or disabled. |

## Defaults

By default, forced re-election is disabled.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

## Examples

The following example configures redundancy group 1 to force re-election when a new member joins:

```
SFS-3012R(config)# redundancy-group 1 new-member-force-reelection
```

## Related Commands

**show redundancy-group**
**redundancy-group**

# reload

To reboot your server switch, enter the **reload** command in privileged EXEC mode.

**reload** [**no-failover**]

## Syntax Description

| | |
|---|---|
| **no-failover** | (Optional) Forces a Cisco SFS 3012, Cisco 3012R, or Cisco SFS 7008 Server Switch to run from the same controller card when it reboots. By default, these switches swap active controller cards when they reboot. |

## Defaults

This command has no default settings.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

At stages of chassis and interface setup, you need to reinitialize chassis firmware or restore interface card configurations. Use the **reload** command because it allows the chassis to close files and prepare for shutdown. The **reload** command brings down the entire server switch and restarts all of the cards in the server switch.

The server switch prompts you to verify the reload. If you have not already saved configuration changes, and the server switch detects the changes, it prompts you to save. To store the new configuration as the startup configuration, enter **yes** at the prompt. To store the configuration elsewhere under a different file name, enter the new file name, and press **Enter**.

The system reinitializes itself and then loads the active system image and the startup configuration file. Wait a few minutes and attempt to log onto the chassis.

**Note** If your server switch includes a second controller card, the CLI will prompt you to save changes to the backup controller as well as to the primary controller.

When you enter the **reload** command as part of a new image installation process, all cards on the chassis reboot, regardless of the **no-failover** option.

When you enter the **reload** command on a Cisco SFS 7008P Server Switch that is configured with two controller cards but only one management Ethernet card, the outcome is as if the chassis had only one controller, regardless of the **no-failover** option.

## Examples

The following example reloads the server switch:

```
SFS-7000P# reload
System configuration has been modified. Save?
[yes(default)/no/*.cfg] yes
Proceed with reload? [confirm]
SFS-7000P#
Connection to host lost.
```

## Related Commands

**boot-config**
**broadcast**
**install**
**who**
**show boot-config**

# save-log

To save the system log file under a different file name, enter the **save-log** command in privileged EXEC mode.

**save-log** [*filename*]

## Syntax Description

| | |
|---|---|
| *filename* | (Optional) Name of the file you create to store the current contents of the system log. |

## Defaults

If you do not provide a name for the log file, your server switch assigns a name with the following format:

**savelog.***mmddhhmmss*

where *mmddhhmmss* represents the system UTC time.

## Command Modes

Privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

## Examples

The following copies the system log into a file named mylog.log:

```
SFS-7000P# save-log mylog.log
```

## Related Commands

**exec**
**more**
**copy**

# show arp ethernet

To display entries in the Ethernet ARP routing table, enter the **show arp ethernet** command in user EXEC mode or privileged EXEC mode. It provides ARP information for Layer 3 Mode, which is available only on four-port Ethernet gateways,

**show arp ethernet**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-only user.

Your server switch dynamically creates ARP connections on an as-needed basis and removes ARP entries from ARP routing tables when connections drop.

Table 3-8 describes the fields in the **show arp ethernet** command output.

*Table 3-8 show arp ethernet Command Field Descriptions*

| Field | Description |
|---|---|
| port | Port (in slot#/port# format) on your server switch to which the host connects. |
| physical-address | MAC address of the host. |
| net-address | IP address of the host. |
| type | Type of route between the host and your server switch, either **static** or **dynamic**. |

## Examples

The following example displays the entries in the Ethernet ARP routing table of the server switch:

```
SFS-3012# show arp ethernet
================================================================
                  ARP Information
================================================================
port    physical-address       net-address         type
-----------------------------------------------------------------------------
4/1     00:05:ad:00:10:41      20.45.0.1           static
```

## Related Commands

arp ethernet

# show authentication

To display how your system authenticates logins, enter the **show authentication** command in privileged EXEC mode.

**show authentication**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use this command to determine if your server switch uses a RADIUS server or TACACS+ client, with or without the local database, to authenticate CLI user logins. If your server switch uses multiple resources, the command output displays the order in which your server switch authenticates logins.

Table 3-9 describes the fields in the **show authentication** command output.

*Table 3-9 show authentication Command Field Descriptions*

| Field | Description |
|---|---|
| authentication method | Displays whether your server switch authenticates logins with the local CLI database, the RADIUS server, a TACACS+ client, or a combination. If dual configuration is used (local and either RADIUS or TACACS+), the output displays the order in which your server switch authenticates the login. |

## Examples

The following example displays the authentication method that the server switch uses:

```
SFS-7000P> show authentication

     authentication method: tacacs+ and then local
     ---------------------------------------------

           tacacs-server : 171.71.27.230
                priority : 1
                    port : 49
                     key : testing123
                 timeout : 5
```

```
                    max-retries : 2
           access-request-count : 3
            access-accept-count : 0
            access-reject-count : 1
           server-timeout-count : 4
SFS-7000P>
```

## Related Commands

**authentication**
**radius-server**
**tacacs-server**

# show backplane

To display a breakdown of Serial Electrically Erasable and Programmable Read-Only Memory (SEEPROM) details of your server switch, enter the **show backplane** command in user EXEC mode or privileged EXEC mode.

**show backplane**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

General read-only user.

The output of the **show backplane** command assists product support personnel.

Table 3-10 describes the fields in the **show backplane** command output.

*Table 3-10 show backplane Command Field Descriptions*

| Field | Description |
|---|---|
| base-mac-addr | 24-bit base MAC address of this chassis. |
| chassis-id | Factory-assigned, 64-bit chassis-identification number. |
| chassis-guid | Factory-assigned GUID of the chassis. |
| product serial-number | Factory-assigned product serial number. |
| pca serial-number | Printed circuit assembly (PCA) serial number. |
| pca number | Printed Circuit Assembly (PCA) assembly number. |
| fru number | Field replaceable unit (FRU) number for the actual switch (Cisco SFS 3001) or chassis (Cisco SFS 3012R). |

## Examples

The following example displays the SEEPROM details of the server switch backplane:

```
SFS-7000P> show backplane


================================================================================
                               Backplane Seeprom
================================================================================
base-mac-addr        chassis-id             chassis-guid
--------------------------------------------------------------------------------
0:5:ad:1:5f:f2       0x5ad0000015ff2        0x5ad0000015ff2


================================================================================
                               Backplane Seeprom
================================================================================
product            pca                pca                fru
serial-number      serial-number      number             number
--------------------------------------------------------------------------------
MX3054100107       C3054100150        95-00078-01        99-00140-01


SFS-7000P>
```

# show boot-config

To display the active system image that runs when your server switch boots, enter the **show boot-config** command in user EXEC mode or privileged EXEC mode.

**show boot-config**

## Syntax Description

This command has no arguments or keywords.

## Defaults

No default behavior or values

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

The **show boot-config** command displays the image that initializes chassis firmware and configures the interfaces.

This command lists the files used to bring up the system and the files to be used the next time the system reboots.

Table 3-11 describes the fields in the **show boot-config** command output.

*Table 3-11 show boot-config Command Field Descriptions*

| Field | Description |
|---|---|
| slot-id | Slot identifier of the controller card in use. |
| sw-version | Version of the software image that initialized chassis components. |
| last-image-source | Directory name of the active system image used to initialize chassis components. |
| primary-image-source | Name and directory location of the active system image to use to initialize chassis components the next time the system boots. |

## Examples

The following example displays the image that the server switch boots:

```
SFS-7000P# show boot-config
================================================================================
                    System Boot Configuration
================================================================================
                   slot-id : 1
                sw-version : OS-1.1.3/build255
         last-image-source : OS-1.1.3/build255
      primary-image-source : OS-1.1.3/build255
```

## Related Commands

**boot-config**
**install**
**reload**
**show card-inventory**
**show version**

# show bridge-forwarding

Display subnets to which bridge groups forward traffic with the **show bridge-forwarding** command.

**show bridge-forwarding** [*integer*] [**subnet** *subnet-prefix prefix-length*]

## Syntax Description

| | |
|---|---|
| *integer* | (Optional) Bridge group number limits forwarding information to bridge group. |
| **subnet** | (Optional) Specifies a particular subnet to display in the command output. |
| *subnet-prefix* | (Optional) Particular subnet to display in the command output. |
| *prefix-length* | (Optional) Prefix length of the subnet to display in the command output. |

## Defaults

This command has no default settings.

## Command Modes:

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user.

Table 3-14 explains the fields that appear in the **show bridge-subnets** command output.

*Table 3-12 show bridge-forwarding Command Field Descriptions*

| Field | Description |
|---|---|
| bridge | Number of the bridge group that bridges the subnet. |
| subnet-prefix | Subnet prefix that the bridge-group bridges. |
| subnet-prefix-len | Length of the subnet prefix of the subnet. |
| next-hop-addr | IP address of the next hop. |
| dest-addr | Address of destination subnet. |
| dest-len | Length of the subnet prefix of the dest-addr subnet. |

## Examples

The following example provides sample output of the **show bridge-forwarding** command:

```
SFS-3012R> show bridge-forwarding


================================================================================
                               Bridge Forwarding
================================================================================
bridge port subnet-pfx      pfx-len next-hop-addr   dest-addr        dest-len
--------------------------------------------------------------------------------

SFS-3012R>
```

## Related Commands

**bridge-group broadcast-forwarding**

# show bridge-group

To display the attributes of bridge groups, enter the **show bridge-group** command in user EXEC mode or privileged EXEC mode.

**show bridge-group** [*bridge-groupID#*]

## Syntax Description

| | |
|---|---|
| *bridge-groupID#* | (Optional) Integer value that represents a bridge group. Use the bridge-group ID number to view the attributes of one specific bridge group. |

## Defaults

Without an argument, the **show bridge-group** command shows all bridge groups.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines:

**Privilege Level:**

General read-only user.

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

Table 3-13 describes the fields in the **show bridge-group** command output.

*Table 3-13 show bridge-group Command Field Descriptions*

| Field | Description |
|---|---|
| bridge-group-id | Displays the integer-value identifier of the bridge group that the administrator assigned with the **bridge-group** command. |
| bridge-group-name | Displays the ASCII text string identifier that the administrator assigned with the **bridge-group** command. |
| ip-addr | IP address of the bridge group. |
| eth-bridge-port | Displays the trunk that the bridge group uses to connect to the Ethernet switch. |
| ib-bridge-port | Displays the internal gateway slot#/port# of the bridge-group. |
| broadcast-forwarding | Displays true if you enable broadcast-forwarding. Displays false if you disable broadcast forwarding. |
| broadcast-forwarding-mode | Active broadcast forwarding mode. |
| directed-broadcast | Displays true if directed broadcast is enabled for the bridge group. Displays false if directed broadcast is disabled. |
| directed-broadcast-mode | Active directed broadcast mode. |
| loop-protection-method | Displays one if you enable ARP Packet Painting. Displays **?** if you disable ARP Packet Painting. See the *Ethernet Gateway User Guide* for more information. |

*Table 3-13 show bridge-group Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| multicast | Displays true if the bridge group belongs to a multicast group. Displays false if the bridge group does not belong to a multicast group. |
| multicast-mode | Active IP multicast mode. |
| gratuitous-igmp | Displays true if gratuitous IGMP is set; otherwise, displays false. |
| gratuitous-igmp-mode | Mode in which the gratuitous IGMP was established. |
| igmp-version | Shows the configured IGMP version. |
| igmp-version-mode | Active IGMP version mode. |
| redundancy-group | Displays the redundancy group to which the bridge group belongs. |
| status-in-redundancy-group | Displays none (when the bridge group is not in a redundancy group), primary, or secondary. |

## Examples

The following example (output abridged) shows all bridge groups on the server switch:

```
SFS-3012R# show bridge-group 1


================================================================================
                                  Bridge Group
================================================================================
           bridge-group-id : 1
         bridge-group-name :
                   ip-addr : 0.0.0.0
           eth-bridge-port : 13/1 (not tagged)
            ib-bridge-port : 13/2(gw) (pkey: ff:ff)
      broadcast-forwarding : true
 broadcast-forwarding-mode : inherit-from-redundancy-group
        directed-broadcast : true
   directed-broadcast-mode : inherit-from-redundancy-group
    loop-protection-method : one
                 multicast : false
            multicast-mode : inherit-from-redundancy-group
           gratuitous-igmp : false
      gratuitous-igmp-mode : inherit-from-redundancy-group
              igmp-version : v2
         igmp-version-mode : inherit-from-redundancy-group
          redundancy-group : 1
status-in-redundancy-group : none
```

## Related Commands

**bridge-group (global configuration mode)**
**bridge-group broadcast-forwarding**
**bridge-group directed-broadcast**
**bridge-group gratuitous-igmp**
**bridge-group igmp**
**bridge-group ip-addr**
**bridge-group loop-protection**
**bridge-group multicast**
**bridge-group name**

bridge-group redundancy-group
show bridge-forwarding
show bridge-subnets
show redundancy-group

# show bridge-subnets

To display the subnets that a particular bridge group bridges, enter the **show bridge-subnets** command in user EXEC mode or privileged EXEC mode.

**show bridge-subnets** [*bridge-group-number*]

## Syntax Description

| | |
|---|---|
| *bridge-group-number* | (Optional) Limits the command output to the subnets of one particular bridge group. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user.

Table 3-14 explains the fields that appear in the **show bridge-subnets** command output.

*Table 3-14 show bridge-subnets Command Field Descriptions*

| Field | Description |
|---|---|
| bridge | Number of the bridge group that bridges the subnet. |
| subnet-prefix | Subnet prefix that the bridge-group bridges. |
| subnet-prefix-len | Length of the subnet prefix of the subnet. |

## Examples

The following example provides sample output of the **show bridge-subnets** command:

```
SFS-3012R# show bridge-subnets

================================================================================
                                 Bridge Subnets
================================================================================
bridge subnet-prefix   subnet-prefix-len
--------------------------------------------------------------------------------
1      192.168.0.0     22
2      192.168.13.32   29
```

## Related Commands

**show bridge-forwarding**
**show bridge-group**
**show redundancy-group**

# show card

To display the configuration, status, and Serial Electrically Erasable and Programmable Read Only Memory (SEEPROM) details about all cards, enter the **show card** command in user EXEC mode or privileged EXEC mode.

**show card** {*card-selection* | **all**}

## Syntax Description

| | |
|---|---|
| *card-selection* | Card, list of cards, or range of cards to view. |
| **all** | Displays the details of all interface cards in your server switch. |

## Defaults

The **show card** command displays all cards by default.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

- Use the following syntax format to display the details of one card:

  **show card 5**

- Use the following syntax format to display the details of a list of cards:

  **show card 5,9,14**

- Use the following syntax format to display the details of a range of cards:

  **show card 5-9**

- Use the following syntax format to display the details of a list with ranges of cards:

  **show card 5, 7-9, 14**

Table 3-15 describes the fields in the **show card** command output.

*Table 3-15 show card Command Field Descriptions*

| Field | Description |
|---|---|
| slot | Displays the number of the slot that the card occupies. |
| admin type | Displays the type of the interface card that the administrator specified with the **type** command. The first two letters of the entry indicate the general type of the card:<br>• en for Ethernet<br>• ib for InfiniBand<br>• fc for Fibre Channel<br>The number of ports on the card follow the two-letter type identifier. The remaining number and letter identify the speed of the ports on the card. The admin type **fc2port2G** indicates a Fibre Channel card with two ports that run at a maximum speed of 2 Gbps.<br>**Note** The controller and controllerIb12port4x cards serve as an exception to these rules.<br>The "admin type" identifier "controller" indicates the type of independent controller card found on both sides of the system chassis. The "admin type" identifier "controllerIb12port4x" indicates a controller card that piggy-backs onto a 12-port InfiniBand switch card, where each port connection can support speeds up to 4X. |
| oper type | Displays the type of the card as detected by the controller. If any conflict occurs between "admin type" and "oper type", the system assumes that the type specified by oper type is correct and allows you to configure the card based upon this assumption. If a type mismatch occurs, verify that you are selecting the correct type for the card in the chassis. |
| admin status | Displays the administrative status (that you configure with the **shutdown** and **no shutdown** commands) of the port. Possible values are up and down. |
| oper status | Displays the operational status as detected by the controller. Oper status represents the absolute status of the interface card based upon self-detection. The value of this read-only field appears as one of the following:<br>• unknown, which generally indicates that an error occurred when the card booted<br>• up, which indicates that the card is operating normally<br>• down, which indicates that a user disabled the card with the **shutdown** command<br>• failure, which indicates that the card failed to boot correctly<br>The "up" indicator means that your card is operating normally. You can only configure cards that have an operational status of "up."<br>The oper status of LIM cards is down if the corresponding fabric controller is not up. |

*Table 3-15 show card Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| oper code | Displays the general condition of the interface card. The general condition might appear as any of the following:<br>• unknown<br>• normal<br>• wrongBootImage<br>• bootFailed<br>• tooHot<br>• checkingBootImage<br>• rebooting<br>• booting<br>• standby<br>• recoveryImage<br>A condition of “unknown” indicates an unsupported interface card. To address this condition, replace the card with a supported card.<br>The oper code of a card must appear as normal for the oper status of the card to appear as up.<br>A wrong-image condition indicates that the active system image on the interface card does not match the active system image on the controller. All cards must run the same active system image as the controller card to function.<br>A bootFailed condition indicates that the active system image on the card was incompletely or incorrectly loaded. If the other interface cards come up successfully, reset the individual card. Otherwise, reboot your entire server switch.<br>When your card overheats, the tooHot condition appears in the **show card** command output. Enter the **show fan** command to see if your fans have failed.<br>The booting condition indicates that the card has not finished loading the necessary image data for internal configuration. |
| boot stage | Boot Stage could be any of the following:<br>• recovery<br>• ipl<br>• ppcboot<br>• fpga<br>• pic<br>• ib<br>• rootfs<br>• kernel<br>• exe<br>• done |

*Table 3-15 show card Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| boot status | Boot Status might appear as any of the following:<br>• upgrading<br>• success<br>• failed<br>• badVersion<br>• badCrc<br>• memoryError<br>• outOfSpace<br>• programmingError<br>• hardwareError<br>• fileNotFound<br>• inProgress<br>• none |
| boot image | Displays the active system image that the card runs when it boots. Blank if boot status is none. |
| product serial-number | Displays the factory-assigned product serial number of the card. |
| pca serial-number | Displays the Printed Circuit-Assembly (PCA) serial number of the card. |
| pca number | Displays the Printed Circuit-Assembly (PCA) assembly number of the card. |
| fru number | Displays the field-replaceable unit (FRU) number of the card. |

**Note** When you run the **show card** command on a Cisco SFS 7008, an asterisk (*) next to the slot number identifies the controller card on which you executed this command. The asterisk does not identify the normal or standby controllers. That information appears in the oper code column.

## Examples

This example displays the configuration and status information for cards 5, 9, 14, and 16:

```
SFS-3012# show card 5,9,14,16
============================================================================
                                Card Information
============================================================================
     admin                oper                 admin    oper     oper
slot type                 type                 status   status   code
----------------------------------------------------------------------------
5    en4port1G            en4port1G            up       up       normal
9    fc2port2G            fc2port2G            up       up       normal
14   controller           controller           up       up       normal
16   ib12port4x           ib12port4x           up       up       normal

============================================================================
                             Card Boot Information
============================================================================
     boot         boot                 boot
slot stage        status               image
----------------------------------------------------------------------------
5    done         success               OS-1.1.2/build084
9    done         success               OS-1.1.2/build084
14   done         success               OS-1.1.2/build084
```

```
16   done         success             OS-1.1.2/build084

=============================================================================
                                  Card Seeprom
=============================================================================
     product          pca              pca              fru
slot serial-number    serial-number    number           number
-----------------------------------------------------------------------------
5    00024            1234             95-00007-01      1234
9    1234             1234             95-00008-01      1234
14   00002            00002            95-00005-01      1234
16   1234             1234             95-00006-01      1234
SFS-7000P#
```

On the Cisco SFS 7008, an asterisk (*) designates the active controller card from which you have initiated your CLI session. See the example below:

```
SFS-7008# show card

   ========================================================================
                                Card Information
   ========================================================================
        admin                  oper                   admin    oper     oper
   slot type                   type                   status   status   code
   ------------------------------------------------------------------------
   11*  controllerFabric12x    controllerFabric12x    up       up       normal
   12   controllerFabric12x    controllerFabric12x    up       up       standby
```

## Related Commands

action
boot-config
card
install
show card-inventory
shutdown
type

# show card-inventory

To display the system resources and image data of all cards, enter the **show card-inventory** command in user EXEC mode or privileged EXEC mode.

**Note** The **show card-inventory** command only displays cards with an oper-status of **up**.

**show card-inventory** [*card-selection* | **all**]

## Syntax Description

| | |
|---|---|
| *card-selection* | (Optional) Card, list of cards, or range of cards to view. |
| **all** | (Optional) Displays resources and data of all cards in the chassis. |

## Defaults

The **show card-inventory** defaults to **show card-inventory all**.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Each interface card is a system in itself. The following comprise system resources:

- available and used memory
- available and used flash memory
- active system image on the interface card
- CPU name and version

The active system image should match the active image that runs on the controller card. Occasions might occur when you update the system image on the controller but not on an interface card, such as when you swap interface cards between chassis or update the system image on the controller when an interface card goes down. Disk space might be an issue if you try to update the system image on the controller but cannot propagate this data to the interface card because the interface card has no free space.

The CPU description might be requested by support personnel in the event you experience difficulties with a controller or an interface card.

Table 3-16 describes the fields in the **show card-inventory** command output.

*Table 3-16 show card-inventory Command Field Descriptions*

| field | description |
|---|---|
| slot-id | Slot number of the controller card, gateway module, or InfiniBand switch. |
| up-time | Number of seconds card has been active. |
| used-memory | Total amount of local RAM being used by the card. |
| slot-id | Displays the slot ID. |
| used-memory | Total amount of memory used in local RAM. |
| free-memory | Total amount of available local RAM. |
| used-disk-space | Total amount of local flash memory space being used by the card. |
| free-disk-space | Total amount of available local flash memory space. |
| last-image-source | Last image that the card booted. |
| primary-image-source | Active system image to use when the system reboots. This value should be the same for all cards in the system. |
| image | If only one instance of the image field appears, it indicates the system image used to initialize the card firmware. If there are two instances of the image field, the second instance indicates that a second system image is present on the card. |
| cpu-descr | CPU type, model, and firmware version. The disk on chip (DOC) versions are appended to the existing CPU descriptions in this release. |
| fpga-firmware-rev | Current FPGA firmware version that the card runs. |
| pic-firmware-rev | Version of PIC firmware on the card. |
| ib-firmware-rev | Version of InfiniBand firmware on the card.<br>**Note** For platforms designed with the InfiniScale III switch chip (7000 and 7008 platforms), the CLI for each card displays the device ID and version number of the InfiniBand chip for each card. For platforms using the original InfiniScale switch chip (3001 and 3012 platforms), no parenthetical text appears. The Cisco SFS 3001 and Cisco SFS 3012 chassis run original InfiniScale switch chips. The Cisco SFS 7000 and Cisco SFS 7008 chassis run later versions. |

## Examples

The following example displays the configuration and status information for the cards on the server switch:

```
SFS-7000P# show card-inventory

================================================================================
                      Card Resource/Inventory Information
================================================================================
                  slot-id : 1
                  up-time : 615398 (seconds)
              used-memory : 24184 (kbytes)
              free-memory : 103652 (kbytes)
```

```
                 used-disk-space : 36123 (kbytes)
                 free-disk-space : 58702 (kbytes)
               last-image-source : TopspinOS-2.6.0/build141
            primary-image-source : TopspinOS-2.6.0/build141
                           image : TopspinOS-2.6.0/build141
                       cpu-descr : PPC 440GP Rev. C - Rev 4.129 (pvr 4012 0481) (doc G3)
               fpga-firmware-rev : ab
                 ib-firmware-rev : 0008002ace (hw-rev b924 1a1)
```

## Related Commands

**boot-config**
**card**
**show card**

# show cdp

Display the Cisco Discovery Protocol (CDP) advertisement information, with the **show cdp** command.

**show cdp**

## Syntax Description

This command has no arguments or keywords.

## Defaults

CDP is running when the chassis boots.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Cisco Discovery Protocol (CDP) obtains protocol addresses of neighboring devices and discovers the platform of those devices. Using it with the MIB database allows applications to learn the device and the SNMP agent address of neighboring devices. CDP uses the CISCO-CDP-MIB.

Each device configured for CDP sends periodic messages, known as advertisements, to a multicast address. Each device advertises at least one address at which it can receive SNMP messages. Advertisements also contain time-to-live, or hold time, information, that indicates the length of time that a receiving device holds CDP information before discarding it. Each device also listens to the CDP messages sent by others to learn when the media interfaces of neighboring devices go up or down.

CDP Version-2 is the latest release of the protocol. With CDP Version-2, detailed information is provided on the VLAN Trunking Protocol (VTP) management domain and duplex modes of neighbor devices, CDP-related counters, and VLAN IDs of connecting ports. This information helps Ethernet gateway configuration. CDP is run on server switches over the management-Ethernet interface.

## Examples

The following example displays the CDP advertisement information:

```
SFS-7000P# show cdp
================================================================================
                                CDP Information
================================================================================
                         run : false
             message-interval : 60
                   hold-time : 180
                  device-id : SFS(00:05:ad:01:5f:f2)
```

## Related Commands

**show cdp entry**
**show cdp neighbors**
**show clock**

# show cdp entry

To display the Cisco Discovery Protocol (CDP) information for a specific neighbor, enter the **show cdp entry** command in user EXEC mode or privileged EXEC mode.

**show cdp entry entry-name** [*protocol* | *version*]

## Syntax Description

| | |
|---|---|
| **entry-name** | Specifies the entry name |
| *protocol* | (Optional) Specifies the protocol. |
| version | (Optional) Specifies the version |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

## Examples

The following example displays the CDP entry information:

```
SFS-7000P# show cdp entry

================================================================================
                                   CDP entry
================================================================================
                 device-id : svbu-h46-c2950.svbu-h46-c2950.cisco.com
                   platform : cisco WS-C2950T-24
               capabilities : switch
                device-port : FastEthernet0/1224
                    version : Cisco Internetwork OS C2950 Software
 (C2950-I6Q4L2-M) Version 12.1(22)
                native-vlan : 230
                     duplex : half
```

## Related Commands

show cdp
show cdp neighbors
show clock

# show cdp neighbors

To display the information for neighbors CDP has discovered, enter the **show cdp neighbors** command in user EXEC mode or privileged EXEC mode.

**show cdp neighbors**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

## Examples

The following example displays the CDP neighbors information:

```
SFS-7000P# show cdp neighbors

================================================================================
                                 CDP neighbors
================================================================================
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone

device-id                hold-time capability platform       port-id
--------------------------------------------------------------------------------
svbu-q8-c2950.svbu-q8-c2950.cisco.com²(- 180       S          cisco WS-C2950T-24
 FastEthernet0/4-24
```

## Related Commands

show cdp
show cdp entry
show clock

# show clock

To display the current system time, enter the **show clock** command in user EXEC mode or privileged EXEC mode.

**show clock**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

If you have not set the clock, system time begins at 00:00:00, January 1, 1970.

If a time zone is configured or daylight savings time is configured and active, the time zone designation appears in parentheses after the date and time.

## Examples

The following example displays the clock settings of the server switch:

```
SFS-3012R> show clock
Tue Oct  3 22:58:55 2006 (PST)
SFS-3012R>
```

## Related Commands

**clock set**

# show config

To display the startup configuration, enter the **show config** command in user EXEC mode or privileged EXEC mode.

**show config**

### Syntax Description

This command has no arguments or keywords.

### Defaults

This command has no default settings.

### Command Modes

User EXEC mode, privileged EXEC mode.

### Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

The **show config** command displays the current configuration as a series of commands in the format that you use when you execute commands in a CLI session. This command queries all active service components to collect their current configuration data and translates the data into a CLI command format.

This record of the configuration can be saved, edited, and reused to replicate a configuration.

**Note** ITLs (see the "fc srp itl" section on page 3-77) with default attributes (see the "fc srp-global itl" section on page 3-87) do not appear in the **show config** command output.

### Examples

The following example displays the running configuration on the server switch:

```
SFS-3012R> show config
!   TopspinOS-2.8.0/build145
!   Sat Jun 18 12:04:18 2016
enable
config terminal
!
boot-config primary-image-source TopspinOS-2.8.0/build145
!
clock timezone PST -8 0
clock summer-time PST 4 1 2007 2:00 10 28 2007 2:00 60
!
no ib sm subnet-prefix fe:80:00:00:00:00:00:00
!
interface mgmt-ethernet
 ip address 172.29.230.10 255.255.0.0
 gateway 172.29.230.1
 no shutdown
!
interface mgmt-ib
 pkey 80:80
 ip address 10.10.10.4 255.255.255.0
!
logging-server one 10.77.210.39
!
!
!
cdp timer 150
!
card 3
 type en6port1G
!
card 8
 type fc4port2G
!
card 10
 type en6port1G
!
card 12
 type en6port1G
!
card 13
 type en6port1G
!
bridge-group 1
!
interface trunk 1
!
interface gateway 13/2
 bridge-group 1 pkey ff:ff
!
interface ethernet 13/1
 bridge-group 1
!
redundancy-group 1
redundancy-group 1 gratuitous-igmp
redundancy-group 2
redundancy-group 2 name "ss_bridge"
!
bridge-group 1 redundancy-group 1
bridge-group 1 broadcast-forwarding
!
fc srp initiator 10:00:00:05:ad:00:00:50 00:00:00:00:00:00:00:00 wwnn 20:01:00:0
5:ad:00:12:34
!
snmp-server host 64.104.153.106
!
!
SFS-3012R#
```

## Related Commands

**copy**
**exec**
**dir**
**history**
**more**
**pkey**

# show diagnostic

To display diagnostics, enter the **show diagnostic** command in user EXEC mode or privileged EXEC mode.

**show diagnostic**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

## Examples

The following example displays the system diagnostics available on a Cisco SFS 7000D Server Switch:

```
SFS-7000D> show diagnostic ?
 card                   - Show card specific diagnostic test
 chassis                - Show chassis specific diagnostic test
 fan                    - Show fan specific diagnostic test
 fru-error              - Show the last hardware error (if any) detected
 interface              - Show interface specific diagnostic test
 post                   - Show POST status of all FRUs in the system
 power-supply           - Show power supply specific diagnostic test
SFS-7000D> show diagnostic
```

The following example displays the system diagnostics available on a Cisco SFS 3012R Server Switch:

```
SFS-3012R# show diagnostic ?
 card                   - Show card specific diagnostic test
 fru-error              - Show the last hardware error (if any) detected
 interface              - Show interface specific diagnostic test
 post                   - Show POST status of all FRUs in the system
SFS-3012R#
```

## Related Commands

show diagnostic card
show diagnostic chassis
show diagnostic fan
show diagnostic fru-error
show diagnostic interface ethernet

show diagnostic interface fc
show diagnostic interface ib
show diagnostic post
show diagnostic power-supply

# show diagnostic card

To display completed or ongoing diagnostic tests for cards, enter the **show diagnostic card** command in user EXEC mode or privileged EXEC mode.

**show diagnostic card** {**all** | *card-selection*}

## Syntax Description

| | |
|---|---|
| **all** | Specifies all cards on the server switch. |
| *card-selection* | Card or cards with the tests that you want to view. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Table 3-17 describes the fields in the **show diagnostic card** command.

*Table 3-17 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| test | Test that ran or runs on the card. |
| slot-id | Slot of the card. |
| iterations | Number of iterations that the test completed. |
| action | Last action that an administrator applied to the test. |
| result | Result of the last action that an administrator applied to the test. |
| percentage-completed | Percentage of the test that has executed. |
| result-string | Diagnostic test results. |

## Examples

The following example displays the completed and ongoing diagnostic tests on card 3:

```
SFS-3012# show diag card 3

================================================================================
                           Diagnostic Tests For Cards
================================================================================
                     test : led
```

```
                  slot-id : 3
               iterations : 1
                   action : stop
                   result : success
      percentage-completed : 100
             result-string : Card LED Test, Final report : PASSED
```

The following example displays the available test parameters:

```
SFS-3012(config)# diagnostic card 16
SFS-3012(config-diag-card-16)# ?
diagnostic Configuration Commands:
exit                    - Exit current mode
help                    - Show command help
history                 - Show command history
start                   - Initiate a test
stop                    - Stop a test
test                    - Configure test type
SFS-3012(config-diag-card-16)# test ?
>  led                    - Test type is LED test
>  self-test              - Test type is self-test
```

## Related Commands

**show card**
**show diagnostic**
**show fan**
**show power-supply**

# show diagnostic chassis

To display completed or ongoing diagnostic tests the chassis, enter the **show diagnostic chassis** command in user EXEC mode or privileged EXEC mode.

**show diagnostic chassis**

## Syntax Description

This command has no arguments or keywords.

**Platform Availability:**

Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D, Cisco 4x InfiniBand Switch Module for IBM BladeCenter

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

**Privilege Level:**

Unrestricted read-write user.

## Examples

The following example displays the completed and ongoing diagnostic tests on card 3:

```
SFS-7000# show diagnostic chassis

================================================================================
                          Diagnostic Tests For Chassis
================================================================================
              module-type : chassis
            module-number : 1
                     test : self-test
               iterations : 1
                   option : stopOnError
                   action : start
                   result : success
     percentage-completed : 100
            result-string : Self Test, Final report : PASSED; Please reboot syst
em

SFS-7000#
```

## Related Commands

show card
show diagnostic
show fan
show power-supply

# show diagnostic fan

To display completed or ongoing diagnostic tests for fans, enter the **show diagnostic fan** command in user EXEC mode or privileged EXEC mode.

**show diagnostic fan** {**all** | *fan-selection*}

## Syntax Description

| | |
|---|---|
| **all** | Specifies all fans on the server switch. |
| *fan-selection* | Fan or fans with the tests that you want to view. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

Unrestricted read-write user.

Table 3-18 describes the fields in the **show diagnostic fan** command.

*Table 3-18 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| test | Test that ran or runs on the card. |
| slot-id | Slot of the card. |
| iterations | Number of iterations that the test completed. |
| action | Last action that an administrator applied to the test. |
| result | Result of the last action that an administrator applied to the test. |
| percentage-completed | Percentage of the test that has completed. |
| result-string | Diagnostic test results. |

## Examples

The following example displays diagnostic test results for a fan:

```
SFS-7000# show diag fan


================================================================================

                            Diagnostic Tests For Fan
================================================================================

              module-type : fan
            module-number : 3
                     test : self-test
               iterations : 1
                   action : stop
                   result : success
     percentage-completed : 100
            result-string : Fan Self Test Completed, Final report : Passed=1, Fa
iled=0, Total=1
```

## Related Commands

**show card**
**show fan**
**show diagnostic**
**show power-supply**

# show diagnostic fru-error

To display field-replaceable unit (FRU) run-time errors, enter the **show diagnostic fru-error** command in user EXEC mode or privileged EXEC mode.

**show diagnostic fru-error**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes:

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R,
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

### Privilege Level:

Unrestricted read-write user.

Table 3-19 describes the fields in the **show diagnostic fru-error** command.

*Table 3-19 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| fru-slot | FRU type (such as fan or power supply) and slot. |
| fru-error | FRU error, if any. |

## Examples

The following example displays FRU errors on a Cisco SFS 7008P:

```
SFS-7008P# show diagnostic fru-error
================================================================================
                                   Fru-Error
================================================================================
fru-slot        fru-error
--------------------------------------------------------------------------------
card(1)         none
card(2)         none
card(9)         none
card(11)        _FRU_ETHERNET_ERR
card(12)        _FRU_ETHERNET_ERR
card(15)        none
card(16)        none
fan(1)          none
fan(2)          none
fan(3)          none
fan(4)          none
power-supply(1) none
power-supply(2) none
```

## Related Commands

**show card**
**show fan**
**show diagnostic**
**show power-supply**

# show diagnostic interface ethernet

To display completed or ongoing diagnostic tests for Ethernet gateway ports, enter the **show diagnostic interface ethernet** command in user EXEC mode or privileged EXEC mode.

**show diagnostic interface ethernet** {*port* | **all**}

## Syntax Description

| | |
|---|---|
| *port* | Ethernet port, in slot#/port# notation. |
| **all** | Specifies all Ethernet ports on the server switch. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-only user.

Table 3-20 describes the fields in the **show diagnostic interface ethernet** command.

*Table 3-20 show diagnostic interface ethernet Command Field Descriptions*

| Field | Description |
|---|---|
| test | Test that ran or runs on the card. |
| port | Ethernet port number, in slot#/port# notation. |
| validation | Displays enabled or disabled to indicate validation status. |
| data-size | Size of the test data. |
| data-pattern | Pattern of the test data. |
| iterations | Number of iterations of the test. |
| action | Last action that an administrator performed on the test. |
| result | Result of the last action that an administrator performed on the test. |
| percentage-completed | Percentage of the test that has executed. |
| result-string | Result of the diagnostic test. |

## Examples

The following example displays the completed and ongoing diagnostic tests on port 1 of Ethernet gateway 9:

```
SFS-3012# show diagnostic interface ethernet 9/1

================================================================================
                    Diagnostic Tests For Ethernet Interfaces
================================================================================
                     test : led
                     port : 9/1
               validation : enabled
                data-size : 0
             data-pattern : 00:00:00:00
               iterations : 0
                   action : stop
                   result : none
      percentage-completed : 0
             result-string : Unknown Test Unknown status, Current report : Passed=0,
Failed=0, Total=0
```

The following example displays the diagnostic tests available:

```
SFS-3012# (config)# diagnostic interface ethernet 2/1
SFS-3012# (config-diag-if-ether-2/1)# ?
>diagnostic Configuration Commands:
data-pattern         - Configure a data pattern to use in traffic test
cases
  data-size            - Configure size (in octects) of payload data
  exit                 - Exit current mode
  help                 - Show command help
  history              - Show command history
  iterations           - Configure number of iterations the test case
 should be run
  no                   - Disable a configuration or set default
  start                - Initiate a test
  stop                 - Stop a test
  test                 - Configure the test case to run
  validate             - Enable data validation to be performed on
 received packets
SFS-3012# (config-diag-if-ether-2/1)# test ?
  ext-loopback         - Configure External-Loopback test
  led                  - Configure LED test
```

## Related Commands

show diagnostic
show interface ethernet

# show diagnostic interface fc

To display completed or ongoing diagnostic tests for Fibre Channel gateway ports, enter the **show diagnostic interface fc** command in user EXEC mode or privileged EXEC mode.

**show diagnostic interface fc** {*port* | **all**}

## Syntax Description

| | |
|---|---|
| *port* | Ethernet port, in slot#/port# notation. |
| **all** | Specifies all Ethernet ports on the server switch. |

## Defaults

This command has no default settings.

## Command Modes:

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

Table 3-21 describes the fields in the **show diagnostic interface fc** command.

*Table 3-21 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| test | Test that ran or runs on the card. |
| port | Fibre Channel port number, in slot#/port# notation. |
| validation | Displays enabled or disabled to indicate validation status. |
| data-size | Size of the test data. |
| data-pattern | Pattern of the test data. |
| iterations | Number of iterations of the test. |
| source-id | Source WWPN for the test. |
| target-id | Target WWPN for the test. |
| action | Last action that an administrator performed on the test. |
| result | Result of the last action that an administrator performed on the test. |
| percentage-completed | Percentage of the test that has executed. |
| result-string | Result of the diagnostic test. |

## Examples

The following example displays the completed and ongoing diagnostic tests on all Ethernet ports:

```
SFS-3012R# show diagnostic interface ethernet all

================================================================================
                    Diagnostic Tests For Ethernet Interfaces
================================================================================
                     test : external-loopback
                     port : 6/3
               validation : enabled
                data-size : 0
             data-pattern : 00:00:00:00
               iterations : 0
                   action : stop
                   result : none
     percentage-completed : 0
           result-string : External Loopback Test In-progress, Current report : Passed=0,
Failed=0, Total=0
```

The following example displays the diagnostic tests available:

```
SFS-3012R(config)# diagnostic interface fc 6/1
SFS-3012R(config-diag-if-fc-6/1)# ?
> diagnostic Configuration Commands:
>  data-pattern         - Configure a data pattern to use in traffic test
> cases
>  data-size            - Configure size (in octects) of payload data
>  exit                 - Exit current mode
>  help                 - Show command help
>  history              - Show command history
>  iterations           - Configure number of iterations the test case
> should be run
>  no                   - Disable a configuration or set default
>  source-id            - Specify source identifier for use with FC Echo test
>  start                - Initiate a test
>  stop                 - Stop a test
>  target-id            - Specify target identifier for use with FC Echo test
>  test                 - Configure the test case to run
>  validate             - Enable data validation to be performed on
> received packets
> SFS-3012R(config-diag-if-fc-6/1)# test ?
>  echo                 - Configure Echo test
>  ext-loopback         - Configure External-Loopback test
>  int-loopback         - Configure Internal-Loopback test
```

## Related Commands

**show diagnostic**
**show interface fc**

# show diagnostic interface ib

To display completed or ongoing diagnostic tests for InfiniBand switch ports, enter the **show diagnostic interface ib** command in user EXEC mode or privileged EXEC mode.

**show diagnostic interface ib** {*port* | **all**}

## Syntax Description

| | |
|---|---|
| *port* | Ethernet port, in slot#/port# notation. |
| **all** | Specifies all Ethernet ports on the server switch. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-22 describes the fields in the **show diagnostic interface ib** command.

*Table 3-22 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| test | Test that ran or runs on the card. |
| port | InfiniBand port number, in slot#/port# notation. |
| validation | Displays enabled or disabled to indicate validation status. |
| data-size | Size of the test data. |
| data-pattern | Pattern of the test data. |
| iterations | Number of iterations of the test. |
| source-id | Source LID for the test. |
| target-id | Target LID for the test. |
| action | Last action that an administrator performed on the test. |
| result | Result of the last action that an administrator performed on the test. |
| percentage-completed | Percentage of the test that has executed. |
| result-string | Result of the diagnostic test. |

## Examples

The following example displays the completed and ongoing diagnostic tests on port 1 of InfiniBand switch card 16:

```
SFS-3012R> show diagnostic interface ib 16/1

================================================================================
                       Diagnostic Tests For IB Interfaces
================================================================================
                     test : external-loopback
                     port : 16/1
               validation : enabled
                data-size : 0
             data-pattern : 00:00:00:00
               iterations : 0
                source-id : 00:00:00
                target-id : 00:00:00
                   action : stop
                   result : none
      percentage-completed : 0
            result-string : External Loopback Test Unknown status, Current report :
Passed=0, Failed=0, Total=0
```

The following example displays the available diagnostics tests:

```
SFS-3012R(config)# diagnostic interface ib 16/1
> SFS-3012R(config-diag-if-ib-16/1)# ?
> diagnostic Configuration Commands:
>  data-pattern         - Configure a data pattern to use in traffic test
> cases
>  exit                 - Exit current mode
>  help                 - Show command help
>  history              - Show command history
>  iterations           - Configure number of iterations the test case
> should be run
>  no                   - Disable a configuration or set default
>  start                - Initiate a test
>  stop                 - Stop a test
>  test                 - Configure the test case to run
>  validate             - Enable data validation to be performed on
> received packets
> SFS-3012R(config-diag-if-ib-16/1)# test ?
>  ext-cable            - Configure External-Cable test
>  ext-loopback         - Configure External-Loopback test
>  int-loopback         - Configure Internal-Loopback test
```

## Related Commands

**show diagnostic**
**show interface ib**

# show diagnostic post

To display POST error messages, enter the **show diagnostic post** command in user EXEC mode or privileged EXEC mode.

**show diagnostic post**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R,
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

Unrestricted read-write user.

Table 3-23 describes the fields in the **show diagnostic post** command.

*Table 3-23 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| fru-slot | FRU type (such as fan or power supply) and slot. |
| post-status | Status of the POST test. |
| error-codes | Applicable error codes. |

## Examples

The following example displays POST error messages on a Cisco SFS 7000:

```
SFS-270# show diagnostic post


================================================================================
                                   Post Status
================================================================================
fru-slot        post-status           post-error
--------------------------------------------------------------------------------
card(1)         passed              none
card(2)         passed              none
card(9)         passed              none
card(11)        failed                _FRU_ETHERNET_ERR
card(12)        failed                 _FRU_ETHERNET_ERR
card(15)        passed              none
card(16)        passed              none
fan(1)         passed              none
fan(2)         passed              none
fan(3)         passed              none
fan(4)         passed              none
power-supply(1) passed          none
power-supply(2) passed          none
```

## Related Commands

**show diagnostic**

# show diagnostic power-supply

To display completed or ongoing diagnostic tests for power supplies, enter the **show diagnostic power-supply** command in user EXEC mode or privileged EXEC mode.

**show diagnostic power-supply** {**all** | *power-supply-selection*}

## Syntax Description

| | |
|---|---|
| **all** | Specifies all fans on the server switch. |
| *power-supply-selection* | Power supply or supplies with the tests that you want to view. |

## Defaults

This command has no default settings.

## Command Modes:

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

Unrestricted read-write user.

Table 3-18 describes the fields in the **show diagnostic power-supply** command.

*Table 3-24 show diagnostic card Command Field Descriptions*

| Field | Description |
|---|---|
| module-number | Power supply module number. |
| test | Test that ran or runs on the card. |
| iterations | Number of iterations that the test completed. |
| action | Last action that an administrator applied to the test. |
| result | Result of the last action that an administrator applied to the test. |
| percentage-completed | Percentage of the test that has completed. |
| result-string | Diagnostic test results. |

**Examples**

The following example displays the completed and ongoing diagnostic tests on all power supplies:

```
SFS-270> show diagnostic power-supply all

================================================================================
                      Diagnostic Tests For Power Supplies
================================================================================
            module-number : 1
                     test : none
               iterations : 1
                   action : stop
                   result : none
     percentage-completed : 0
            result-string :
```

# show fan

To display the status of the fans in your server switch, enter the **show fan** command in user EXEC mode or privileged EXEC mode.

**show fan**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

General read-only user.

For the health of your server switch, all fans should be operating while your server switch runs. If the operational status of a fan appears as "down," contact customer support for a fan module replacement.

Table 3-25 describes the fields in the **show fan** command output.

*Table 3-25 show fan Command Field Descriptions*

| field | description |
|---|---|
| fan | Fan number. Fan 1 resides on the left-side as you are facing the front of the chassis. Fan 2 resides on the right-side of the chassis. |
| oper status | Operational status of the fan. The value appears as unknown, up, down, or failure. An up value indicates the fan functions correctly. |
| speed (%) | Speed of the fan as a percentage of the maximum speed of the fan. |
| product serial number | Factory-assigned product serial-number. |
| pca serial-number | Printed Circuit-Assembly (PCA) serial-number. |
| pca number | Printed Circuit-Assembly (PCA) assembly-number. |
| fru number | Field-replaceable unit (FRU) number. |

## Examples

The following example displays the fan settings on the server switch:

```
SFS-3012R> show fan


================================================================================
                                Fan Information
================================================================================
fan   oper-status   speed(%)
--------------------------------------------------------------------------------
1     up            87
2     up            85
3     up            85
4     up            85


================================================================================
                                  Fan Seeprom
================================================================================
      product              pca                pca                fru

fan   serial-number        serial-number      number             number

--------------------------------------------------------------------------------
1     PY-0250-000001       PY-0250-000001     95-00011-0         0

2     PY-0250-000001       PY-0250-000001     95-00011-0         0

3     PY-0250-000042       PY-0250-000042     95-00011-0         0

4     PY-0250-000042       PY-0250-000042     95-00011-0         0


SFS-3012R>
```

## Related Commands

**show power-supply**
**show sensor**

# show fc srp initiator

To display the attributes of initiators that you have configured on your server switch, enter the **show fc srp initiator** command in user EXEC mode or privileged EXEC mode.

**show fc srp initiator** [*guid extension*]

## Syntax Description

| | |
|---|---|
| *guid* | (Optional) GUID of the initiator to view. |
| *extension* | (Optional) GUID extension of the initiator to view. |

## Defaults

Enter the **show fc srp initiator** command with no arguments to display all initiators.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

This command displays active and inactive initiators.

Enter this command without any arguments to display the initiator information for all configured SRP initiators. If you specify a GUID, you must also specify the extension.

**Note** Initiators do not need to connect to the server switch to appear in the show output. If you configured them, they appear in the command output.

Table 3-26 describes the fields in the **show fan** command output.

*Table 3-26 show fc srp initiator Command Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the initiator. |
| extension | GUID extension of the initiator. |
| description | User-assigned ASCII description of the initiator. |
| wwnn | World-wide node name (WWNN) of the initiator. |
| credit | Indicates the amount of traffic that the initiator can accept. |
| active-ports | IB ports on your server switch through which the initiator passes traffic. |
| pkeys | Partition keys of the initiator. |
| bootup-target | Target configured to access the primary boot LUN. |

*Table 3-26 show fc srp initiator Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| bootup-lu | Logical unit containing the primary boot file for the SRP host. |
| alt-bootup-target | Target configured to access the alternate boot LUN. |
| alt-bootup-lu | Logical unit containing the alternate boot file for the SRP host. |
| action | Displays the last action you performed using the **fc srp initiator** command on this initiator. Displays the last action you have performed using the **config fc arp initiator** command on this initiator. The action can be *discover-itl* or *auto-bind*. Possible values are none (when no action was taken), success, in-progress, or fail. |
| result | Displays the result of the action that appears in the "action" field. Possible values are none (when no action was taken), success, in-progress, or fail. Any results other than "Operation completed successfully" occur due to interface errors. |
| wwpns | World-wide port names (WWPNs) of the virtual ports (NL_ports) that point to the initiator. |

## Examples

The following example displays the initiators that users have configured on the server switch:

```
SFS-3012R# show fc srp initiator 00:00:00:fd:00:00:34:ad 00:00:00:00:00:00:00:00


================================================================================
                                 SRP Initiators
================================================================================
                    guid: 00:00:00:fd:00:00:34:ad
               extension: 00:00:00:00:00:00:00:00
             description: init-000000FD000034AD:0000000000000000
                    wwnn: 20:01:00:05:ad:00:12:34
                  credit: 0
            active-ports: none
                   pkeys:
          bootup-target: 00:00:3f:00:00:00:00:02
               bootup-lu: 00:00:00:14:00:00:00:00
      alt-bootup-target: 00:00:3f:00:00:00:00:05
           alt-bootup-lu: 00:00:00:15:00:00:00:00
                  action: auto-bind
                  result: success
                  wwpns: port    wwpn                     fc-addr
                          2/1    20:01:00:05:ad:20:12:34  00:00:00
                          2/2    20:01:00:05:ad:24:12:34  00:00:00
                          3/1    20:01:00:05:ad:30:12:34  00:00:00
                          3/2    20:01:00:05:ad:34:12:34  00:00:00
                          4/1    20:01:00:05:ad:40:12:34  00:00:00
                          4/2    20:01:00:05:ad:44:12:34  00:00:00
                          5/1    20:01:00:05:ad:50:12:34  00:00:00
                          5/2    20:01:00:05:ad:54:12:34  00:00:00
                          6/1    20:01:00:05:ad:60:12:34  00:00:00
                          6/2    20:01:00:05:ad:64:12:34  00:00:00
                          7/1    20:01:00:05:ad:70:12:34  00:00:00
                          7/2    20:01:00:05:ad:74:12:34  00:00:00
                          8/1    20:01:00:05:ad:80:12:34  00:00:00
                          8/2    20:01:00:05:ad:84:12:34  00:00:00
                          9/1    20:01:00:05:ad:90:12:34  00:00:00
                          9/2    20:01:00:05:ad:94:12:34  00:00:00
                         10/1    20:01:00:05:ad:a0:12:34  00:00:00
```

```
10/2    20:01:00:05:ad:a4:12:34  00:00:00
11/1    20:01:00:05:ad:b0:12:34  00:00:00
11/2    20:01:00:05:ad:b4:12:34  00:00:00
12/1    20:01:00:05:ad:c0:12:34  00:00:00
12/2    20:01:00:05:ad:c4:12:34  00:00:00
13/1    20:01:00:05:ad:d0:12:34  00:00:00
13/2    20:01:00:05:ad:d4:12:34  00:00:00
```

## Related Commands

**fc srp initiator auto-bind**
**fc srp initiator-wwpn**
**fc srp it**
**fc srp itl**
**fc srp lu**
**fc srp target**
**fc srp-global gateway-portmask-policy restricted**
**fc srp-global lun-policy restricted**
**speed (Fibre Channel interface configuration submode)**

# show fc srp initiator-wwpn-view

To display SRP targets that an initiator can access through one of its virtual ports, enter the **show fc srp initiator-wwpn-view** command in user EXEC mode or privileged EXEC mode.

**show fc srp initiator-wwpn-view** *wwpn* **target**

## Syntax Description

| | |
|---|---|
| *wwpn* | World-wide port name (WWPN) of the virtual port of the initiator. |
| **target** | Displays the targets that your initiator can access through the virtual port. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

Use this command to verify that your initiator connects to all of the targets that you configured for it.

Table 3-27 describes the fields in the **show fc srp initiator-wwpn-view** command output.

*Table 3-27 show fc srp initiator-wwpn-view Command Field Descriptions*

| Field | Description |
|---|---|
| wwpn | World-wide port name (WWPN) of the target port that the initiator can access through the virtual port. |
| wwnn | World-wide node name (WWNN) of the target. |
| description | Description of the target. |
| ioc-guid | GUID of the I/O controller of the target. |
| service-name | Service name of the target. |
| protocol-ids | Protocols that the target supports. |
| fc-address | Fibre Channel address of the target. |
| mtu | Maximum transmission unit (MTU), in bytes, of the target. |
| connection-type | Displays **nl-port** to indicate a virtual FC port. |
| physical-access | Physical FC port (in slot#/port# format) of the virtual port. |

## Examples

The following example displays the targets that the initiator can access through the specified virtual port:

```
SFS-3012R> show fc srp initiator-wwpn-view 20:03:00:05:ad:21:5a:5c target

================================================================================
    SRP Targets Accessible to Initiator Via Port WWN 20:03:00:05:ad:51:5a:5c
================================================================================
                     wwpn: 20:01:00:60:45:17:36:1c
                     wwnn: 20:09:00:60:45:17:36:1c
              description: SRP.T10:200100604517361C
                 ioc-guid: 00:05:ad:00:00:01:38:80
             service-name: SRP.T10:200100604517361C
             protocol-ids: 04:00:00:00:00:00:00:00:00:00
               fc-address: 61:1b:13
                      mtu: 0
          connection-type: nl-port
          physical-access: 5/1-5/2,7/1
```

## Related Commands

**fc srp initiator**
**fc srp-global lun-policy restricted**
**show fc srp initiator**

# show fc srp it

To display initiator-target pairs that you have configured or that your server switch has discovered, enter the **show fc srp it** command in user EXEC mode or privileged EXEC mode.

**show fc srp it** [*guid extension target-wwpn*]

## Syntax Description

| | |
|---|---|
| *guid* | (Optional) GUID of the initiator in the IT pair. |
| *extension* | (Optional) GUID extension of the initiator in the IT pair. |
| *target-wwpn* | (Optional) World-wide port name (WWPN) of the target FC storage port in the IT pair. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user.

Use this command to verify that you successfully created IT pairs on your server switch.

Table 3-28 describes the fields in the **show fc srp it** command output.

*Table 3-28 show fc srp it Command Output Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the initiator in the initiator-target pair. |
| extension | GUID extension of the initiator in the initiator-target pair. |
| target-wwpn | WWPN of the target storage. |
| description | User-assigned description of the initiator-target pair. |
| non-restricted-ports | Ports on your server switch that grant the initiator of the IT pair access to storage. |
| active-ports | Ports on your server switch through which the initiator of the IT pair passes traffic. |
| physical-access | Physical ports on your server switch to which the initiator of the IT pair connects. |
| mode | Displays “normal-mode” or “test-mode.” Configure the mode to normal-mode to permit initiators to log in to storage. In test-mode, the FC gateway persistently logs in to storage and blocks the initiators. |

*Table 3-28 show fc srp it Command Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| action | Displays the last action you performed using the **config fc srp it** command on this initiator target. The action can be *discover-itl* |
| result | Displays the result of the action that appears in the “action” field. Possible values are none (when no action was taken), success, in-progress, or fail. Any result other than “Operation completed successfully” occurs due to interface errors. |

## Examples

The following example displays the details of an IT pair:

```
SFS-3012R# show fc srp it

================================================================================
                                     SRP IT
================================================================================
                                    guid: 00:02:c9:02:00:40:0e:d4
                               extension: 00:00:00:00:00:00:00:00
                             target-wwpn: 21:00:00:04:cf:86:a0:1f
                             description: it
                    non-restricted-ports: 2/1-2/4,3/1-3/4,4/1-4/4,5/1-5/4,
                                        : 6/1-6/4,7/1-7/4,8/1-8/4,9/1-9/4,
                                        : 10/1-10/4,11/1-11/4,12/1-12/4,13/1-13/4
                            active-ports: 5/1-5/2
                         physical-access: 5/1-5/2,7/2
                                    mode: normal-mode
                                  action: none
                                  result: none
```

## Related Commands

**fc srp-global gateway-portmask-policy restricted**
**fc srp it**
**show interface fc**

# show fc srp itl

To display all ITLs that run through your server switch, enter the **show fc srp itl** command in user EXEC mode or privileged EXEC mode.

**show fc srp itl** [*guid extension wwpn LUN*]

## Syntax Description

| | |
|---|---|
| *guid* | (Optional) Global unique identifier (GUID) of the initiator. |
| *extension* | (Optional) GUID extension of the initiator. |
| *wwpn* | (Optional) World-wide port name (WWPN) of the target port on the FC storage device. |
| *LUN* | (Optional) Logical unit number (LUN) of the FC storage device. |

## Defaults

Enter the **show fc srp itl** command with not arguments to display all ITLs on your server switch.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user.

Enter this command without arguments to display the ITL information for all connected Fibre Channel devices. This command displays active and inactive ITLs.

Table 3-29 describes the fields in the **show fc srp itl** command output.

*Table 3-29 show fc srp itl Command Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the initiator. |
| extension | GUID extension of the initiator. |
| target-wwpn | WWPN of the target port on the FC storage device. |
| fc-lunid | Fibre Channel LUN ID of the storage disk/tape/stripe. |
| description | User-configured description. |
| srp-lunid | Internal SRP LUN ID. This value serves as a SRP-side alias for a FC LUN ID. By default, the srp-lunid value matches the *LUN* variable. |
| logical-id (raw 64 bytes) | Numeric disk LU. |
| logical-id (formatted display) | Alphanumeric disk LU. |

*Table 3-29 show fc srp itl Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| gateway-port-mask-policy | Displays a list of unrestricted ports though which the ITL traffic can pass. |
| lun-policy | Displays **restricted** when the you activate the LUN masking policy and **non-restricted** when you deactivate the policy. |
| hi-mark | The maximum number of outstanding requests from the initiator to the storage that the ITL can maintain. |
| max-retry | Configures the maximum number of retries that the initiator can send to the storage device. |
| min-io-timeout | Maximum amount of time, in seconds, that elapses before a SRP request times out. |
| dynamic-path-affinity | Displays true when you enable the feature; otherwise, displays false. |
| dynamic-gateway-port-loadbalancing | Displays true when you enable the feature; otherwise, displays false. |
| dynamic-storage-port-loadbalancing | Displays true when you enable the feature; otherwise, displays false. If this feature does not apply to the storage, no output appears. |
| dynamic-gateway-port-failover | Displays true when you enable the feature; otherwise, displays false. |
| dynamic-storage-port-failover | Displays true when you enable the feature; otherwise, displays false. If this feature does not apply to the storage, no output appears. |
| active-slots | Slots on which ITL traffic actively runs. |

## Examples

The following example displays the ITLs in the configuration file on the server switch:

```
SFS-3012R# show fc srp itl

================================================================================
                                    SRP ITL
================================================================================
                                    guid: 00:05:ad:00:00:01:29:c5
                               extension: 00:00:00:00:00:00:00:00
                             target-wwpn: 21:00:00:04:cf:f6:c2:ab
                                fc-lunid: 00:00:00:00:00:00:00:00
                               srp-lunid: 00:00:00:00:00:00:00:00
               logical-id (raw 64 bytes): 01:03:00:08:20:00:00:04:cf:f6:c2:ab:00:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
          logical-id (formatted display): 2000000000000000
                             description: itl
                         device-category: random
                              lun-policy: non restricted
                    non-restricted-ports: none
                            active-ports: 6/1
                         physical-access: 6/1
                                 hi-mark: 16
                               max-retry: 5
```

```
                          min-io-timeout: 10
                   dynamic-path-affinity: false
      dynamic-gateway-port-loadbalancing: true
      dynamic-storage-port-loadbalancing:
           dynamic-gateway-port-failover: false
           dynamic-storage-port-failover:
                            active-slots: 6

Total: 1 itls.
```

## Related Commands

**fc srp itl**
**fc srp lu**
**show fc srp it**
**show interface fc**

# show fc srp itl-statistics

Enter this command without any arguments to display the SRP/Fibre Channel statistics for every ITL. To display ITL I/O statistics, enter the **show fc srp itl-statistics** command in user EXEC mode or privileged EXEC mode.

**show fc srp itl-statistics** [*guid extension wwpn LUN*]

## Syntax Description

| | |
|---|---|
| *guid* | (Optional) Global unique identifier (GUID) of the initiator. |
| *extension* | (Optional) GUID extension of the initiator. |
| *wwpn* | (Optional) World-wide port name (WWPN) of the target port on the FC storage device. |
| *LUN* | (Optional) Logical unit number (LUN) of the FC storage device. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

Table 3-30 describes the output of the **show fc srp itl-statistics** command.

*Table 3-30 show fc srp itl-statistics Command Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the initiator. |
| extension | GUID extension of the initiator. |
| target-wwpn | WWPN of the target. |
| srp-lunid | LUN ID of the LUN in the ITL. |
| slot-id | Slot on the server switch in which the FC gateway resides. |
| srp-cmds-outstanding | Cumulative number of outstanding SRP commands. |
| srp-errors | Cumulative number of SRP errors. |
| srp-initiated-ios | Total number of SRP I/O requests. |
| srp-bytes-read | Cumulative number of SRP bytes read by one or all FC gateways. |
| srp-bytes-written | Cumulative number of SRP bytes written by one or all FC gateways. |
| fcp-cmds-outstanding | Cumulative number of outstanding FC commands. |
| fcp-cmds-completed | Cumulative number of commands that one or all FC gateways completed. |

*Table 3-30 show fc srp itl-statistics Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| fcp-errors | Cumulative number of FC errors on one or all gateways. |
| fcp-initiated-ios | Total number of FC I/O requests. |
| fcp-bytes-read | Cumulative number of FC bytes read by one or all FC gateways. |
| fcp-bytes-written | Cumulative number of FC bytes written by one or all FC gateways. |

## Examples

The following example displays ITL traffic statistics for the ITLs in the configuration file on the server switch:

```
SFS-3012R# show fc srp itl-statistics
===========================================================================
                               SRP ITL statistics
===========================================================================
                    guid: 00:02:c9:00:01:1d:aa:00
               extension: 00:00:00:00:00:00:00:00
             target-wwpn: 20:01:00:60:45:17:36:1c
               srp-lunid: 00:00:00:00:00:00:00:00
                 slot-id: 5
    srp-cmds-outstanding: 0
              srp-errors: 0
       srp-initiated-ios: 0
          srp-bytes-read: 0
       srp-bytes-written: 0
    fcp-cmds-outstanding: 0
      fcp-cmds-completed: 0
              fcp-errors: 0
       fcp-initiated-ios: 0
          fcp-bytes-read: 0
       fcp-bytes-written: 0
```

## Related Commands

**fc srp itl**
**show fc srp statistics**

# show fc srp lu

To display attributes of logical units, enter the **show fc srp lu** command in user EXEC mode or privileged EXEC mode.

**show fc srp lu** [*logical-id*]

## Syntax Description

| | |
|---|---|
| *logical-id* | (Optional) LU identifier, in 64-byte, hexadecimal format. Be sure to omit all colons. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

Table 3-31 describes the fields in the **show fc srp lu** command output.

*Table 3-31 show fc srp lu Command Field Descriptions*

| Field | Description |
|---|---|
| logical-id (formatted display) | ID of the LUN. |
| description | User-defined LU description. |
| device-category | Displays “random” or “sequential” to identify the type of LUN. |
| targets | Displays the WWPN of the target in which the LUN resides. |
| hi-mark | The maximum number of outstanding requests from the initiator to the storage that the ITL can maintain. |
| max-retry | Displays the number of failed communication attempts that must occur before the LUN identifies the initiator as inaccessible. |
| min-io-timeout | Maximum amount of time that elapses before a SRP request times out. |
| dynamic-path-affinity | Displays true if you enable the feature and false if you disable the feature. |
| dynamic-gateway-port-loadbalancing | Displays true if you enable the feature and false if you disable the feature. |

Table 3-31 show fc srp lu Command Field Descriptions (continued)

| Field | Description |
|---|---|
| dynamic-storage-port-loadbalancing | Displays true if you enable the feature and false if you disable the feature. |
| vendor-id | Vendor-assigned ID of the LUN. |
| product-id | Vendor-assigned product ID of the LUN. |
| product-revision | Manufacturer-assigned product revision number. |
| physical-access | FC gateway Ports on your server switch that connect to the LU. |
| size | Size of the LUN. |

## Examples

The following example displays the LUs (storage disks) that connect to the server switch:

```
ts360-7> show fc srp lu


================================================================================
                                    SRP LUs
================================================================================
               logical-id (raw 64 bytes): 02:01:00:14:48:49:54:41:43:48:49:20:44
:36:30:30
                                        : 33:32:34:38:30:30:30:30:00:00:00:00:00
:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00
:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00
:00:00:00
          logical-id (formatted display): HITACHI D60032480000
                             description: lu-HITACHI-DF600F-0000(NOT 4 Me)
                         device-category: random
                                 targets: 50:06:0e:80:00:43:3c:02  50:06:0e:80:0
0:43:3c:03
                                          50:06:0e:80:00:43:3c:01  50:06:0e:80:0
0:43:3c:00

                                 hi-mark: 16
                               max-retry: 5
                          min-io-timeout: 10
                   dynamic-path-affinity: false
      dynamic-gateway-port-loadbalancing: true
           dynamic-gateway-port-failover: false
                               vendor-id: HITACHI
                              product-id: DF600F
                        product-revision: 0000
                         physical-access: 5/1,8/1
                                    Size: 0x1:600000
```

The following example displays details about one LU:

```
SFS-3012R# show fc srp lu
0103000820000004cf86a01f000000000000000000000000000000000000000000000000000000000
00000000000000000000000000000000000000

================================================================================
                                    SRP LUs
================================================================================
               logical-id (raw 64 bytes): 01:03:00:08:20:00:00:04:cf:86:a0:1f:00:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
                                        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
          logical-id (formatted display): 2000000000000000
                             description: lu-SEAGATE -ST336753FC      -0005
                         device-category: random
                                 targets: 21:00:00:04:cf:86:a0:1f
                                 hi-mark: 16
                               max-retry: 5
                          min-io-timeout: 10
                   dynamic-path-affinity: false
      dynamic-gateway-port-loadbalancing: true
           dynamic-gateway-port-failover: false
                               vendor-id: SEAGATE
                              product-id: ST336753FC
                        product-revision: 0005
                         physical-access: 5/1-5/2,7/2
                                    Size: 0x1:600000
SFS-3012R#
```

## Related Commands

fc srp lu
show fc srp initiator
show fc srp itl
show interface fc

# show fc srp statistics

To display aggregate SRP I/O statistics for all ITLs on your server switch, enter the **show fc srp statistics** command in user EXEC mode or privileged EXEC mode.

**show fc srp statistics**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes:

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

Use the **show fc srp statistics** command to determine load and error count.

The statistical information consists of the following:

- SRP and Fibre Channel commands initiated, outstanding, and completed.
- SRP and Fibre Channel bytes read and written.
- SRP and Fibre Channel errors reported.

Table 3-32 describes the fields in the **show fc srp statistics** command output.

*Table 3-32 show fc srp statistics Command Field Descriptions*

| Field | Description |
|---|---|
| link-events | Total number of link events (link up, link down) processed by the Fibre Channel interface gateways. |
| srp-cmds-outstanding | Total number of SRP commands outstanding on the Fibre Channel interface gateways. |
| srp-cmds-completed | Total number of SRP commands completed on the Fibre Channel interface gateways. |
| srp-errors | Total number of SRP errors encountered on the Fibre Channel interface gateways. |
| srp-initiated-ios | Total number of I/O transactions requested by the SRP initiator. |
| srp-bytes-read | Total number of I/O bytes read by the SRP initiator that connects to this chassis. |
| srp-bytes-written | Total number of I/O bytes written by the SRP initiator. |

*Table 3-32 show fc srp statistics Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| srp-connections | Total number of connections used by the SRP initiator. |
| fcp-cmds-outstanding | Total number of FCP commands outstanding on the Fibre Channel interface gateways. |
| fcp-cmds-completed | Total number of FCP commands completed on the Fibre Channel interface gateways. |
| fcp-errors | Total number of FCP errors encountered on the Fibre Channel interface gateways. |
| fcp-initiated-ios | Total number of I/O responses by the Fibre Channel device to SRP initiator requests. |
| fcp-bytes-read | Total number of I/O bytes read by the target device. |
| fcp-bytes-written | Total number of I/O bytes written by the target device. |

## Examples

The following example displays traffic statistics for all of the ITLs on your server switch:

```
SFS-3012R# show fc srp statistics

================================================================================
                             SRP Global Statistics
================================================================================
              link-events: 1410805
     srp-cmds-outstanding: 0
       srp-cmds-completed: 4
               srp-errors: 0
        srp-initiated-ios: 4
           srp-bytes-read: 288
        srp-bytes-written: 0
          srp-connections: 2
     fcp-cmds-outstanding: 0
       fcp-cmds-completed: 2
               fcp-errors: 0
        fcp-initiated-ios: 2
           fcp-bytes-read: 0
        fcp-bytes-written: 0
```

## Related Commands

**show fc srp initiator**
**show fc srp itl**
**show interface fc**

# show fc srp target

To display the properties of targets (that you manually configured or that your server switch discovered), enter the **show fc srp target** command in user EXEC mode or privileged EXEC mode.

**show fc srp target** [*wwpn*]

## Syntax Description

| | |
|---|---|
| *wwpn* | (Optional) World-wide port name (WWPN) of the target port. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

Enter this command without any arguments to display all target devices known to the server switch.

Table 3-33 describes the fields in the **show fc srp target** command output.

*Table 3-33 show fc srp target Command Field Descriptions*

| Field | Description |
|---|---|
| wwpn | Fibre Channel interface port name of the SRP target. |
| wwnn | World-wide node name of the target. |
| description | Text label used to identify the service in the Element Manager GUI or CLI output. If you do not apply a description, the system defaults to the service name. |
| ioc-guid | InfiniBand I/O controller (IOC) through which the initiator accesses the target. On the Cisco SFS 3012R and Cisco SFS 3001 platforms, the IOC identifies a Fibre Channel gateway slot. |
| service-name | Name of the service to associate with the target. |
| protocol-ids | Protocols that the target supports. |
| fc-address | 3-byte Fibre Channel Protocol address of the target. |
| mtu | Maximum transmission unit, in bytes, of the target. |
| connection-type | Displays “down” if the connection cannot pass traffic. Displays “nl-port” when the target communicates with the virtual port on the Fibre Channel gateway. |
| physical -access | Fibre Channel port that physically connects to the target. |

## Examples

The following example displays the targets that connect to the server switch:

```
SFS-3012R# show fc srp target
===========================================================================
                                  SRP Targets
===========================================================================
                     wwpn: 20:01:00:60:45:17:36:1c
                     wwnn: 20:09:00:60:45:17:36:1c
              description: SRP.T10:200100604517361C
                 ioc-guid: 00:05:ad:00:00:01:38:80
             service-name: SRP.T10:200100604517361C
             protocol-ids: 04:00:00:00:00:00:00:00:00:00
               fc-address: 61:1b:13
                      mtu: 0
          connection-type: nl-port
          physical-access: 5/1-5/2
```

## Related Commands

**fc srp target**
**show fc srp initiator**

# show fc srp-global

To display the permissions that apply to all new ITs and ITLs, enter the **show fc srp-global** command in user EXEC mode or privileged EXEC mode.

**show fc srp-global**

## Syntax Description

This command has no arguments or keywords.

## Defaults

See the **fc srp-global itl** command for defaults.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

## Examples:

The following example displays the default attributes of new ITLs:

```
SFS-3012R# show fc srp-global

================================================================================
                             SRP Global Information
================================================================================
                        default-gateway-portmask-policy : restricted
                                     default-lun-policy : restricted
                                    default-itl-hi-mark : 16
                                  default-itl-max-retry : 5
                             default-itl-min-io-timeout : 10
                      default-itl-dynamic-path-affinity : false
        default-itl-dynamic-gateway-port-load-balancing : true
              default-itl-dynamic-gateway-port-failover : false
                                default-seq-itl-hi-mark : 1
                              default-seq-itl-max-retry : 1
                         default-seq-itl-min-io-timeout : 60
                  default-seq-itl-dynamic-path-affinity : false
    default-seq-itl-dynamic-gateway-port-load-balancing : false
          default-seq-itl-dynamic-gateway-port-failover : true
```

## Related Commands

**fc srp-global gateway-portmask-policy restricted**
**fc srp-global itl**
**fc srp-global lun-policy restricted**

# show host

To display the DNS name servers and domain name that your server switch uses, enter the **show host** command in user EXEC mode or privileged EXEC mode.

**show host**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Fibre Channel read-only user.

Use this command to display the network domain of the chassis and the DNS servers that your server switch uses to resolve network names to IP addresses.

Table 3-34 describes the fields in the **show host** command output.

*Table 3-34 show host Command Field Descriptions*

| Field | Description |
|---|---|
| name-server-one | IP address of the primary name server. |
| name-server-two | IP address of the backup name server. |
| domain-name | Host name of the server switch. |

## Examples

The following example displays the IP addresses of the DNS servers that the server switch uses to resolve host names:

```
SFS-7000P# show host
============================================================================
                          Host Information
============================================================================
          name-server-one : 10.3.106.20
          name-server-two : 0.0.0.0
              domain-name : shasta
SFS-7000P#
```

## Related Commands

- **hostname**
- **ip domain-name**
- **ip name-server-one**
- **ip name-server-two**
- **show system-services**

# show ib dm ioc

To display the Device Manager input/output controller (IOC) configuration, enter the **show ib dm ioc** command in user EXEC mode or privileged EXEC mode.

**show ib dm ioc** [*ioc-guid* | **all**] [**services**]

## Syntax Description

| | |
|---|---|
| *ioc-guid* | (Optional) GUID of the controller that you want to view. |
| **all** | (Optional) Displays all controllers on the InfiniBand fabric. |
| **services** | (Optional) Displays the services that run on the input/output controllers. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

General read-only user.

Table 3-35 describes the fields in the **show ib dm ioc** command output:

*Table 3-35 show ib dm ioc Command Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the controller. |
| description | User-assigned description. |
| vendor-id | Organization Unique Identifier (OUI) of the vendor. |
| ioc-device-id | Vendor-assigned device identifier. |
| device-version | Vendor-assigned device version. |
| subsystem-vendor-id | Vendor-assigned subsystem vendor identifier. |
| subsystem-id | Vendor-assigned subsystem identifier. |
| io-class | I/O class that the IOC supports. |
| io-subclass | Subclass of the I/O class protocol of the IOC. |
| protocol | Standard protocol definition that the IOC supports. |
| protocol-version | Protocol version that the IOC supports. |
| send-msg-q-depth | Maximum number of messages that the send message queue supports. |
| rdma-read-q-depth | Maximum depth of the per-channel RDMA Read Queue. |
| send-msg-size | Maximum size, in bytes, of send messages. |

*Table 3-35 show ib dm ioc Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| rdma-transfer-size | Maximum size, in bytes, of outbound RDMA transfers that the IOC initiates. |
| controller-op-cap | Integer value (from 8 cumulative bits) between 1 and 255 that represents the operation types that the IOC supports.<br>• bit 0: ST; Send Messages To IOC<br>• bit 1: SF; Send Messages From IOC<br>• bit 2: RT; RDMA Read Requests To IOC<br>• bit 3: RF; RDMA Read Requests From IOC<br>• bit 4: WT; RDMA Write Requests To IOC<br>• bit 5: WF; RDMA Write Requests From IOC<br>• bit 6: AT; Atomic Operations To IOC<br>• bit 7: AF; Atomic Operations From IOC |
| service-entries | Number of services that the IOC provides. |

Table 3-36 describes the fields in the **services** keyword output.

*Table 3-36 services Keyword Display Output*

| Field | Description |
|---|---|
| ioc-guid | GUID of the node that provides the service. |
| service-name | ASCII identifier of the service. |
| service-id | Numeric identifier that nodes use to call the service. |

## Examples

The following example displays all input/output controller configurations of on the fabric:

```
SFS-7000P> show ib dm ioc

================================================================================
                         IB Device Manager I/O Controller
================================================================================
                                     guid: 00:05:ad:00:00:00:14:fe
                              description:
                                vendor-id: 0x5ad
                            ioc-device-id: 0x5ad
                           device-version: 1
                      subsystem-vendor-id: 0x5ad
                             subsystem-id: 0x5ad
                                 io-class: 256
                              io-subclass: 24734
                                 protocol: 264
                         protocol-version: 1
                         send-msg-q-depth: 65535
                       rdma-read-q-depth: 65535
```

```
          send-msg-size: -1
     rdma-transfer-size: -1
      controller-op-cap: 255
        service-entries: 14
```

The following example displays all services on all of the input/output controllers in the fabric (output abridged):

```
SFS-7000P> show ib dm ioc services

================================================================================
                           IB Device Manager Services
================================================================================
                               ioc-guid: 00:05:ad:00:00:00:14:fe
                           service-name: SRP.T10:2200000C5002CA21
                             service-id: 00:00:00:00:00:00:00:66


                               ioc-guid: 00:05:ad:00:00:00:14:fe
                           service-name: SRP.T10:2200000C50056281
                             service-id: 00:00:00:00:00:00:00:66
```

## Related Commands

show ib dm iou

# show ib dm iou

To display the Device Manager input/output unit (IOU) configuration, enter the **show ib dm iou** command in user EXEC mode or privileged EXEC mode.

**show ib dm iou**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

General read-only user.

Table 3-37 describes the fields in the **show ib dm** command output.

*Table 3-37 show ib dm Command Output Fields*

| Field | Description |
|---|---|
| change-id | Cumulative number of changes to the controller list since the device last booted. |
| max-controllers | Maximum number of controllers that your device can support. |
| diag-device-id | Displays "1" if diagnostics can provide IOC details; otherwise, displays "0." |
| option-rom | Indicates the presence or absence of Option ROM. |
| controllers | Lists the virtual slots on your server switch that run IOC controllers.<br>**Note** All references to "slot" in this field see virtual slots, not physical slots on the server switch. |

## Examples

The following example displays the DM I/O details for the server switch:

```
SFS-7000P> show ib dm iou
================================================================================
                           IB Device Manager I/O Unit
================================================================================
                               change-id: 2352
                         max-controllers: 1
```

```
diag-device-id: 0
    option-rom: absent
   controllers: slot-1 IOC present
```

## Related Commands

show ib dm ioc

# show ib pm config

To view the performance monitoring configuration on an InfiniBand subnet, enter the **show ib pm config** command in user EXEC mode or privileged EXEC mode.

**show ib pm config subnet-prefix** *prefix*

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the InfiniBand subnet for which you want to view performance monitoring. |
| *prefix* | Subnet prefix of the InfiniBand subnet for which you want to view performance monitoring |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-38 describes the fields in the **show ib pm config** command output.

*Table 3-38 show ib pm config Command Output Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the InfiniBand subnet with the performance monitoring configuration you are viewing. |
| state | State of performance monitoring (enabled or disabled). |
| polling period | Interval at which the feature polls ports and connections (in seconds). |
| start-delay | Time that elapses before performance managing executes (in seconds). |

## Examples

The following example displays the output of the show ib pm config command:

```
SFS-7000# show ib pm config subnet-prefix fe:80:00:00:00:00:00:00
================================================================================
                                IB PM Configuration
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
```

```
           state : enable
  polling-period : 10
     start-delay : 60
```

## Related Commands

**ib pm**

# show ib pm connection counter

To view the performance monitoring counters on all ports on a connection, enter the **show ib pm connection counter** command in user EXEC mode or privileged EXEC mode.

**show ib pm connection counter subnet-prefix** *prefix* **src-lid** *source* **dst-lid** *destination*

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the InfiniBand subnet for which you want to view performance monitoring. |
| *prefix* | Subnet prefix of the InfiniBand subnet for which you want to view performance monitoring |
| **src-lid** | Specifies the source Local Identifier (LID) of the connection. |
| *source* | Source LID of the connection. |
| **dst-lid** | Specifies the destination LID of the connection. |
| *destination* | Destination LID of the connection. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-39 describes the fields in the **show ib pm connection counter** command output.

*Table 3-39 show ib pm connection counter Command Output Fields*

| Field | Description |
|---|---|
| subnet-prefix | Subnet to which the connection belongs. |
| node-guid | GUID of the node belonging to the connection. |
| port-num | Port number on the node belonging to the connection. |
| chassis-guid | GUID of the chassis to which the port belongs (if available). |
| slot-num | Slot number on the chassis to which the port belongs (if available). |
| ext-port-num | Port number on the chassis slot to which the port belongs (if available). |
| data-is-valid | If the value is false, re-run the command to obtain valid data. |
| symbol-errors | Symbol error counter. |

Table 3-39 show ib pm connection counter Command Output Fields (continued)

| Field | Description |
|---|---|
| link-recovery-errors | Link Error Recovery counter. |
| link-downs | Link Downed counter. |
| rcv-errors | Port Receive Error counter. |
| rcv-remote-phy-errors | Port Receive Remote Physical Error counter. |
| rcv-switch-relay-errors | Port Receive Switch Relay Error counter. |
| xmit-discards | Port Transmit Discards counter. |
| xmit-constraint-errors | Port Transmit Constraint Error counter. |
| rcv-constraint-errors | Port Receive Constraint Error counter. |
| local-link-integrity-errors | Local Link Integrity Error counter. |
| excessive-buf-overrun-errors | Excessive Buffer Overrun Error counter. |
| vl15-droppeds | VL15 Dropped counter. |
| xmit-data | Port Transmit Data counter. |
| rcv-data | Port Receive Data counter. |
| xmit-pkts | Port Transmit Packet counter. |
| rcv-pkts | Port Receive Packet counter. |

See Section 16.1.3.5, "PortCounters," in *InfiniBand Architecture, Vol. 1, Release 1.2*, for more information about the port counters.

## Examples

The following example displays performance monitoring counters for all ports on a connection:

```
SFS-7000# show ib pm connection counter subnet-prefix fe:80:00:00:00:00:00:00 src-l
id 2 dst-lid 2

================================================================================
                            IB PM Port Counter Table
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
                    node-guid : 00:05:ad:00:00:00:1e:1c
                     port-num : 1
                 chassis-guid : 00:05:ad:03:00:00:1e:1c
                     slot-num : 1
                 ext-port-num : 1
                data-is-valid : true
                symbol-errors : 65535
         link-recovery-errors : 0
                   link-downs : 2
                   rcv-errors : 0
        rcv-remote-phy-errors : 0
      rcv-switch-relay-errors : 0
                xmit-discards : 0
       xmit-constraint-errors : 0
        rcv-constraint-errors : 0
  local-link-integrity-errors : 0
 excessive-buf-overrun-errors : 0
                vl15-droppeds : 0
                    xmit-data : 288
 rcv-data : 1512
xmit-pkts : 4
 rcv-pkts : 21
```

## Related Commands

**ib pm**

# show ib pm connection monitor

To view the state of a performance monitored connection, enter the **show ib pm connection monitor** command in user EXEC mode or privileged EXEC mode.

**show ib pm connection monitor subnet-prefix** *prefix* **src-lid** *source* **dst-lid** *destination*

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the InfiniBand subnet for which you want to view performance monitoring. |
| *prefix* | Subnet prefix of the InfiniBand subnet for which you want to view performance monitoring. |
| **src-lid** | Specifies the source Local Identifier (LID) of the connection. |
| *source* | Source LID of the connection. |
| **dst-lid** | Specifies the destination LID of the connection. |
| *destination* | Destination LID of the connection. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-40 describes the fields in the **show ib pm connection monitor** command output.

*Table 3-40 show ib pm connection monitor Command Output Fields*

| Field | Description |
|---|---|
| subnet-prefix | Subnet to which the monitored connection belongs. |
| src-lid | Integer value representing the source LID of the connection. |
| dst-lid | Integer value representing the destination LID of the connection. |
| error-status | Error threshold status. If any of the ports in the connection have exceeded a user-defined error threshold, the error-status will be exceeded. |
| util-status | Utilization threshold status. If any of the ports in the connection have exceeded a user-defined utilization rate threshold, the error-status will be exceeded. |

## Examples

The following example displays the connection monitor table of a connection:

```
SFS-7000# show ib pm connection monitor subnet-prefix fe:80:00:00:00:00:00:00 src-l
id 2 dst-lid 2


================================================================================
                         IB PM Connection Monitor Table
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 2
                  dst-lid : 2
             error-status : unknown
              util-status : unknown
```

## Related Commands

**ib pm**

# show ib pm port counter config

To display whether PM access to port counters is enabled or disabled, enter the **show ib pm port counter config** command in user EXEC mode or privileged EXEC mode. Use the following syntax for this version of the command:

**show ib pm port counter config subnet-prefix** *prefix*

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the counters to view. |
| *prefix* | Subnet prefix of the counters to view. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-41 describes the fields in the **show ib pm port counter config** command output.

*Table 3-41 show ib pm port counter config Command Output Fields*

| Field | Description |
|---|---|
| subnet-prefix | Subnet to which the port counter configuration applies. |
| state | State of port counter access. If 'enabled', then access to port counters is enabled. |

## Examples

The following example shows that the performance monitoring of port counters is enabled:

```
SFS-7000# show ib pm port counter config subnet-prefix fe:80:00:00:00:00:00:00
================================================================================
IB PM Port Counter Configuration
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
state : enabled
```

# show ib pm port counter

To display the performance monitoring counters for one or more InfiniBand ports, enter the **show ib pm port counter** command in user EXEC mode or privileged EXEC mode. Use the following syntax for this version of the command:

**show ib pm port counter subnet-prefix** *prefix* **[node-guid** *guid* **[port-num** *port***]]**

## Syntax Descriptionx

| | |
|---|---|
| **subnet-prefix** | Subnet prefix to which the port belongs. |
| *prefix* | Prefix number such as fe:80:00:00:00:00:00:00. |
| **node-guid** | (Optional) GUID of the node to which the port belongs. |
| *guid* | (Optional) GUID number such as 00:05:ad:00:00:01:0c:19. |
| **port-num** | (Optional) Port number on the node. |
| *port* | (Optional) Port number such as 1. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

Table 3-42 describes the fields in the **show ib pm port counter** command output.

*Table 3-42 show ib pm port counter Command Output Fields*

| Field | Description |
|---|---|
| subnet-prefix | Subnet to which the port belongs. |
| node-guid | GUID of the node to which the port belongs. |
| port-num | Port number on the node. |
| chassis-guid | GUID of the chassis to which the port belongs (if available). |
| slot-num | Slot number on the chassis to which the port belongs (if available). |
| ext-port-num | Port number (if available) on the chassis slot to which the port belongs. |
| data-is-valid | If false, re-run the command to obtain valid data. |
| symbol-errors | Symbol error counter. |
| link-recovery-errors | Link Error Recovery counter. |
| link-downs | Link Downed counter. |
| rcv-errors | Port Receive Error counter. |
| rcv-remote-phy-errors | Port Receive Remote Physical Error counter. |

*Table 3-42 show ib pm port counter Command Output Fields (continued)*

| Field | Description |
|---|---|
| rcv-switch-relay-errors | Port Receive Switch Relay Error counter. |
| xmit-discards | Port Transmit Discards counter. |
| xmit-constraint-errors | Port Transmit Constraint Error counter. |
| rcv-constraint-errors | Port Receive Constraint Error counter. |
| local-link-integrity-errors | Local Link Integrity Error counter. |
| excessive-buf-overrun-errors | Excessive Buffer Overrun Error counter. |
| vl15-droppeds | VL15 Dropped counter. |
| xmit-data | Port Transmit Data counter. |
| rcv-data | Port Receive Data counter. |
| xmit-pkts | Port Transmit Packet counter. |
| rcv-pkts | Port Receive Packet counter. |

See Section 16.1.3.5, "PortCounters," in *InfiniBand Architecture, Vol. 1, Release 1.2*, for more information on the port counters.

## Examples

The following example displays the performance monitoring configuration for an InfiniBand port subnet-prefix:

```
SFS-7000D> show ib pm port counter subnet-prefix fe:80:00:00:00:00:00:00


================================================================================
                            IB PM Port Counter Table
================================================================================
                 subnet-prefix : fe:80:00:00:00:00:00:00
                     node-guid : 00:05:ad:00:00:00:1e:1c
                      port-num : 1
                  chassis-guid : 00:05:ad:03:00:00:1e:1c
                      slot-num : 1
                  ext-port-num : 1
                 data-is-valid : true
                 symbol-errors : 65535
          link-recovery-errors : 0
                    link-downs : 2
                    rcv-errors : 0
         rcv-remote-phy-errors : 0
       rcv-switch-relay-errors : 0
                 xmit-discards : 0
        xmit-constraint-errors : 0
         rcv-constraint-errors : 0
   local-link-integrity-errors : 0
  excessive-buf-overrun-errors : 0
                 vl15-droppeds : 0
                     xmit-data : 288
                      rcv-data : 1512
                     xmit-pkts : 4
                      rcv-pkts : 21
```

# show ib pm port monitor

To show the performance monitoring user-configured monitored ports, or the cumulative port counters, or the cumulative port counters for ports that have exceeded thresholds, enter the **show ib pm port monitor** command in user EXEC mode or privileged EXEC mode.

**show ib pm port monitor** [**counter** | **error-counter**] **subnet-prefix** *prefix* [**node-guid** guid [**port-num** *port*]]

## Syntax Description

| | |
|---|---|
| **counter** | (Optional) Show the counters accumulated since monitoring was enabled. |
| **error-counter** | (Optional) Show the counters accumulated for ports that have exceeded thresholds. |
| **subnet-prefix** | Specifies the subnet prefix of the ports configured for monitoring. |
| *prefix* | Subnet prefix of the ports configured for monitoring. |
| **node-guid** | (Optional) Specifies the GUID of the device with the ports that you want to view. |
| *guid* | (Optional) GUID of the device with the ports that you want to view. |
| **port-num** | (Optional) Specifies the port number of the port that you want to view. |
| *port* | (Optional) Port number of the port that you want to view. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-43 describes the fields in the **show ib pm port monitor** command output.

*Table 3-43 show ib pm port counter Command Output Fields*

| Field | Description |
|---|---|
| subnet-prefix | Subnet to which the connection belongs. |
| node-guid | GUID of the node belonging to the connection. |
| port-num | Port number on the node belonging to the connection. |
| chassis-guid | GUID of the chassis to which the port belongs (if available). |
| slot-num | Slot number on the chassis to which the port belongs (if available). |

*Table 3-43 show ib pm port counter Command Output Fields (continued)*

| Field | Description |
|---|---|
| ext-port-num | Port number on the chassis slot to which the port belongs (if available). |
| data-is-valid | If the value is false, re-run the command to obtain valid data. |
| error-status | Whether or not the error limit has been exceeded. |
| util status | Whether or not the util limit has been exceeded. |
| symbol-errors | Symbol error counter. |
| link-recovery-errors | Link Error Recovery counter. |
| link-downs | Link Downed counter. |
| rcv-errors | Port Receive Error counter. |
| rcv-remote-phy-errors | Port Receive Remote Physical Error counter. |
| rcv-switch-relay-errors | Port Receive Switch Relay Error counter. |
| xmit-discards | Port Transmit Discards counter. |
| rcv-data | Port Receive Data counter. |
| xmit-pkts | Port Transmit Packet counter. |
| rcv-pkts | Port Receive Packet counter. |

## Examples

The following example displays the user-configured monitored ports for a subnet-prefix:

```
SFS-7000# show ib pm port monitor subnet-prefix fe:80:00:00:00:00:00:00
================================================================================
                   IB PM Port Monitor Configured Ports Table
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:01:73:bf
                 port-num : 2

            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:01:73:bf
                 port-num : 3
```

The following example displays the performance monitoring cumulative counters:

```
SFS-7000P# show ib pm port monitor counter subnet-prefix fe:80:00:00:00:00:00:00
================================================================================
                         IB PM Port Monitor Table
================================================================================
          subnet-prefix : fe:80:00:00:00:00:00:00
              node-guid : 00:05:ad:00:00:01:3d:90
               port-num : 1
           chassis-guid : 00:00:00:00:00:00:00:00
               slot-num : 0
           ext-port-num : 0
          data-is-valid : true
           error-status : not-exceeded
            util-status : not-exceeded
          symbol-errors : 10
   link-recovery-errors : 1020
             link-downs : 1
             rcv-errors : 0
```

```
  rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
          xmit-discards : 3
Press any key to continue (Q to quit)
```

The following example displays the performance monitoring cumulative counters for all ports that have exceeded thresholds:

```
SFS-7000D> show ib pm port monitor error-counter subnet-prefix fe:80:00:00:00:00:00:00
```

## Related Commands

**ib pm**

# show ib pm threshold

To view performance monitoring thresholds, enter the **show ib pm threshold** command in user EXEC mode or privileged EXEC mode.

**show ib pm threshold subnet-prefix** *prefix*

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the thresholds to view. |
| *prefix* | Subnet prefix of the thresholds to view. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-44 describes the fields in the **show ib pm threshold** command output.

*Table 3-44 show ib pm threshold Command Output Fields*

| Field | Description |
|---|---|
| subnet-prefix | Subnet to which the threshold configuration applies. |
| symbol-errors | Threshold for Symbol Error counters. |
| link-recovery-errors | Threshold for Link Recovery Error counters. |
| link-downs | Threshold for Link Downed counters. |
| rcv-errors | Threshold for Port Receive Error counters. |
| rcv-remote-phy-errors | Threshold for Port Receive Remote Physical Error counters. |
| rcv-switch-relay-errors | Threshold for Port Receive Switch Relay Error counters. |
| xmit-discards | Threshold for Port Transmit Discard Error counters. |
| xmit-constraint-errors | Threshold for Port Transmit Constraint Error counters. |
| rcv-constraint-errors | Threshold for Port Receive Constraint Error counters. |
| local-link-integrity-errors | Threshold for Local Link Integrity Error counters. |
| excessive-buf-overrun-errors | Threshold for Excessive Buffer Overrun Error counters. |
| vl15-droppeds | Threshold for VL15 Dropped Error counters. |

*Table 3-44 show ib pm threshold Command Output Fields (continued)*

| Field | Description |
|---|---|
| xmit-rate | Threshold for transmit rate, as a percentage of total port bandwidth. |
| rcv-rate | Threshold for receive rate, as a percentage of total port bandwidth. |

## Examples

The following example displays performance monitoring thresholds:

```
SFS-7000# show ib pm threshold subnet-prefix fe:80:00:00:00:00:00:00

================================================================================
                                IB PM Thresholds
================================================================================
                 subnet-prefix : fe:80:00:00:00:00:00:00
                 symbol-errors : none
          link-recovery-errors : none
                    link-downs : 1
                    rcv-errors : none
         rcv-remote-phy-errors : none
       rcv-switch-relay-errors : none
                 xmit-discards : none
        xmit-constraint-errors : none
         rcv-constraint-errors : none
   local-link-integrity-errors : none
  excessive-buf-overrun-errors : none
                 vl15-droppeds : none
                     xmit-rate : 1
                      rcv-rate : 1
```

## Related Commands

**ib pm**

# show ib sm configuration

To display information about the subnet managers on your InfiniBand fabric, enter the **show ib sm configuration** command in user EXEC mode or privileged EXEC mode.

**show ib sm configuration** {**subnet-prefix** *prefix* | **all**} [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of subnet manager that you want to view. |
| *prefix* | Subnet prefix of the subnet manager that you want to view. |
| **all** | The current CLI can only report the local subnet manager configuration data. Therefore, the subnet-prefix value of "all" is just an alias to the subnet value of the subnet manager local to the CLI. |
| **summary** | (Optional) Displays an abridged form of the command output. The abridged information includes the subnet prefix, GUID, priority, and subnet manager key of the subnet managers. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-45 describes the fields in the **show ib sm configuration** command output.

*Table 3-45 show ib sm configuration Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | 64-bit value used that identifies the InfiniBand subnet. This unique subnet identifier joins with the GUID to form the global identifier (GID) of the port. Each GID within a subnet has the same subnet prefix. |
| guid | GUID of this subnet manager. |
| priority | User-assigned priority for this subnet manager. You must enter an integer between 0 and 15. The value defaults to 10.<br>**Note** When the chassis boots, the subnet manager priority defaults to 10. When you add the subnet manager manually, the priority defaults to 10. |
| sm-key | 64-bit subnet management key assigned to the subnet manager. The sm-key defaults to 00:00:00:00:00:00:00:00. |

*Table 3-45 show ib sm configuration Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| oper-status | Operational status of the subnet manager. Self-detection determines this status. The value appears as notActive, discovering, standby, or master. If notActive appears, the subnet manager has not been enabled or has been disabled. The discovering output appears when the subnet manager sweeps the fabric. If standby appears, the subnet manager serves as a slave subnet manager. If only one subnet manager runs on the fabric, it serves as the master. |
| act-count | Activity counter that increments each time the subnet manager issues a subnet management packet (SMP) or performs other management activities. |
| status | Status of the subnet manager. It appears as **active** or **inactive**. If **active**, it is actively managing subnets. If **inactive**, it is not managing subnets. |
| master-poll-interval | Interval at which the slave subnet manager polls the master to see if the master is still active. |
| master-poll-retries | Number of unanswered polls that cause the slave to identify the master as inactive. |
| max-active-sms | Maximum number of standby subnet managers that the master supports. |
| LID-mask-control | Number of path bits present in the base LID to each channel adapter port. Increasing the LMC value increases the number of LIDs assigned to each port to increase the number of potential paths to reach each port. |
| switch-life-time | The packet lifetime inside a server switch. |
| switch-hoq-life-time | The packet lifetime at the head-of-queue of a switch port. |
| host-hoq-life-time | The lifetime of a packet at the head-of-queue of the host port. |
| max-hops | Maximum number of hops considered by the Subnet Manager when calculating routes in a subnet. The value range is 0 - 64. The default value is 64. A value of 0 indicates that the Subnet Manager has been configured to calculate and use the lowest possible value that ensures connectivity between all endpoints. |
| mad-retries | Number of times the subnet manager will retry to send a management diagram after not receiving a response. The value range is 0 - 100; the default value is 5. |
| node-timeout | Minimum amount of time in seconds that a HCA can be unresponsive before the subnet manager will remove it from the InfiniBand fabric. The value range is 1 - 2000 seconds; the default value is 10 seconds. |
| wait-report-response <true \| false> | Determines whether or not the subnet manager waits to receive a ReportResponse MAD in response to the Report MAD that it forwards. This value is Boolean. If false, the subnet manager sends the Report MAD only once; if set to true, the subnet manager continues to send the Report MAD until either the ReportResponse MAD is received or the maximum number of Report MAD have been sent. The default value is false. |
| sa-mad-queue-depth | Size of the SA's internal queue for receiving a management diagram. The value range is 256 - 1024; the default value is 256. |

## Examples

The following example shows the detailed configuration of a subnet manager:

```
SFS-7000P# show ib sm configuration subnet-prefix fe:80:00:00:00:00:00:00

================================================================================
                           Subnet Manager Information
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                     guid : 00:05:ad:00:00:01:5f:f2
                 priority : 10
                   sm-key : 00:00:00:00:00:00:00:00
              oper-status : master
                act-count : 43392
      sweep-interval(sec) : 10
   response-timeout(msec) : 200
  master-poll-intval(sec) : 3
      master-poll-retries : 2
           max-active-sms : 0
         LID-mask-control : 0
         switch-life-time : 20
     switch-hoq-life-time : 20
       host-hoq-life-time : 20
                 max-hops : 64
              mad-retries : 5
        node-timeout(sec) : 5
     wait-report-response : false
       sa-mad-queue-depth : 256
```

The following example shows the summary configuration of a subnet manager:

```
SFS-7000P> show ib sm configuration subnet-prefix fe:80:00:00:00:00:00:00 summary

================================================================================
                      Subnet Manager Configuration Summary
================================================================================
subnet-prefix           guid                    priority sm-key
--------------------------------------------------------------------------------
fe:80:00:00:00:00:00:00 00:05:ad:00:00:01:5f:f2 10       00:00:00:00:00:00:00:00
SFS-7000P>
```

## Related Commands

ib sm
ib-agent
show ib-agent switch
name

# show ib sm db-sync

Use this command to determine the following:

- If the database of the master subnet manager synchronizes with one or more standby databases
- The frequency with which the databases synchronize

To display subnet manager synchronization information, enter the **show ib sm db-sync** command in user EXEC mode or privileged EXEC mode.

**show ib sm db-sync subnet-prefix** {*prefix* | **all**}

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager with the synchronization status that you want to view. |
| *prefix* | Prefix of the subnet manager with the synchronization status that you want to view. |
| **all** | Displays synchronization data for all subnet managers on the fabric. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-46 describes the fields in the **show ib sm db-sync** command output.

*Table 3-46 show ib sm db-sync Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the subnet with the synchronization information that you want to view. |
| enable | Displays true if an administrator has enabled synchronization; otherwise, displays false. |
| max-backup-sms | The maximum number of backup subnet managers that the master subnet manager supports. |
| session-timeout | The interval, in seconds, during which a synchronization session status management datagram packet must arrive at the master subnet manager to maintain synchronization. |

*Table 3-46 show ib sm db-sync Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| poll-interval | Interval at which the master subnet manager polls an active slave subnet manager to verify synchronization. |
| cold-sync-timeout | Maximum amount of time in which subnet managers can perform a cold synchronization. During the cold-sync, the master subnet manager copies all out-of-sync tables to the standby subnet manager. |
| cold-sync-limit | Maximum number of cold synchronizations that can take place during the cold-sync period. |
| cold-sync-period | Length of the interval during which cold-syncs can occur. |
| new-session-delay | Amount of time that the master subnet manager waits before it attempts to initiate a synchronization session with a new subnet manager. |
| resync-interval | Specifies the interval at which the master subnet manager sends a re-synchronization request to all active synchronization sessions. |
| state | Specifies whether or not the subnet manager is synchronized with the backup. |

## Examples

The following example displays subnet manager synchronization information:

```
SFS-7000P> show ib sm db-sync subnet-prefix fe:80:00:00:00:00:00:00


================================================================================

              Subnet Manager Database Synchronization Information
================================================================================

            subnet-prefix : fe:80:00:00:00:00:00:00
                   enable : false
           max-backup-sms : 1
          session-timeout : 10
            poll-interval : 3
        cold-sync-timeout : 10
          cold-sync-limit : 2
         cold-sync-period : 900
        new-session-delay : 120
          resync-interval : 3600
                    state : not in-sync
```

## Related Commands

ib sm db-sync

# show ib sm lft

Use this command to display the following:

- Linear forwarding information based on the block number.
- Linear entries that are currently in use by subnet manager.

To display linear forwarding information based on the LID block number, enter the **show ib sm lft** command in user EXEC mode or privileged EXEC mode. The command reports only entries that are currently in use by the subnet manager.

**show ib sm lft subnet-prefix** {*prefix* | **all**}[**lid** *lid* | **node-guid** *guid*]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager with the linear forwarding table that you want to view. |
| *prefix* | Subnet prefix of the subnet manager with the linear forwarding table that you want to view. |
| **all** | Alias to the subnet value of the local subnet manager. |
| **lid** | (Optional) Local ID of the port. |
| *lid* | (Optional) Local ID number. |
| **node-guid** | (Optional) GUID of the switch node in the subnet with the FDB that you want to access. |
| *guid* | (Optional) GUID number. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-47 describes the fields in the **show ib sm lft** command output.

*Table 3-47 show ib sm lft Command Field Descriptions*

| Field | Description |
|---|---|
| NodeGuid | GUID of the switch node in the subnet with the FDB that you want to access. |
| LID | Local ID of the port. |
| Port | Port number. |

## Examples

This example displays linear forwarding information for all subnets based on the LID block number:

```
SFS-7000D# show ib sm lft subnet-prefix all


================================================================================
                            Linear Forwarding Table
================================================================================
node-guid               lid      port
--------------------------------------------------------------------------------
00:05:ad:00:00:00:1e:1c 2        0
SFS-7000D#
```

# show ib sm mft

Use this command to display the following:

- Multicast forwarding information based on the block number.
- Multicast entries that are currently in use by a subnet manager.

To display multicast forwarding information based on the LID block number, enter the **show ib sm mft** command in user EXEC mode or privileged EXEC mode. The command reports only the entries that are currently in use by a subnet manager.

**show ib sm mft subnet-prefix** {*prefix* | **all**}[**lid** *lid* | **node-guid** *guid*]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager with the status that you want to view. |
| *prefix* | Displays the multicast forwarding table info for a specific subnet or all the subnets in the fabric. |
| **all** | An alias to the subnet value of the local subnet manager. |
| **lid** | (Optional) Local ID of the port. |
| *lid* | (Optional) Local ID number. |
| **node-guid** | (Optional) GUID of the switch node in the subnet with the FDB to be accessed. |
| *guid* | (Optional) GUID number. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

**Examples**

This example displays multicast forwarding information for all subnets, based on the LID block number:

```
SFS-3012R> show ib sm mft subnet-prefix all
================================================================================
Multicast Forwarding Table
================================================================================
node-guid                   mlid     port-mask(0, 1, 2 ...)
--------------------------------------------------------------------------------
00:05:ad:00:00:00:02:30     49152    0x1a
00:05:ad:00:00:00:02:30     49153    0x11a
00:05:ad:00:00:00:02:30     49154    0x11a
00:05:ad:00:00:00:02:30     49155    0x118
00:05:ad:00:00:00:02:30     49156    0x118
00:05:ad:00:00:00:02:30     49157    0x118
00:05:ad:00:00:00:02:30     49158    0x118
00:05:ad:00:00:00:02:30     49159    0x118
00:05:ad:00:00:00:02:30     49160    0x118
```

# show ib sm multicast

Troubleshoot with this command when a host does not receive a broadcast packet. Use this command to verify that the multicast group includes the host. The subnet manager dynamically configures all multicast groups. To display attributes of the multicast groups on your server switch, enter the **show ib sm multicast summary** command in user EXEC or privileged EXEC mode.

**show ib sm multicast** {**subnet-prefix** {*prefix* | **all**} [**mgid** *multicast-group-GID*] [**summary**] | **summary**}

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Prefix of the subnet containing multicast groups. |
| *prefix* | Prefix address, such as fe:80:00:00:00:00:00:00. |
| **all** | Display multicast groups configured in the entire fabric. |
| **mgid** | (Optional) Specifies the global identifier (GID) of the multicast group. |
| *multicast-group-GID* | (Optional) Global identifier, such as ff:12:40:1b:ff:f1:00:00:00:00:00:00:ff:ff:ff:ff. |
| **summary** | (Optional) Displays an abridged form of the data. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-48 describes the fields in the **show ib sm multicast** command output.

*Table 3-48 show ib sm multicast Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the subnet manager. |
| MGID | Multicast group identifier. |
| q-key | 16-bit Q-Key of this multicast group. |
| MLID | 16-bit LID of this multicast group. |
| mtu | Maximum transmission unit. |
| t-class | Traffic class for the multicast group. |
| p_key | 16-bit Partition Key for this multicast group. |

*Table 3-48 show ib sm multicast Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| rate | Traffic rate of this multicast group. |
| packet-life-time | Maximum estimated time for a packet to traverse a path within the multicast group. |
| SL | Service level of this multicast group. |
| flow-label | Flow label used for this multicast group. |
| hop-limit | Identifies the maximum number of hops a packet can take before being discarded. |
| scope | Scope of this multicast group. |
| user-configured | Displays true if a user configured the entry; otherwise, displays false. |
| port-GID | Global identifier of a port that belongs to the multicast group. |
| member-join-state | Type of membership that the member has in the multicast group. Members qualify as full members, non-members, or send-only members. |
| proxy-join-status | This field displays false except for trusted requests. For details, see *InfiniBand Architecture®, Vol. 1, Release 1.1*. |

## Examples

The following example displays a summary of the multicast groups on the server switch:

```
SFS-7000P# show ib sm multicast summary
===============================================================================
                     Summary of Multicast-Groups on Device
===============================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                     MGID : ff:12:40:1b:ff:f1:00:00:00:00:00:00:ff:ff:ff:ff

            multicast-group-members :
                 port-GID : fe:80:00:00:00:00:00:00:00:05:ad:00:00:00:12:bf
        member-join-state : full-member
        proxy-join-status : false
```

The following example shows a command that provides complete multicast information for multicast groups on the chassis:

```
SFS-3012R> show ib sm multicast subnet-prefix all


=================================================================================
              Multicast-Groups Managed by Specific Subnet Manager
=================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                     MGID : ff:12:05:ad:ff:ff:00:00:00:00:05:ad:ff:ff:ff:ff
                    q-key : 00:00:00:0b
                     MLID : 49158
                      mtu : mtu2048
                  t-class : 0
                    p_key : ff:ff
                     rate : 2500 mbps
         packet-life-time : 2
                       SL : 0
               flow-label : 00:00:00
                hop-limit : 0
                    scope : link-local
          user-configured : false
```

```
    multicast-group-members :
         port-GID : fe:80:00:00:00:00:00:00:00:05:ad:00:00:01:59:c8
member-join-state : full-member
proxy-join-status : false

         port-GID : fe:80:00:00:00:00:00:00:00:05:ad:00:00:02:3c:28
member-join-state : full-member
proxy-join-status : false

    subnet-prefix : fe:80:00:00:00:00:00:00
             MGID : ff:12:40:1b:80:10:00:00:00:00:00:00:00:00:00:01
            q-key : 00:00:00:0b
             MLID : 49157
              mtu : mtu2048
          t-class : 0
            p_key : 80:10
             rate : 2500 mbps
 packet-life-time : 2
               SL : 0
       flow-label : 00:00:00
        hop-limit : 0
            scope : link-local
  user-configured : false
```

## Related Commands

**ib sm multicast ipoib**
**ib sm multicast mgid**

# show ib sm neighbor

To display the InfiniBand devices that directly connect to your server switch, enter the **show ib sm neighbor** command in user EXEC mode or privileged EXEC mode.

**show ib sm neighbor**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-49 describes the fields in the **show ib sm neighbor** command output.

*Table 3-49 show ib sm neighbor Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | 64-bit value that identifies the InfiniBand subnet to which this neighbor node belongs. |
| local-node-guid | 64-bit GUID of the InfiniBand node. |
| local-port-id | Port ID of the InfiniBand node. |
| local-node-type | Type of the InfiniBand node. The value appears as channel-adapter, switch, or router. |
| remote-node-guid | 64-bit GUID of the neighboring InfiniBand node to which the local node links. |
| remote-port-id | Port ID of the neighboring InfiniBand node to which the local node links. |
| remote-node-type | Type of the neighboring InfiniBand node. The value appears as channel-adapter, switch, or router. |
| link-state | State of the link between the local and neighboring nodes. The value appears as noStateChange, down, initialize, armed, or active. |
| link-width-active | Active link width. This parameter, with LinkSpeedActive, determines the link rate between the two connected nodes. The value appears as width1x, width4x, or width12x. |

## Examples

The following example displays the GUIDs that connect to your server switch and the GUIDs within your server switch:

**Note** Truncated output appears here.

```
SFS-7000D# show ib sm neighbor


================================================================================
                          Subnet Management Neighbors
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
          local-node-guid : 00:05:ad:00:00:00:1e:1c
            local-port-id : 1
          local-node-type : switch
         remote-node-guid : 00:05:ad:00:00:00:1e:1c
           remote-port-id : 7
         remote-node-type : switch
               link-state : active
        link-width-active : 4x
```

## Related Commands

ib sm

# show ib sm node

Use this command to display the configuration of all the nodes on a subnet or to display the configuration of an individual node. The output can also be displayed in summary form. The summary comprises the subnet-manager prefix, the node GUID and type, and the vendor identification. The node summary includes the node GUID, node type, vendor identification, description, and system-image-guid. To display the configuration and attributes of subnet management nodes in a subnet, enter the **show ib sm node** command in user EXEC mode or privileged EXEC mode.

**show ib sm node subnet-prefix** *prefix* | **all** [**node-guid** *guid*] [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the nodes that you want to view. |
| *prefix* | Subnet prefix of the nodes that you want to view. |
| **all** | Display subnet management nodes configured in the entire fabric. |
| **node-guid** | (Optional) Specifies the GUID of an individual node that you want to view. |
| *guid* | (Optional) GUID of an individual node that you want to view. |
| **summary** | (Optional) Displays abridged command output. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

All nodes that the subnet manager on your server switch actively manages qualify as subnet management nodes.

Table 3-50 describes the fields in the **show ib sm node** command output.

*Table 3-50 show ib sm node Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | 64-bit value that identifies the InfiniBand subnet to which this node belongs. |
| node-guid | GUID of the node. |
| base-version | Supported base management datagram (MAD) version. Indicates that this channel adapter, switch, or router supports versions up to and including this version. See section 13.4.2, “Management Datagram Format,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |

*Table 3-50 show ib sm node Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| class-version | Supported MAD class format version. Indicates that this channel adapter, switch, or router supports versions up to, and including, this version. |
| type | Type of node being managed. The value appears as channel adapter, switch, router, or error. An error entry indicates an unknown type. |
| num-ports | Number of physical ports on the node. |
| port-guid | GUID of the port that connects the node to the server switch. A port within a node can return the node GUID as its PortGUID if the port serves as an integral part of the node and you cannot replace the port in the field (not swappable). |
| partition-cap | Capacity of entries in the partition table for channel adapter, router, and the switch management port. The value appears the same for all ports on the node. This defaults to at least 1 for all nodes including switches. You cannot configure this value. |
| device-id | Manufacturer-assigned device identification. |
| revision | Manufacturer-assigned device revision. |
| local-portnum | The link port number from which this subnet management packet (SMP) arrived. The value appears the same for all ports on the node. |
| vendor-id | Device vendor ID. The value appears the same for all ports on the node. |
| system-image-guid | GUID of an associated supervisory node. No supervisory node exists if the command output displays 00:00:00:00:00:00:00:00. |

## Examples

The following example (output abridged) displays the configuration of all the nodes on all the subnets on the InfiniBand fabric:

```
SFS-7000P# show ib sm node subnet-prefix fe:80:00:00:00:00:00:00

================================================================================
                            Subnet Management Nodes
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:00:2c:90:01:1b:ba:80
              description : swfc5 HCA-1 (Topspin HCA)
             base-version : 1
            class-version : 1
                     type : channel adapter
                num-ports : 2
                port-guid : 00:00:2c:90:01:1b:ba:81
            partition-cap : 64
                device-id : 0
                 revision : 0
            local-portnum : 1
                vendor-id : 00:2c:90
        system-image-guid : 00:00:00:00:00:00:00:00


            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:00:13:da
              description : Topspin Switch - U1
             base-version : 1
            class-version : 1
                     type : switch
                num-ports : 8
                port-guid : 00:05:ad:00:00:00:13:da
            partition-cap : 32
                device-id : 0
                 revision : 0
            local-portnum : 6
                vendor-id : 00:05:ad
        system-image-guid : 00:00:00:00:00:00:00:00
```

The following example displays a node configuration in summary form:

```
SFS-7000P# show ib sm node subnet-prefix fe:80:00:00:00:00:00:00 node-guid
00:05:ad:00:00:00:13:80 summary
=====================================================================================
              Subnet Manager Node Summary
=====================================================================================
node-guid                node-type        vendor-id description    System-image-guid
-------------------------------------------------------------------------------------
00:05:ad:00:00:00:13:80  channel adapter  00:05:ad                 00:00:00:00:00:00:00:00
SFS-7000P#
```

## Related Commands

**ib sm**

# show ib sm partition

To display the partitions that the subnet manager on your server switch manages, enter the **show ib sm partition** command in user EXEC mode or privileged EXEC mode.

**show ib sm partition** [[**node-guid** *guid* **port-num** *num*] | [**subnet-prefix** *val*]]

## Syntax Description

| | |
|---|---|
| **node-guid** | (Optional) GUID of the node in the partition. |
| *guid* | (Optional) GUID value, such as 00:05:ad:00:00:00:02:40. |
| **port-num** | (Optional) Port on the node that belongs to the partition. |
| *num* | (Optional) Port number value, such as zero. |
| **subnet-prefix** | (Optional) Subnet prefix of the subnet with the partitions that you want to view. |
| *val* | (Optional) Subnet-prefix value such as fe:80:00:00:00:00:00:00. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

A single partition can have members that have full-membership, as well as members that have limited membership.

See the *Cisco SFS Product Family Element Manager User Guide* for detailed information about partitions.

**Command Output:**

In the output, ff:ff refers to the default partition. Members of partitions are identified by their Node GUID and port-number, as displayed below.

Table 3-51 describes the fields in the **show ib sm partition** command output.

*Table 3-51 show ib sm partition Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the subnet with the partitions that you want to view. |
| p_key | Partition key of the partition with the members the display prints below. |
| ipoib | Indicates whether IPoIB is enabled for the partition. |

*Table 3-51 show ib sm partition Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| node-guid | GUID of the node in the partition. |
| port-number | Port on the node that belongs to the partition. |
| member-type | Type of membership that an administrator assigns to the node, either full or limited. |

## Examples

The following example displays the configuration of all nodes on all subnets on the InfiniBand fabric:

```
SFS-7000D# show ib sm partition


================================================================================
                   Partitions Managed By The Subnet Managers
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                    p_key : ff:ff
                    ipoib : enabled

                  partition-members :
                node-guid : 00:05:ad:00:00:00:1e:1c
              port-number : 0
              member-type : full-member


SFS-7000D#
```

## Related Commands

**ib sm**

# show ib sm port

Use this command to verify that all ports in your fabric came up when the subnet manager initialized them. To display all InfiniBand ports on the fabric, the nodes to which the ports belong, the capabilities of the ports, and the link statistics of the ports, enter the **show ib sm port** command in user EXEC mode or privileged EXEC mode.

**show ib sm port subnet-prefix** *prefix* | **all** [**node-guid** *guid*] [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet manager that manages the ports that you want to view. |
| *prefix* | Subnet prefix of the subnet manager that manages the ports that you want to view. |
| **all** | Display all subnet management ports in the fabric. |
| **node-guid** | (Optional) Specifies the GUID of an individual node with the ports that you want to view. |
| *guid* | (Optional) GUID of an individual node with the ports that you want to view. |
| **summary** | (Optional) Displays abridged command output. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Port information can be reported for all the ports on a specific subnet or all the ports comprising a specific node. The output can also be displayed in summary form.

Table 3-52 describes the fields in the **show ib sm port** command output.

*Table 3-52 show ib sm port Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | 64-bit value that identifies the InfiniBand subnet to which this port belongs. |
| node-guid | 64-bit GUID of the node to which this port belongs. |
| if-index | Port number (integer) on the node (host). |

*Table 3-52 show ib sm port Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| mkey | 64-bit management key for this port. See section 14.2.4, "Management Key" and 3.5.3, "Keys," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| gid-prefix | 64-bit Global identifier prefix for this port. The subnet manager assigns this prefix based upon the port routes and the rules for local identifiers. See section 4.1.3, "Local Identifiers," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| lid | 16-bit base-LID of this port. |
| master-sm-lid | 16-bit base LID of the master subnet manager managing this port. |
| cap-mask | The capability mask identifies the functions that the host supports. 32-bit bitmask that specifies the supported capabilities of the port. A bit value of 1 (one) indicates a supported capability. The bits are 0, 11-15, 18, 21-31 (Reserved and always 0.), 1 IsSM, 2 IsNoticeSupported, 3 IsTrapSupported, 4 IsResetSupported, 5 IsAutomaticMigrationSupported, 6 IsSLMappingSupported, 7 IsMKeyNVRAM (supports M_Key in NVRAM), 8 IsPKeyNVRAM (supports P_Key in NVRAM), 9 Is LED Info Supported, 10 IsSMdisabled, 16 IsConnectionManagementSupported, 17 IsSNMPTunnelingSupported, 19 IsDeviceManagementSupported, 20 IsVendorClassSupported.Values are expressed in hexadecimal. |
| diag-code | 16-bit diagnostic code. See section 14.2.5.6.1 "Interpretation of Diagcode," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. This field does not currently apply to your server switch. |
| mkey-lease-period | Initial value of the lease-period timer, in seconds. The lease period is the length of time that the M_Key protection bits are to remain non-zero after a SubnSet (PortInfo) fails an M_Key check. After the lease period expires, clearing the M_Key protection bits allows any subnet manager to read (and then set) the M_Key. Set this field to 0 to indicate that the lease period never expires. See *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 14.2.4, "Management Key." |
| link-width-supported | Supported link width. The value appears as one of the following:<br>• 1x,<br>• 1x, 4x<br>• 1x, 4x, 8x<br>• 1x, 4x, 12x,<br>• 1x, 4x, 8x, 12x<br>• reserved |

*Table 3-52 show ib sm port Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| link-width-enabled | Enabled link width (bandwidth) for this port. The value can be one of the following:<br>• no state change<br>• 1x<br>• 4x<br>• 1x, 4x<br>• 8x<br>• 1x, 8x<br>• 4x, 8x<br>• 1x, 4x, 8x<br>• 12x<br>• 1x, 12x<br>• 4x, 12x<br>• 1x, 4x, 12x<br>• 8x, 12x<br>• 1x, 8x, 12x<br>• 4x, 8x, 12x<br>• 1x, 4x, 8x, 12x<br>• reserved<br>• linkwidthsupported value |
| link-width-active | Active link width. Used in conjunction with LinkSpeedActive to determine the link rate between two nodes. The value appears as 1x, 4x, or 12x. |
| link-speed-supported | Supported link speed. The value appears as one of the following:<br>• sdr<br>• sdr, ddr |
| link-speed-enabled | Maximum speed that the link can handle. The value appears as one of the following:<br>• sdr<br>• ddr<br>• sdr, ddr |
| link-speed-active | Speed of an active link. The value appears as one of the following:<br>• sdr<br>• ddr |
| state | A higher form of addressing than PhyState, state determines that the nodes can actually communicate and indicates the state transition that has occurred. A transition identifies a port change from down to initialize, initialize to down, armed to down, or active to down as a result of link state machine logic. Changes to the port state resulting from SubnSet have no affect on this parameter value. The value appears as noStateChange, down, initialize, armed, or active. |
| phy-state | Indicates the physical state of the port, whether or not electricity flows between nodes and that they can perform a handshake. The value appears as noStateChange, sleeping, polling, disabled, portConfigurationTraining, linkup, or linkErrorRecovery. The state, upon power-up, defaults to polling. |

*Table 3-52 show ib sm port Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| link-down-def-state | Default LinkDown state to return to. The value appears as noStateChange, sleeping, or polling. See section 5.5.2, "Status Outputs (MAD GET)," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| mkey-prot-bits | Management key protection bits for the port. The bits are 0, 1, 2, and 3. See section 14.2.4.1, "Levels of Protection," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| lmc | Local-identifier mask control (LMC) for multi-path support. A LMC resides on each channel adapter and router port on the subnet. It provides multiple virtual ports within a single physical port. The value of the LMC specifies the number of path bits in the LID. A value of 0 (zero) indicates one LID can apply to this port. See sections 3.5.10, "Addressing," and 4.1.3, "Local Identifiers," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| neighbor-mtu | Active maximum transmission unit enabled on this port for transmit. Check the mtu-cap value at both ends of every link and use the lesser speed. The value appears as 256, 512, 1024, 2048, or 4096. |
| master-sm-SL | Administrative service level required for this port to send a non-SMP message to the subnet manager. |
| VL-cap | Maximum range of data virtual lanes supported by this port. The value appears as vl0, vl0-Vl1, vl0-Vl3, vl0-Vl7, or vl0-Vl14. See also oper-VL. Each port can support up to 15 virtual lanes (VLs 0 - 15). The VL-cap field displays the range of those lanes (for example, lanes 0 - 7) that the port currently supports. |
| VL-high-limit | Maximum high-priority limit on the number of bytes allowed for transmitting high-priority packets when both ends of a link operate with multiple data virtual-lanes. Used with the virtual-lane arbitration table. The maximum high-limit matches the vl-arb-high-cap on the other side of the link and then negotiating downward. |
| VL-arb-high-cap | Highest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. See section 14.2.5.9, "VL Arbitration Table," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| VL-arb-low-cap | Lowest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. See section 14.2.5.9, "VL Arbitration Table," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| mtu-cap | Used in conjunction with neighbor-mtu to determine the maximum transmission size supported on this port. The lesser of mtu-cap and neighbor-mtu determines the actual MTU used. The value appears as 256, 512, 1024, 2048, or 4096. |
| VL-stall-count | Number of sequentially dropped packets at which the port enters a VLStalled state. The virtual lane exits the VLStalled state (8 * HLL) units after entering it. See section 18.2.5.4, "Transmitter Queuing," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for a description of HLL. |

*Table 3-52 show ib sm port Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| HOQ-life | Maximum duration allowed to packets at the head of a virtual-lane queue. Used with VL-stall-count to determine the outgoing packets to discard. |
| oper-VL | Administrative limit for the number of virtual lanes allowed to the link. Do not set this above the VL-cap value. The value appears as vl0, vl0-Vl1, vl0-Vl3, vl0-Vl7, or vl0-Vl14. |
| in-part-enforce | Boolean value that indicates whether or not to support optional partition enforcement for the packets that were received by this port. No default value applies. |
| out-part-enforce | Boolean value that indicates whether or not to support optional partition enforcement for the packets transmitted by this port. No default value applies. |
| in-filter-raw-pkt-enforce | Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets that were received by this port. No default value applies. |
| out-filter-raw-pkt-enforce | Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets transmitted by this port. No default value applies. |
| mkey-violation | Number of subnet management packets (SMPs) that have been received on this port with invalid M_Keys since initial power up or the last reset. See section 14.2.4, “Management Key,” *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| pkey-violation | Number of subnet management packets that have been received on this port with invalid P_Keys since initial power up or the last reset. See section 9.2.7, “Partition Key (P_KEY),” *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| qkey-violation | Number of subnet management packets that have been received on this port with invalid Q_Keys since initial power up or the last reset. See section 10.2.4, “Q Keys,” *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| guid-cap | Number of GUID entries allowed for this port in the port table. Any entries that exceed this value are ignored on write and read back as zero. See section 14.2.5.5, “GUIDCap,” *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| subnet-timeout | Maximum propagation delay allowed for this port to reach any other port in the subnet. This value also affects the maximum rate at with traps can be sent from this port. Switch configuration affects delay. Requestors can use this parameter to determine the interval to wait for a response to a request. Duration matches (4.096 ms * 2^SubnetTimeout). |
| resp-time | Maximum time allowed between the port reception of a subnet management packet and the transmission of the associated response. See section 13.4.6.2, “Timers and Timeouts,” *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |

Table 3-52 *show ib sm port Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| local-phy-error | Threshold at which ICRC, VCRC, FCCRC, and all physical errors result in an entry into the BAD PACKET or BAD PACKET DISCARD states of the local packet receiver. See section 7.12.2, "Error Recovery Procedures," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| local-overrun-error | Threshold at which the count of buffer overruns, across consecutive flow-control update periods, result in an overrun error. A possible cause of such errors is when an earlier packet has physical errors and the buffers are not immediately reclaimed. |

## Examples

The following example displays the details of the ports that the specified subnet manager manages:

```
SFS-7000D> show ib sm port subnet-prefix fe:80:00:00:00:00:00:00


================================================================================
                            Subnet Management Ports
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:00:1e:1c
                 if-index : 0
                     mkey : 00:00:00:00:00:00:00:00
               gid-prefix : fe:80:00:00:00:00:00:00
                      lid : 2
            master-sm-lid : 2
                 cap-mask : 00:10:08:4a
                diag-code : 00:00
        mkey-lease-period : 0
     link-width-supported : 1x, 4x
       link-width-enabled : 4x
        link-width-active : 4x
     link-speed-supported : sdr
       link-speed-enabled : sdr
        link-speed-active : sdr
                    state : active
                phy-state : linkup
      link-down-def-state : polling
           mkey-prot-bits : 0
                      lmc : 0
             neighbor-mtu : 2048
             master-sm-SL : 0
                   VL-cap : vl0-vl7
            VL-high-limit : 0
          VL-arb-high-cap : 8
           VL-arb-low-cap : 8
                  mtu-cap : 2048
           VL-stall-count : 0
                 HOQ-life : 0
                  oper-VL : vl0-vl7
          in-part-enforce : false
         out-part-enforce : false
    in-filter-raw-pkt-enf : false
   out-filter-raw-pkt-enf : false
           mkey-violation : 0
         pkey-violation : 0
         qkey-violation : 0
               guid-cap : 1
         subnet-timeout : 0
              resp-time : 17
        local-phy-error : 0
    local-overrun-error : 0
```

The following example displays a summary of the ports that the specified subnet manager manages:

```
SFS-7000D# show ib sm port subnet-prefix fe:80:00:00:00:00:00:00 summary


================================================================================
                          Subnet Manager Port Summary
================================================================================
subnet-prefix            node-guid                port   lid  state   link
--------------------------------------------------------------------------------
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  0      2    active  4x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  1      0    active  4x-ddr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  2      0    active  4x-ddr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  3      0    down    4x-ddr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  4      0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  5      0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  6      0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  7      0    active  4x-ddr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  8      0    active  4x-ddr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  9      0    down    4x-ddr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  10     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  11     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  12     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  13     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  14     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  15     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  16     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  17     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  18     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  19     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  20     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  21     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  22     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  23     0    down    12x-sdr
fe:80:00:00:00:00:00:00  00:05:ad:00:00:00:1e:1c  24     0    down    12x-sdr
SFS-7000D#
```

## Related Commands

- ib sm
- show ib sm configuration
- show ib sm multicast
- show ib sm neighbor
- show ib sm partition

# show ib sm route-around

To display chassis, nodes, and ports that have been specifically excluded from routing calculations, enter the **show ib sm route-around** command in user EXEC mode or privileged EXEC mode.

**show ib sm route-around subnet-prefix** *prefix* [**chassis-guid** *guid*] | [**node-guid** *guid* [**port-num** *port*]] | [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet that you want to display. |
| *prefix* | Subnet prefix of the subnet that you want to display. |
| **chassis-guid** | (Optional) Specifies that you want to view a chassis. |
| *guid* | (Optional) GUID of the chassis that you want to view. |
| **node-guid** | (Optional) Specifies that you want to view a node. |
| *guid* | (Optional) GUID of the node you want to view. |
| **port-num** | (Optional) Specifies that you want to display a port. |
| *port* | (Optional) Port number of the port you want to display. |
| **summary** | (Optional) Provides summary information for the subnet. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Chassis, nodes, and ports listed in the output are all excluded from consideration during routing calculations. Examine the output carefully, to ensure paths exist between all endpoints.

Table 3-53 describes the fields in the **show ib sm route-around** command output.

*Table 3-53 show ib sm route-around Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix. |
| chassis-guid | GUID of a chassis that has been excluded from routing calculations. |
| node-guid | GUID of a node that has been excluded from routing calculations, or a node with a specific port excluded. |
| port-num | A port that has been excluded from routing calculations. |

## Examples

The following example displays route-around data for a subnet with two ports on the same node excluded from routing calculations:

```
SFS-7000D# show ib sm route-around subnet-prefix fe:80:00:00:00:00:00:00


================================================================================
                   Route Around Managed By The Subnet Manager
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:00:1e:1c
                 port-num : 3

            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:00:1e:1c
                 port-num : 5

SFS-7000D#
```

The following example shows the same information in summary form:

```
SFS-7000D# show ib sm route-around subnet-prefix fe:80:00:00:00:00:00:00 summary


================================================================================
       Summary of Route Around Entries Managed By Specific Subnet Manager
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
================================================================================
                     Type :            Guid :        Port-Num :
================================================================================
                     port : 00:05:ad:00:00:00:1e:1c: 3
                     port : 00:05:ad:00:00:00:1e:1c: 5
SFS-7000D#
```

The following example displays route-around information for a subnet with one node excluded from routing calculations:

```
SFS-7000D# show ib sm route-around subnet-prefix fe:80:00:00:00:00:00:00


================================================================================
                   Route Around Managed By The Subnet Manager
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:00:1e:1c

SFS-7000D#
```

## Related Commands

ib sm

# show ib sm service

To display services available on your subnet, enter the **show ib sm service** command in user EXEC mode or privileged EXEC mode.

**show ib sm service** [**subnet-prefix** *prefix* [**p_key** *pkey* | **service-gid** *GID* | **service-id** *ID*]] [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | (Optional) Specifies the subnet prefix of the subnet that you want to display. |
| *prefix* | (Optional) Subnet prefix of the subnet that you want to display. |
| **p_key** | (Optional) Specifies a partition with the nodes run services that you want to view. |
| *pkey* | (Optional) Partition that contains nodes that run services that you want to view. |
| **service-gid** | (Optional) Specifies the Global identifier of the service (the GID of the node that provides the service). |
| *GID* | (Optional) Global identifier of the service (node). |
| **service-id** | (Optional) Specifies the ID of the service to display. |
| *ID* | (Optional) ID of the service to display. |
| **summary** | (Optional) Displays a summarized version of the command output. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Services represent actions or functions that a node can perform across the network at the request of another node. Nodes register their services with the subnet manager so other nodes can discover and use these services. The Global identifier of a service matches the Global identifier of the host that provides the service.

Table 3-54 describes the fields in the **show ib sm service** command output.

*Table 3-54 show ib sm service Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the service. |
| service-id | Service ID of the service. |
| GID | Global identifier of the service. |
| p_key | Partition key of the service. |
| lease | Specifies the lease service. |
| service-key | Specifies the service key. |
| service-name | Name of the service. |
| service-data | Header of the data types: 8, 16, 32, and 64. |
| data-8 | Specifies data type 8. |
| data-16 | Specifies data type 16. |
| data-32 | Specifies data type 32. |
| data-64 | Specifies data type 64. |

## Examples

The following example displays the services on the server switch:

```
SFS-7000# show ib sm service subnet-prefix fe:80:00:00:00:00:00:00

================================================================================
                         Summary of Services on Device
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
               service-id : 10:00:0c:e1:00:41:54:53
                      GID : fe:80:00:00:00:00:00:00:00:02:c9:02:00:00:24:41
                    p_key : ff:ff
                    lease : indefinite
              service-key : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
             service-name : DAPL Address Translation Service
             service-data :
                   data-8 : 00:00:00:00:00:00:00:00:00:00:00:00:c0:a8:01:02
                  data-16 : 0000:0000:0000:0000:0000:0000:0000:0000
                  data-32 : 00000000:00000000:00000000:00000000
                  data-64 : 0000000000000000:0000000000000000

            subnet-prefix : fe:80:00:00:00:00:00:00
               service-id : 10:00:0c:e1:00:41:54:53
                      GID : fe:80:00:00:00:00:00:00:00:02:c9:02:00:00:24:7d
                    p_key : ff:ff
                    lease : indefinite
              service-key : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
             service-name : DAPL Address Translation Service
             service-data :
                   data-8 : 00:00:00:00:00:00:00:00:00:00:00:00:c0:a8:01:01
                  data-16 : 0000:0000:0000:0000:0000:0000:0000:0000
                  data-32 : 00000000:00000000:00000000:00000000
                  data-64 : 0000000000000000:0000000000000000
```

The following example displays a summary of the services on the server switch:

```
SFS-7000# show ib sm service subnet-prefix fe:80:00:00:00:00:00:00 summary

================================================================================
                         Summary of Services on Device
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
               service-id : 10:00:0c:e1:00:41:54:53
                      GID : fe:80:00:00:00:00:00:00:00:02:c9:02:00:00:24:41
             service-data :
                   data-8 : 00:00:00:00:00:00:00:00:00:00:00:00:c0:a8:01:02
                  data-16 : 0000:0000:0000:0000:0000:0000:0000:0000
                  data-32 : 00000000:00000000:00000000:00000000
                  data-64 : 0000000000000000:0000000000000000

            subnet-prefix : fe:80:00:00:00:00:00:00
               service-id : 10:00:0c:e1:00:41:54:53
                      GID : fe:80:00:00:00:00:00:00:00:02:c9:02:00:00:24:7d
             service-data :
                   data-8 : 00:00:00:00:00:00:00:00:00:00:00:00:c0:a8:01:01
                  data-16 : 0000:0000:0000:0000:0000:0000:0000:0000
                  data-32 : 00000000:00000000:00000000:00000000
                  data-64 : 0000000000000000:0000000000000000
```

## Related Commands

**ib sm**
**show ib sm configuration**
**show ib sm multicast**
**show ib sm neighbor**
**show ib sm partition**
**show ib sm port**

# show ib sm sm-info

To display subnet manager information maintained by the subnet manager on this device, enter the **show ib sm sm-info** command in user EXEC mode or privileged EXEC mode.

**show ib sm sm-info subnet-prefix** subnet-*prefix* [**port-guid** *port-guid*] [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Displays the information of subnet managers discovered in the subnet specified by subnet-prefix. |
| *subnet-prefix* | Prefix of the subnet with the desired Subnet Managers' information, for example, fe:80:00:00:00:00:00:00. |
| **port-guid** | (Optional) Displays the information of the Subnet Manager residing at the port specified by *port-guid.* |
| *port-guid* | (Optional) Specifies the port GUID. |
| **summary** | (Optional) Displays a summary of the discovered subnet managers in the fabric. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

## Examples

This example displays subnet manager information:

```
SFS-7000P# show ib sm sm-info subnet-prefix fe:80:00:00:00:00:00:00 summary
================================================================================
                Summary of Discovered Subnet Managers in Fabric
================================================================================
subnet-prefix           port-guid                  priority state
--------------------------------------------------------------------------------
fe:80:00:00:00:00:00    00:05:ad:00:00:01:5f:f2    10
```

## Related Commands

ib sm db-sync

# show ib sm subscription

To display event subscriptions or information records managed by your subnet manager on this device, enter the **show ib sm subscription** command in user EXEC mode or privileged EXEC mode.

**show ib sm subscription subnet-prefix** *subnet-prefix* [**lid** *LID*] [**node-guid** *GUID* [**port-num** *port-num*]] [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet managers that you want to display. |
| *subnet-prefix* | Subnet prefix of the subnet managers that you want to display. |
| **lid** | (Optional) Specifies the LID of the service (the LID of the node that provides the service). |
| *LID* | (Optional) Integer value representing the LID of the service (node). |
| **node-guid** | (Optional) Specifies the global identifier of the node (the GUID of the node that provides the service). |
| *GUID* | (Optional) Global identifier of the service (node). |
| **port-num** | (Optional) Specifies the port number |
| *port-num* | (Optional) Port number. |
| **summary** | (Optional) Displays a summarized version of the command output. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Subscriptions represent the local ID of a node, which matches the local ID of the host that provides the service. The global ID of a service matches the global ID of the host that provides the service.

Table 3-55 describes the fields in the **show ib sm service** command output.

*Table 3-55 show ib sm subscription Command Field Descriptions*

| Field | Description |
|---|---|
| LID | Local ID of the node. |
| node-guid | Global ID of the host. |
| port-num | Port number. |

*Table 3-55 show ib sm subscription Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| LID range | Specifies the LID range. |
| is-generic | Specifies the is generic value. |
| trap-num-device-id | Name of the service. |

## Examples

The following example displays a summary of the event subscriptions managed on the server switch:

```
SFS-7000P# show ib sm subscription subnet-prefix fe:80:00:00:00:00:00:00 summary
================================================================================
Summary of Event Subscriptions Managed
================================================================================
LID node-guid port-num LID-range is-generic trap-num-device-id
--------------------------------------------------------------------------------
985 00:05:ad:00:00:01:29:aa 1 65535-0 true 65
993 00:05:ad:00:00:01:29:ad 1 65535-0 true 65
SFS-7000P# show ib sm subscription subnet-prefix fe:80:00:00:00:00:00:00 node-guid
00:05:ad:00:00:01:29:aa

================================================================================
Summary of Event Subscriptions Managed
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
LID : 985
node-guid : 00:05:ad:00:00:01:29:aa
port-num : 1
source-QPN : 00:00:01
GID : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
LID-range-start : 65535
LID-range-end : 0
is-generic : true
trap-num-device-id : 65
producer-type-vendor-id : subnet-management
type : subnet-management
resp-time-value : 0
```

## Related Commands

**ib sm**
**show ib sm configuration**
**show ib sm multicast**
**show ib sm neighbor**
**show ib sm partition**
**show ib sm port**

# show ib sm switch

To display the attributes of all InfiniBand switches in your fabric (for debug purposes), enter the **show ib sm switch** command in user EXEC mode or privileged EXEC mode.

**show ib sm switch** {**subnet-prefix** *prefix* | **all**} [**node-guid** *guid*][**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the subnet managers that you want to view. |
| *prefix* | Subnet prefix of the subnet managers that you want to view. |
| **all** | Displays the attributes of all subnet managers that run on your InfiniBand fabric. |
| **node-guid** | (Optional) Specifies the GUID of the switch that you want to view. |
| *guid* | (Optional) GUID of the switch that you want to view. |
| **summary** | (Optional) Displays a summarized version of the command output. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Switch information can be reported for all the switches on a specific subnet or all the switches comprising a specific node. The output can also be displayed in summary form.

Table 3-56 describes the fields in the **show ib sm switch** command output.

*Table 3-56 show ib sm switch Command Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | 64-bit value that identifies the InfiniBand subnet to which this node belongs. |
| node-guid | 64-bit GUID of the node. |
| linear-fdb-cap | Maximum number of entries allowed in the linear unicast forwarding table. 0 (zero) indicates the absence of a linear forwarding database. |
| random-fdb-cap | Maximum number of entries allowed in the random unicast forwarding table. 0 (zero) indicates an absence of a random forwarding database. |
| mcast-fdb-cap | Maximum number of entries allowed in the multicast forwarding table. |

*Table 3-56 show ib sm switch Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| linear-fdb-top | Specifies the top of the linear forwarding table. Packets that were received with unicast LIDs greater than this value are discarded by the switch. This parameter applies only to switches that implement linear forwarding tables. Switches that implement random forwarding tables ignore this parameter. |
| default-port | Specifies the default port to which to forward all the unicast packets from other ports when the destination location ID (DLID) does not exist in the random forwarding table. |
| default-pri-mcast-port | Specifies the default port to which to forward all the multicast packets from other ports when the DLID does not exist in the multicast forwarding table. |
| def-non-pri-mcast-port | Specifies the port to which to forward all the multicast packets from default-pri-mcast-port when the DLID does not exist in the multicast forwarding table. |
| life-time-value | Specifies the duration a packet can live in the switch. Time units are in milliseconds. See section 18.2.5.4, "Transmitter Queueing," *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| port-state-change | Indicates a change in port state. The value changes from NotInTransition to PortInTransition anytime the State parameter of a port changes from down to initialize, initialize to down, armed to down, or active to down, as a result of link state machine logic. |
| lids-per-port | Number of LID/LMC combinations that can be assigned to a given external port for switches that support the random forwarding table. This value is always 0. 0 indicates one LID per port. |
| partition-enf-cap | Number of entries in this partition enforcement table per physical port. 0 (zero) indicates that the server switch does not support partition enforcement. |
| in-enf-cap | Indicates if the switch can enforce partitions on received packets. The value appears as true or false. |
| out-enf-cap | Indicates if the server switch can enforce partitions on transmitted packets. The value appears as true or false. |
| in-filter-raw-pkt-cap | Indicates if the server switch can enforce raw packets on received packets. The value appears as true or false. |
| out-filter-raw-pkt-cap | Indicates if the switch enforces raw packets on transmitted packets. The value appears as true or false. |

## Examples

The following example displays attributes of the InfiniBand switch with a GUID of 00:05:ad:00:00:00:1e:1c:

```
SFS-7000D> show ib sm switch subnet-prefix fe:80:00:00:00:00:00:00 node-guid 00:
05:ad:00:00:00:1e:1c


================================================================================
                           Subnet Management Switches
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                node-guid : 00:05:ad:00:00:00:1e:1c
           linear-fdb-cap : 49152
```

```
              random-fdb-cap : 0
               mcast-fdb-cap : 1024
              linear-fdb-top : 10240
                default-port : 0
          def-pri-mcast-port : 255
      def-non-pri-mcast-port : 255
             life-time-value : 20
           port-state-change : port in transition
               lids-per-port : 0
           partition-enf-cap : 32
                  in-enf-cap : true
                 out-enf-cap : true
       in-filter-raw-pkt-cap : true
      out-filter-raw-pkt-cap : true

SFS-7000D>
```

The following example displays the switches of a subnet in summary form:

```
SFS-7000P# show ib sm switch subnet-prefix fe:80:00:00:00:00:00:00 summary
============================================================================
                         Subnet Manager Switch Summary
==============================================================
subnet-prefix           node-guid
----------------------------------------------------------------------------
fe:80:00:00:00:00:00:00 00:05:ad:00:00:00:13:7f
fe:80:00:00:00:00:00:00 00:05:ad:00:00:00:13:81
fe:80:00:00:00:00:00:00 00:05:ad:00:00:00:13:83
fe:80:00:00:00:00:00:00 00:05:ad:00:00:00:13:85
fe:80:00:00:00:00:00:00 00:05:ad:00:00:00:13:87
fe:80:00:00:00:00:00:00 00:05:ad:00:00:00:13:89
SFS-7000P#
```

## Related Commands

**ib sm**
**show ib sm configuration**
**show ib sm multicast**
**show ib sm neighbor**
**show ib sm partition**
**show ib sm port**

# show ib sm switch-elem-route

This command displays all the external ports of all the server switches through which traffic enters and exits as it travels from the source LID to the destination LID. To display the subnet manager route switch element table, enter the **show ib sm switch-elem-route** command in user EXEC mode or privileged EXEC mode.

**show ib sm switch-elem-route subnet-prefix** {*prefix* [**src-lid** *srclid* **dst-lid** *dstlid*] | **all**} [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the route. |
| *prefix* | Subnet prefix of the route. |
| **src-lid** | (Optional) Specifies the source LID of the route. |
| *srclid* | (Optional) Source LID of the route. |
| **dst-lid** | (Optional) Specifies the destination LID of the route. |
| *dstlid* | (Optional) Destination LID of the route. |
| **all** | (Optional) Specifies all routes in the subnet. |
| **summary** | (Optional) Displays fewer output fields. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-57 describes the field of the **show ib sm switch-elem-route** command output.

*Table 3-57 show ib sm switch-elem-route Command Output Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the route. |
| src-lid | Source LID of the route. |
| dst-lid | Destination LID of the route. |
| chassis-GUID | Chassis that runs the route. |
| input-port | Input port of the route. |
| output-port | Output port of the route. |

## Examples

The following example displays the subnet manager route switch element table for one source and destination:

```
SFS-7000P# show ib sm switch-elem-route subnet-prefix fe:80:00:00:00:00:00:00 src-lid 858
dst-lid 857

================================================================================
                      SM Switch Route Element
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 858
                  dst-lid : 857
             chassis-GUID : 00:05:ad:00:00:00:03:00
               input-port : 0/7
              output-port : 0/8
```

The following example displays a summary of the subnet manager route switch element table for one source and destination:

```
SFS-7000P# show ib sm switch-elem-route subnet-prefix fe:80:00:00:00:00:00:00 src-lid 889
dst-lid 9 summary

================================================================================
                      SM Switch Route Elements Summary
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 1
                  dst-lid : 1
```

## Related Commands

ib sm

# show ib sm switch-route

This command displays all the ports, both internal and external, of all the server switches through which traffic travels from a source LID to a destination LID. The complete path that traffic takes through the InfiniBand fabric from the source LID to the destination LID, enter the **show ib sm switch-route** command in user EXEC mode or privileged EXEC mode.

**show ib sm switch-route subnet-prefix** {*prefix* [**src-lid** *srclid* **dst-lid** *dstlid*] | **all**} [**summary**]

## Syntax Description

| | |
|---|---|
| **subnet-prefix** | Specifies the subnet prefix of the route. |
| *prefix* | Subnet prefix of the route. |
| **src-lid** | (Optional) Specifies the source LID of the route. |
| *srclid* | (Optional) Source LID of the route. |
| **dst-lid** | (Optional) Specifies the destination LID of the route. |
| *dstlid* | (Optional) Destination LID of the route. |
| **all** | Specifies all routes in the subnet. |
| **summary** | (Optional) Displays fewer output fields. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Table 3-58 describes the fields in the command output.

*Table 3-58 show ib sm switch-route Command Output Field Descriptions*

| Field | Description |
|---|---|
| subnet-prefix | Subnet prefix of the route. |
| src-lid | Source LID of the route. |
| dst-lid | Destination LID of the route. |
| node-GUID | Node that runs the route. |
| input-port | Input port of the route. |
| output-port | Output port of the route. |

## Examples

The following example displays all switch routes:

```
SFS-7000P# show ib sm switch-route subnet-prefix all

================================================================================
                       SM Switch Route
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 2
                  dst-lid : 2

            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 2
                  dst-lid : 889

            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 889
                  dst-lid : 2

                node-GUID : 00:05:ad:00:00:02:5a:95
               input-port : 5
              output-port : 0

            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 889
                  dst-lid : 889
```

The following example displays the switch route for one source/destination LID pair:

```
SFS-7000P# show ib sm switch-route subnet-prefix fe:80:00:00:00:00:00:00 src-lid 858
dst-lid 857

================================================================================
                               SM Switch Route
================================================================================
            subnet-prefix : fe:80:00:00:00:00:00:00
                  src-lid : 858
                  dst-lid : 857
                node-GUID : 00:05:ad:00:00:00:03:00
               input-port : 7
              output-port : 8
```

## Related Commands

ib sm

# show ib-agent channel-adapter

To view the attributes of InfiniBand agents for channel adapters (gateways and controllers) on your server switch, enter the show **ib-agent channel-adapter** command in privileged EXEC mode or user EXEC mode.

**show ib-agent channel-adapter node-info**

## Syntax Description

| | |
|---|---|
| **node-info** | InfiniBand information for the channel adapter (CA). |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Each system channel adapter runs its own subnet-management agent.

Table 3-59 describes the fields in the **show ib-agent channel-adapter** command output.

*Table 3-59 show ib-agent channel-adapter Command Field Descriptions*

| Field | Description |
|---|---|
| guid | Globally unique identifier of the CA as an 8-byte string. |
| type | Type of device this SMA supports. The field always displays “adapter.” |
| lid | LID of the channel-adapter port. |
| base-version | Supported base management datagram version supported. |
| class-version | Supported subnet-management class. |
| port-guid | Globally unique identifier of the node port. |
| partition-cap | Number of entries in the partition table for channelAdapter, router, and switch management ports. This displays, at a minimum, 1 for all nodes including switches. |
| device-id | Device ID information, as assigned by the device manufacturer. |
| revision | Device revision, as assigned by the device manufacturer. |
| local-port-num | Number of the link port which received this request; otherwise, the field displays 0. |
| vendor-id | Device vendor, per the IEEE standard. |
| trap-buffer | Special purpose string buffer for InfiniBand trap data. |

*Table 3-59 show ib-agent channel-adapter Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| num-ports | Number of physical ports on this node. |
| string | Node description string. Unicode characters are 16 bits. |

## Examples

The following example displays the attributes of the InfiniBand host with a GUID of 00:05:ad:00:00:00:13:17:

```
SFS-3012# show ib-agent channel-adapter 00:05:ad:00:00:00:13:17 node-info
============================================================================
                              SMA Node Information
============================================================================
                     guid : 00:05:ad:00:00:00:13:17
                     type : adapter
                      lid : 14
             base-version : 1
            class-version : 1
                port-guid : 00:05:ad:00:00:00:13:18
            partition-cap : 64
                device-id : 5a:44
                 revision : 00:00:00:a0
           local-port-num : 1
                vendor-id : 00:05:ad
              trap-buffer :
                num-ports : 2
                   string : slot 7: /dev/ts_ua0

                     guid : 00:05:ad:00:00:00:13:17
                     type : adapter
                      lid : 0
             base-version : 1
            class-version : 1
                port-guid : 00:05:ad:00:00:00:13:18
            partition-cap : 64
                device-id : 5a:44
                 revision : 00:00:00:a0
           local-port-num : 1
                vendor-id : 00:05:ad
              trap-buffer :
                num-ports : 2
                   string : slot 7: /dev/ts_ua0
```

## Related Commands

ib-agent

# show ib-agent summary

To view the attributes of all InfiniBand agents on your server switch, enter the **show ib-agent summary** command in privileged EXEC mode or user EXEC mode.

**show ib-agent summary**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

InfiniBand read-only user.

Subnet-management agent information can be displayed in a summary form. This summary helps you assign IP addresses to Ethernet interface gateways because the summary supplies much of the important information you need to configure gateways, such as GUID and LID values.

This command is also useful for gathering information about which GUIDs are present in which switch chassis. Also, use this command when working with output that is presented in terms of GUIDs, for example, output from the **show sm** commands. Having a list of GUIDs for each switch chassis in the network is necessary for locating a GUID.

Table 3-60 describes the fields in the **show ib-agent summary** command output.

*Table 3-60 show ib-agent summary Command Field Descriptions*

| Field | Description |
|---|---|
| slot | Chassis slot to which the CA or switch connects. |
| type | Type of node being managed. The value appears as adapter, switch, router, or error. The **error** value indicates an unknown type. |
| state | Logical state of the port. The value appears as either “down” or “active.” |
| port | SMA-node port-number. |
| guid | Globally unique identifier of the InfiniBand node (switch or channel adapter). |
| string | Node description string. Defaults to the chassis slot and internal device name used by the chassis operating system software to communicate with the device. This default can be overridden with the **ib-agent** configuration command |
| lid | LID, in decimal format, of this port. |

## Examples

The following example displays a summary of all the SMA nodes:

```
SFS-7000P# show ib-agent summary
===========================================================================
              SMA Node Information Summary
===========================================================================
slot  type       state  port  guid                     string            lid
---------------------------------------------------------------------------
7     adapter    active 1     00:05:ad:00:00:00:13:17  slot 7:  /dev/ts_ua0 14
7     adapter    down   2     00:05:ad:00:00:00:13:17  slot 7:  /dev/ts_ua0  0
16    switch     active 0     00:05:ad:00:00:00:13:7f  slot 16: /dev/ts_ua0  2
16    switch     active 0     00:05:ad:00:00:00:13:81  slot 16: /dev/ts_ua1  4
16    switch     active 0     00:05:ad:00:00:00:13:83  slot 16: /dev/ts_ua2  6
16    switch     active 0     00:05:ad:00:00:00:13:85  slot 16: /dev/ts_ua3  8
16    switch     active 0     00:05:ad:00:00:00:13:87  slot 16: /dev/ts_ua4 10
16    switch     active 0     00:05:ad:00:00:00:13:89  slot 16: /dev/ts_ua5 12
1     adapter    down   1     00:05:ad:00:00:00:13:f3  slot 1:  /dev/ts_ua0  0
1     adapter    active 2     00:05:ad:00:00:00:13:f3  slot 1:  /dev/ts_ua0  1
4     adapter    active 1     00:05:ad:00:00:00:14:14  slot 4:  /dev/ts_ua0 15
4     adapter    down   2     00:05:ad:00:00:00:14:14  slot 4:  /dev/ts_ua0  0
SFS-7000P#
```

## Related Commands

**ib sm**
**ib-agent**
**show ib sm configuration**
**show ib sm multicast**
**show ib sm neighbor**
**show ib sm partition**
**show ib sm port**

# show ib-agent switch

To view the attributes of InfiniBand agents for switches on your server switch, enter the **show ib-agent switch** command in privileged EXEC mode or user EXEC mode.

**show ib-agent switch** {*guid* | **all**} {**linear-frd-info lid** {*lids* | **all**} | **mcast-info lid** {*lids* | **all**} | **node-info** | **pkey-info** | **port-info** | **sl-vl-map** | **switch-info**}

## Syntax Description

| | |
|---|---|
| *guid* | GUID of the switch that you want to view. |
| **all** | • When the **all** keyword follows the **show ib-agent switch** command, it displays statistics for all switches in the chassis.<br>• When the **all** keyword follows the **lid** keyword, it displays the attributes of all applicable ports. |
| **linear-frd-info** | Linear forwarding tables of specified switches. |
| **lid** | Local IDs of the ports that you want to view. |
| *lids* | LID, list of LIDs, or range of LIDs that you want to view. |
| **mcast-info** | Multicast forwarding tables of specified switches. |
| **node-info** | Attributes of specified switch nodes. |
| **pkey-info** | Partition key table of specified switch nodes. |
| **port-info** | Port attributes of specified switch nodes. |
| **sl-vl-map** | Service level (SL) to virtual lane (VL) mapping table for specified switch nodes. |
| **switch-info** | Displays InfiniBand attributes specific to InfiniBand switches. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

InfiniBand read-only user.

Table 3-61 describes the fields in the **linear-frd-info** keyword output.

*Table 3-61 linear-frd-info Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| switch-guid | GUID of the switch. |
| lid | LID of the port. |
| 0 - 7 | Represents ports 0 - 7 on an InfiniBand switch card. |

Table 3-62 describes the fields in the **mcast-info** keyword output.

*Table 3-62 mcast-info Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| node-guid | GUID of the switch with the LID immediately following. |
| block-index | Determines which multicast LIDs and ports on the current switch chip are displayed in the following table. See the Multicast Forwarding Table section of the Subnet Management chapter of the InfiniBand specification for details. |
| lid | LIDs of the ports on the switch. |
| port-mask | Shows to which ports a multicast packet for the given LID will be transmitted. |

Table 3-63 describes the fields in the **node-info** keyword output.

*Table 3-63 node-info Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the node. |
| type | Type of SMA node. This value always appears as “switch.” |
| lid | LID of the port that connects to the node. |
| base-version | Base management datagram version that the switch supports. |
| class-version | Subnet management class that the switch supports. |
| port-guid | GUID of the port that connects to the node. |
| partition-cap | Number of partitions that the node supports. |
| device-id | Manufacturer-assigned device ID. |
| revision | Manufacturer-assigned device revision. |
| local-port-num | Number of the link port that received this show request. |
| vendor-id | Device vendor ID, as per the IEEE standard. |
| trap-buffer | Number of traps that the node supports. |
| num-ports | Number of physical ports on the SMA node. |
| string | SMA node description string. |

Table 3-64 describes the fields in the **port-info** keyword output.

*Table 3-64 port-info Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| node-guid | 64-bit GUID of the SMA node to which this port belongs. |
| port | Number of the port on the SMA node. |
| mkey | 64-bit management key for the port. For more information, see sections 14.2.4, "Management Key" and 3.5.3, "Keys," in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| gid-prefix | 64-bit global IDprefix for this port. The subnet manager assigns this prefix. For more information, see section 4.1.3, "Local Identifiers," in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| lid | 16-bit base LID of the port. |
| master-SML-id | 16-bit base LID of the master subnet manager that manages this port. |
| capability-mask | 32-bit bitmask that specifies the supported capabilities of the port.<br>A bit value of 1 (one) indicates a supported capability. The bits are as follows:<br>• 0, 11-15, 18, 21-31 (Reserved and always 0.),<br>• 1 IsSM,<br>• 2 IsNoticeSupported,<br>• 3 IsTrapSupported,<br>• 4 IsResetSupported,<br>• 5 IsAutomaticMigrationSupported,<br>• 6 IsSLMappingSupported,<br>• 7 IsMKeyNVRAM (supports M_Key in NVRAM),<br>• 8 IsPKeyNVRAM (supports P_Key in NVRAM),<br>• 9 IsLEDInfoSupported,<br>• 10 IsSMdisabled,<br>• 16 IsConnectionManagementSupported,<br>• 17 IsSNMPTunnelingSupported,<br>• 19 IsDeviceManagementSupported,<br>• 20 IsVendorClassSupported.<br>Values are expressed in hexadecimal. |
| diag-code | 16-bit diagnostic code. For more information, see section 14.2.5.6.1, "Interpretation of Diagcode," in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| mkey-lease-period | Initial value of the lease-period timer, in seconds. The lease period indicates the length of time that the M_Key protection bits remain non-zero after a SubnSet (Portinfo) fails an M_Key check. After the lease period expires, clearing the M_Key protection bits allows any subnet manager to read (and then set) the M_Key. Set this field to 0 to indicate that the lease period never expires. For more information, see section 14.2.4, "Management Key," in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| local-port-num | Number of the link port that received this SNMP request. |

*Table 3-64 port-info Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| link-width-supported | Supported link width. Value can be any of the following:<br>• 1x<br>• 1x or 4x<br>• 1x, 4x, or 12x |
| link-width-enabled | Integer value that indicates the enabled link-width sets for this port. The value can be any of the following:<br>• 0 (no state change)<br>• 1 (1x)<br>• 2 (4x)<br>• 3 (1x or 4x)<br>• 8 (12x)<br>• 9 (1x or 12x)<br>• 10 (4x or 12x)<br>• 11 (1x, 4x, or 12x)<br>• 255 (sets this parameter to the LinkWidthSupported value). |
| link-width active | Active width of the link. Value can be 1x, 4x, or 12x. |
| link-speed-supported | Supported link speed. This value appears as one of the following:<br>• sdr<br>• sdr, ddr |
| link-speed-enabled | Maximum speed that the link can handle. This value can be one of the following:<br>• sdr<br>• ddr<br>• sdr, ddr |
| link-speed-active | Speed of an active link. The field displays sdr or ddr. |
| state | Displays the logical state of the port. If this parameter is anything other than “down,” it indicates that the port has successfully completed link negotiation and is physically communicating with another port in the subnet. The most common states are down, init, and active. Init means that the port has completed its physical negotiation, but the subnet manager has not yet brought it to the active state, so it cannot yet transmit or receive data traffic. Active means the port is fully operational. See the “PortInfo” section of the Subnet Management chapter of the InfiniBand specification for more information. |
| port-phys | Displays the physical state of the port. This parameter indicates the state of the low-level hardware link negotiation. The most common states are polling, disabled, and linkup. Polling means that the port is enabled but is not communicating with another port. Disabled means that the port is shut down and will not communicate with another port, even if connected. Linkup means that the port has complete link negotiations with another port and is physically ready to pass traffic. See the “PortInfo” section of the Subnet Management chapter of the InfiniBand specification for more information. |

*Table 3-64 port-info Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| link-down-def | LinkDown state to return to. The value appears as noStateChange, sleeping, or polling. For more information, see section 5.5.2, “Status Outputs,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| mkey-protect-bits | Management key protection bits for the port. The bits are 0, 1, 2, and 3. For more information, see section 14.2.4.1, “Levels of Protection,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| lmc | Local-identifier mask control (LMC) for multipath support. A LMC resides on each channel adapter and router port on the subnet. It provides multiple virtual ports within a single physical port. The value of the LMC specifies the number of path bits in the LID. A value of 0 allows one LID on the port. For more information, see sections 3.5.10, “Addressing” and 4.1.3, “Local Identifiers,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| neighbor-MTU | Active maximum transmission unit (MTU) enabled on this port for transmission. The subnet manager is responsible for checking the MTUCap on both ends of a link and setting the neighbor-MTU on both sides appropriately. The value appears as 256, 512, 1024, 2048, or 4096. |
| master-sm-sl | Administrative service level required for this port to send a non-SMP message to the subnet manager. |
| VL-cap | Maximum range of data virtual lanes (VLs) supported by this port. |
| VL-high-limit | Maximum high-priority limit on the number of bytes allowed for transmitting high-priority packets when both ends of a link operate with multiple data virtual lanes. Used with the virtual-lane arbitration table. The maximum high-limit is determined by checking the v1-arbitration-high-cap on the other side of the link and then negotiating downward. |
| VL-arbitration-high-cap | Highest arbitration value allowed by the arbiter in determining the next packet in a set of packets to transmit across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. For more information, see section 14.2.5.9, “VL Arbitration Table,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| VL-arbitration-low-cap | Lowest arbitration value allowed by the arbiter in determining the next packet in a set of packets to transmit across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. For more information, see section 14.2.5.9, “VL Arbitration Table,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| MTU-cap | Determines, with neighbor-mtu, the maximum transmission size supported on this port. The lesser of MTU-cap and neighbor-mtu determines the actual MTU used. The value appears as 256, 512, 1024, 2048, or 4096. |
| VL-stall-count | Number of sequentially dropped packets at which the port enters a VLStalled state. For more information, see section 18.2.5.4, “Transmitter Queuing,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| HOQ-life | Maximum duration allowed to packets at the head of a virtual-lane queue. Used with VLStallCount to determine the outgoing packets to discard. |
| op-VLs | Administrative limit for the number of virtual lanes allowed to the link. Do not set this above the VLCap value. |

*Table 3-64 port-info Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| pkey-enf-in | Boolean value that indicated whether or not to support optional partition enforcement for the packets that were received by this port. |
| pkey-enf-out | Boolean value that indicates whether or not to support optional partition enforcement for the packets transmitted by this port. |
| filter-raw-pkt-in | Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets that were received by this port. |
| filter-raw-pkt-out | Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets transmitted by this port. |
| mkey-violations | Number of subnet management packets (SMPs) that have been received on this port with invalid M_Keys since initial power-up or last reset. For more information see section 14.2.4, “Management Key,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| pkey-violations | Number of subnet management packets that have been received on this port with invalid P_Keys since initial power-up or the last reset. For more information, see section 9.2.7, “Partition Key,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| qkey-violations | Number of subnet management packets that have been received on this port with invalid Q_Keys since initial power up or the last reset. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 10.2.4, “Q Keys.” |
| guid-cap | Number of GUID entries allowed for this port in the port table. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 14.2.5.5, “GUIDCap.” |
| subnet-timeout | Maximum propagation delay allowed for this port to reach any other port in the subnet. This value also affects the maximum rate at which traps can be sent from this port. |
| resp-time-value | Maximum time allowed between the port reception of a subnet management packet and the transmission of the associated response. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 13.4.6.2, “Timers and Timeouts.” |
| local-phys-err | Threshold at which ICRC, VCRC, FCCRC, and all physical errors result in an entry into the BAD PACKET or BAD PACKET DISCARD states of the local packet receiver. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 7.12.2, “Error Recovery Procedures.” |
| overrun-err | Threshold at which the count of buffer overruns across consecutive flow-control update periods results in an overrun error. |
| sl-vl-map | Service lane to virtual lane map. Fields in this mapping as described in Table 3-65. |

Table 3-65 describes the fields in the **sl-vl-map** keyword output.

***Table 3-65 sl-vl-map Keyword Output Field Descriptions***

| Field | Description |
|---|---|
| node-guid | GUID of the SMA node. |
| in-ib-port | The ingress port of an InfiniBand data packet. |
| out-ib-port | The egress port of an InfiniBand data packet. |
| SL to VL mapping | For each service lane, show the underlying virtual lane which will be used for a packet on the given ingress port, which will be routed out the given egress port. |

Table 3-66 describes the **switch info** keyword output fields.

***Table 3-66 switch info Keyword Output Field Descriptions***

| Field | Description |
|---|---|
| guid | GUID of the SMA node. |
| lft-cap | The current maximum used entry in the Linear Forwarding Table. |
| rft-cap | The maximum capacity of the switch Random Forwarding Table. (This capacity is generally unmet, since only one LFT or RFT is implemented on any given switch and all Cisco SFS 7000 switches use the LFT.) |
| mft-cap | The maximum capacity of the Multicast Forwarding Table. |
| lft-top | The current maximum used entry in the Linear Forwarding Table. |
| default-port | Port used if the Random Forwarding Table is implemented. This port is the one to which packets are sent when the LID is not specified in the Random Forwarding Table. |
| def-mcast-pri-port | Default Multicast Primary Port—port to which multicast packets are sent when the LID is not present in the Multicast Forwarding Table. |
| def-mcast-NP-port | Default Multicast Not Primary Port—Same as above, but for multicast packets arriving on the Default Multicast Primary Port. |
| life-time-value | Specifies the maximum time a packet can live in the switch. See the InfiniBand specification for the definition of this value. |
| port-state-change | Indicates that a port on the switch has changed its state. Used by the subnet manager to determine if it needs to look at the port states. |
| lids-per-port | Specifies the number of LID/LMC combinations that can be used per port if the Random Forwarding Table is implemented. |
| partition-enf-cap | The number of entries in the Partition Enforcement Table per port. |
| inbound-enf-cap | Indicates whether or not the switch is capable of partition enforcement on inbound (received) packets. |
| outbound-enf-cap | Indicates whether or not the switch is capable of partition enforcement on outbound (transmitted) packets. |
| filter-raw-pkt-in-cap | Indicates whether or not the switch is capable of raw packet enforcement on inbound (received) packets. |
| filter-raw-pkt-out-cap | Indicates whether or not the switch is capable of raw packet enforcement on outbound (transmitted) packets. |

The following example displays the linear forwarding details of the InfiniBand switch:

```
SFS-7000P# show ib-agent switch 00:05:ad:00:00:00:13:7f linear-frd-info lid 2
======================================================================
                    Linear Forwarding Information
======================================================================
switch-guid : 00:05:ad:00:00:00:13:7f
lid     0     1     2     3     4     5     6     7
---     ----- ----- ----- ----- ----- ----- ----- -----
0                   0
SFS-7000P#
```

The following example displays the multicast information of the InfiniBand switch:

```
SFS-7000P# show ib-agent switch 00:05:ad:00:00:00:13:7f mcast-info lid all
=========================================================================
                             Multicast Information
=========================================================================
node-guid  : 00:05:ad:00:00:00:13:7f
block-index : 0
lid     port-mask
49152   00:00
49153   00:00
49154   00:00
49155   00:00
49156   00:00
49157   00:00
49158   00:00
49159   00:00
49160   00:00
49161   00:00
49162   00:00
49163   00:00
49164   00:00
…
```

The following example displays attributes of the InfiniBand nodes that connect to the switch:

```
SFS-7000P# show ib-agent switch all node-info
======================================================================
                    SMA Node Information
======================================================================
                     guid : 00:05:ad:00:00:00:13:7f
                     type : switch
                      lid : 2
             base-version : 1
            class-version : 1
                port-guid : 00:05:ad:00:00:00:13:7f
            partition-cap : 1
                device-id : a8:7c
                 revision : 00:00:00:a0
           local-port-num : 255
                vendor-id : 00:05:ad
              trap-buffer :
                num-ports : 9
                   string : slot 16: /dev/ts_ua0
```

The following example displays the port attributes of the switch:

```
SFS-7000D# show ib-agent switch 00:05:ad:00:00:00:1e:1c port-info


================================================================================
                                Port Information
================================================================================
               node-guid : 00:05:ad:00:00:00:1e:1c
                    port : 0
                    mkey : 00:00:00:00:00:00:00:00
              gid-prefix : fe:80:00:00:00:00:00:00
                     lid : 2
           master-sm-lid : 2
         capability-mask : 00:10:08:4a
               diag-code : 00:00
       mkey-lease-period : 00:00
          local-port-num : 0
    link-width-supported : 1x, 4x
      link-width-enabled : 4x
       link-width-active : 4x
    link-speed-supported : sdr
      link-speed-enabled : sdr
       link-speed-active : sdr
                   state : active
               port-phys : linkup
           link-down-def : polling
       mkey-protect-bits : 0
                     lmc : 0
            neighbor-mtu : 2048
            master-sm-sl : 0
                  vl-cap : VL0 - VL7
           vl-high-limit : 0
  vl-arbitration-high-cap : 8
   vl-arbitration-low-cap : 8
                 mtu-cap : 2048
          vl-stall-count : 0
                hoq-life : 0
                  op-vls : VL0 - VL7
             pkey-enf-in : 0
            pkey-enf-out : 0
       filter-raw-pkt-in : 0
      filter-raw-pkt-out : 0
         mkey-violations : 0
         pkey-violations : 0
         qkey-violations : 0
                guid-cap : 1
          subnet-timeout : 0
            resp-timeout : 17
          local-phys-err : 0
             overrun-err : 0
```

The following example displays the service level to virtual lane mapping table on the switch:

```
SFS-7000P# show ib-agent switch 00:05:ad:00:00:00:13:7f sl-vl-map
======================================================================
                                 SLVL-Map Table
======================================================================
                node-guid : 00:05:ad:00:00:00:13:7f
               in-ib-port : 0
              out-ib-port : 0
                  sl0toVl : 0
                  sl1toVl : 0
                  sl2toVl : 0
                  sl3toVl : 0
                  sl4toVl : 0
                  sl5toVl : 0
                  sl6toVl : 0
                  sl7toVl : 0
                  sl8toVl : 0
                  sl9toVl : 0
                 sl10toVl : 0
                 sl11toVl : 0
                 sl12toVl : 0
                 sl13toVl : 0
                 sl14toVl : 0
                 sl15toVl : 0
…
```

The following example displays SMA switch information:

```
SFS-7000P# show ib-agent switch all switch-info

============================================================================
                             SMA Switch Information
============================================================================
                     guid : 00:05:ad:00:00:00:02:40
                  lft-cap : 49152
                  rft-cap : 0
                  mft-cap : 1024
                  lft-top : 1024
             default-port : 255
       def-mcast-pri-port : 255
        def-mcast-NP-port : 255
          life-time-value : 11
        port-state-change : 0
            lids-per-port : 0
        partition-enf-cap : 64
          inbound-enf-cap : 1
         outbound-enf-cap : 1
     filter-raw-pkt-in-cap : 1
    filter-raw-pkt-out-cap : 1
```

## Related Commands

**ib sm**
**show ib sm configuration**
**show ib sm neighbor**
**show ib sm partition**
**show ib sm port**

# show interface ethernet

To display the attributes of Ethernet ports, enter the **show interface ethernet** command in user EXEC mode or privileged EXEC mode.

**show interface ethernet** {*port-selection* | **all**} [**ip** {*ip-address* | **all**} **ip-info** | **ip-backup** {*backup-address* | **all**} | **statistics**]

## Syntax Description

| | |
|---|---|
| *port-selection* | Port, list of port, or range of ports that you want to view. |
| **all** | • Displays the attributes of all the Ethernet ports on your server switch when you enter it after the **show interface ethernet** command.<br>• Displays details on all IP addresses when you enter it after the **ip** keyword.<br>• (Optional) Displays details on all backup IP addresses when you enter it after the **ip-backup** keyword. |
| **ip** | (Optional) Displays IP address table of the ports that you specify. |
| *ip-address* | IP address with the details that you want to view. |
| **ip-info** | (Optional) Displays statistical data of the transmissions that occur on IP addresses. |
| **ip-backup** | (Optional) Displays statistical data of the transmissions that occur on the backup IP addresses. |
| *backup-address* | Backup IP address with the details that you want to view. |
| **statistics** | (Optional) Displays Ethernet interface statistics for diagnostic purposes. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-only user.

Use this command to help diagnose Ethernet connectivity problems.

Table 3-67 describes the fields in the **show interface ethernet** command output.

*Table 3-67 show interface ethernet Command Field Descriptions*

| Field | Description |
|---|---|
| port | Port number, in slot#/port# format. |
| name | Administratively-configured port name. |

*Table 3-67 show interface ethernet Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| type | Type of port. |
| desc | Name that you assign with the **name** command. |
| last-change | Time of the most recent configuration change that a user made to the port. |
| mac-address | MAC address of the port. |
| mtu | Maximum transmission unit (MTU) of the port, in bytes. |
| auto-negotiate-supported | Displays “yes” if the port supports auto-negotiation. |
| auto-negotiate | Displays “enabled” if you have configured auto-negotiation to run on the port. |
| admin-status | Administrative status of the port. |
| oper-status | Operational status of the port. |
| admin-speed | Administrative speed that you configured on the port. |
| oper-speed | Operational (actual) speed at which the port runs. Actual speed differs from admin speed if the port on the other end of the connection cannot support the speed that you configured. |
| admin-duplex | Administrative duplex type (half or full) that you configured to run on the port. |
| oper-duplex | Operational (actual) duplex type at which the port runs. Actual duplex type differs from admin duplex type if the port on the other end of the connection cannot support the type that you specified. |
| link-trap | Displays “enabled” if you configured the port to send link traps with the **link-trap** command. |
| action | Action (such as flushing the ARP table) that you had the interface perform. |
| result | Status of the action that you had the interface perform. |

Table 3-68 describes the fields in the **ip** keyword output.

*Table 3-68 ip Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| port | Port number, in card#port# format. A port# of **0** represents the gateway port of the interface card. |
| address | IP address that you assigned to the port. |
| mask | Subnet mask that you assigned to the port. |
| bcast-addr format | IP broadcast address format that the port uses. |
| reasm max-size | Size of the largest IP datagram which this port can receive and reassemble from incoming fragmented IP datagrams. |

*Table 3-68 ip Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| type | Displays "primary" or "backup" to indicate that the interface card acts as the primary or backup interface for the IP address that appears in the address field. |
| status | Displays "active" or "inactive" to indicate that the card actively services IP packets addressed to the IP address in the address field or does not service packets to the specified address. |

Table 3-69 describes the fields in the **ip-info** keyword output.

*Table 3-69 ip-info Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| port | Port number, in slot#/port# format. |
| default-ttl | Default time-to-live value, in seconds. |
| in-receives | Cumulative number of input datagrams (including errors) that interfaces received for the IP address that you specified with the **ip** keyword. |
| in-hdr-errors | Cumulative number of datagrams that interfaces discarded. Reasons to discard a datagram include the following:<br>• bad checksums<br>• version number mismatches<br>• format errors<br>• exceeded time-to-live values<br>• IP option processing errors |
| in-addr-errors | Cumulative number of input datagrams that ports discarded because the IP address in the destination field of the header of the datagram was not a valid address to be received by the port. |
| forw-datagrams | Cumulative number of datagrams that arrived at the port en-route to a final destination. For non-IP-gateway ports, this value includes only packets that the port Source-Routed successfully. |
| in-unknown-protos | Cumulative number of datagrams that the port successfully received but discarded due to an unknown or unsupported protocol. |
| in-discards | Cumulative number of datagrams that the port discarded for a reason other than a problem with the datagram (for example, lack of buffer space). |
| in-delivers | Cumulative number of input datagrams that the port successfully delivered to IP user-protocols, including Internet Control-Message Protocol (ICMP). |
| out-requests | Cumulative number of IP datagrams that local IP user-protocols (including ICMP) supplied to IP in-requests. This counter does not include any datagrams counted as forw-datagrams. |
| out-discards | Cumulative number of output IP datagrams that the port discarded for a reason other than a problem with the datagram (for example, lack of buffer space). |

*Table 3-69 ip-info Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| out-no-routes | Cumulative number of IP datagrams that the port discarded because a route could not be found to transmit them to their destination. This counter includes any packets counted in forw-datagrams that still qualify. This counter also includes any datagrams that a server switch cannot route because all of the gateways on the server switch are down. |
| frag-OKs | Cumulative number of IP datagrams that the port has successfully fragmented. |
| frag-fails | Cumulative number of IP datagrams that the port discarded because the port could not fragment them. (For instance, this situation occurs when the Don't Fragment flag of the datagram is set.) |
| frag-creates | Cumulative number of IP datagram fragments that the port has generated. |

Table 3-70 describes the fields in the **ip-backup** keyword output.

*Table 3-70 ip-backup Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| if-index | Port number. |
| priority | Priority of the backup address that you applied with the **ip (Ethernet interface configuration submode)** command. |

Table 3-70 describes the fields in the **statistics** keyword output.

*Table 3-71 statistics Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| port | Port identifier, in slot#/port# format. |
| name | Administrative port name that you configured with the **name** command. The parenthetical identifier represents the SNMP identifier. |
| in-octets | Cumulative number of octets that arrived at the port, including framing characters. |
| in-ucast-pkts | Cumulative number of incoming packets destined for a single port. |
| in-multicast-pkts | Cumulative number of incoming packets destined for the ports of a multicast group. |
| in-broadcast-pkts | Cumulative number of incoming packets destined for all ports on the fabric. |
| in-discards | Cumulative number of inbound packets that the port discarded for a reason other than a packet error (for example, lack of buffer space). |
| in-errors | Number of inbound packets with errors that the port discarded. |

*Table 3-71 statistics Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| in-unknown-protos | For packet-oriented interfaces, the number of packets that were received through the interface and were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received through the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is always 0. |
| out-octets | Total number of octets transmitted out of the interface, including framing characters. |
| out-ucast-pkts | Total number of packets that higher-level protocols requested be transmitted and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-multicast-pkts | Total number of packets that higher-level protocols requested be transmitted and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses. |
| out-broadcast-pkts | Total number of packets that higher-level protocols requested to be transmitted and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-discards | Number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free-up buffer space. |
| our-errors | For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors. |
| alignment-errors | A count of frames received on a particular interface that are not an integral number of octets in length and do not pass the FCS check. The count represented by an instance of this object is incremented when the alignmentError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions obtain are counted exclusively according to the error status presented to the LLC. This counter does not increment for 8-bit wide group encoding schemes. |
| fcs-errors | A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check. This count does not include frames received with frame-too-long or frame-too-short error. The count represented by an instance of this object is incremented when the frameCheckError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions obtain are counted exclusively according to the error status presented to the LLC.<br>Coding errors detected by the physical layer for speeds above 10 Mbps will cause the frame to fail the FCS check. |

*Table 3-71 statistics Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| single-collision-frames | A count of successfully transmitted frames on a particular interface for which transmission is inhibited by exactly one collision. A frame that is counted by an instance of this object is also counted by the corresponding instance of the out-ucast-pkts, out-multicast-pkts, or out-broadcast-pkts, and is not counted by the corresponding instance of the multiple-collision-frames object. This counter does not increment when the interface is operating in full-duplex mode. |
| multiple-collision-frames | A count of successfully transmitted frames on a particular interface for which transmission is inhibited by more than one collision. A frame that is counted by an instance of this object is also counted by the corresponding instance of the out-ucast-pkts, out-multicast-pkts, or out-broadcast-pkts. It is not counted by the corresponding instance of the single-collision-frames object. This counter does not increment when the interface is operating in full-duplex mode. |
| sqe-test-errors | A count of times that the SQE TEST ERROR message is generated by the PLS sublayer for a particular interface. The SQE TEST ERROR is set in accordance with the rules for verification of the SQE detection mechanism in the PLS Carrier Sense Function, as described in IEEE Std. 802.3, 1998 Edition, section 7.2.4.6. This counter does not increment on interfaces operating at speeds greater than 10 Mbps or on interfaces operating in full-duplex mode. |
| deferred-transmissions | A count of frames for which the first transmission attempt on a particular interface is delayed because the medium is busy. The count represented by an instance of this object does not include frames involved in collisions. This counter does not increment when the interface is operating in full-duplex mode. |
| late-collisions | The number of times that a collision is detected on a particular interface later than one Ethernet slot-time unit into the transmission of a packet. A late collision included in a count represented by an instance of this object is also considered as a generic collision for purposes of other collision-related statistics. This counter does not increment when the interface is operating in full-duplex mode. |
| excessive-collisions | A count of frames for which transmission on a particular interface fails due to excessive collisions. This counter does not increment when the interface is operating in full-duplex mode. |
| internal-mac-transmit-errors | A count of frames for which transmission on a particular interface fails due to an internal MAC sublayer transmit error. A frame is only counted by an instance of this object if it is not counted by the corresponding instance of the late-collisions object, the excessive-collisions object, or the carrier-sense-errors object. The precise meaning of the count represented by an instance of this object is implementation-specific. In particular, an instance of this object might represent a count of transmission errors on a particular interface that is not otherwise counted. |

*Table 3-71 statistics Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| carrier-sense-errors | Number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame on a particular interface. The count represented by an instance of this object is incremented at most once per transmission attempt, even if the carrier sense condition fluctuates during a transmission attempt. This counter does not increment when the interface is operating in full-duplex mode. |
| frame-too-longs | A count of frames received on a particular interface that exceed the maximum permitted frame size. The count represented by an instance of this object is incremented when the frame-too-longs status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions obtain are counted exclusively according to the error status presented to the LLC. |
| internal-mac-receive-errors | A count of frames for which reception on a particular interface fails due to an internal MAC sublayer receive error. A frame is only counted by an instance of this object if it is not counted by the corresponding instance of the frame-too-longs, alignment-errors, or fcs-errors object. The precise meaning of the count represented by an instance of this object is implementation-specific. In particular, an instance of this object might represent a count of receive errors on a particular interface that is not otherwise counted. |

## Examples

The following example shows the general information about a specific IP address on an Ethernet interface port:

```
SFS-7000P# show inter ether 4/1 ip 10.3.22.4
======================================================================
                         IP Address Table
======================================================================
port  address         mask            bcast-addr reasm    type     status
                                      format     max-size
----------------------------------------------------------------------
4/1   10.3.22.4       255.255.255.0   1          0        primary  active
SFS-7000P#
```

The following examples displays statistical data regarding the IP transactions of all the IP addresses on an interface port. Statistical data is comprised of transmission errors, requests, discards, packet fragments, and so on.

```
SFS-7000P# show inter ether 4/1 ip all ip-info
======================================================================
                        IP Information
======================================================================
                     port : 4/1
              default-ttl : 0
              in-receives : 0
            in-hdr-errors : 0
           in-addr-errors : 0
           forw-datagrams : 0
        in-unknown-protos : 0
              in-discards : 0
              in-delivers : 0
            out-requests : 0
            out-discards : 0
           out-no-routes : 0
                frag-OKs : 0
              frag-fails : 0
            frag-creates : 0
SFS-7000P#
```

The following example displays traffic statistics for port 4/1:

```
SFS-7000P# show interface ethernet 4/1 statistics
======================================================================
                     Ethernet Interface Statistics
======================================================================
                          port : 4/1
                          name : 4/1 (257)
                     in-octets : 0
                 in-ucast-pkts : 0
             in-multicast-pkts : 0
             in-broadcast-pkts : 0
                   in-discards : 0
                     in-errors : 0
             in-unknown-protos : 0
                    out-octets : 0
                out-ucast-pkts : 0
            out-multicast-pkts : 0
            out-broadcast-pkts : 0
                  out-discards : 0
                    out-errors : 0

              alignment-errors : 0
                    fcs-errors : 0
       single-collision-frames : 0
     multiple-collision-frames : 0
               sqe-test-errors : 0
        deferred-transmissions : 0
               late-collisions : 0
          excessive-collisions : 0
  internal-mac-transmit-errors : 0
          carrier-sense-errors : 0
               frame-too-longs : 0
   internal-mac-receive-errors : 0
SFS-7000P#
```

## Related Commands

**half-duplex**
**ip address (Ethernet interface configuration submode)**
**trunk-group**

# show interface fc

To display the attributes of Fibre Channel ports, enter the **show interface fc** command in user EXEC mode or privileged EXEC mode.

**show interface fc** {*port-selection* | **all**} [**statistics** | **targets** | **virtual-ports**]

## Syntax Description

| | |
|---|---|
| *port-selection* | Port, list of ports, or range of ports to display. |
| **all** | Displays all Fibre Channel ports on your server switch. |
| **statistics** | (Optional) Displays traffic statistics for the ports that you specify. |
| **targets** | (Optional) Displays the targets that the ports that you specify can access. |
| **virtual-ports** | (Optional) Displays the virtual ports that the FC gateway mapped to the ports that you specify. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Fibre Channel read-only user.

The administrative (admin) status, speed, and connection-type reflect the values you had assigned. The operational (oper) status, speed, and connection-type reflect the values derived from the physical hardware and its connections. This situation allows you to verify your configuration settings against the actual hardware. The admin/oper pairs do not have to match for you to use the card. However, if there is a mismatch, the operational value is used.

Table 3-72 describes the fields in the **show interface fc** command output.

*Table 3-72 show interface fc Command Field Descriptions*

| Field | Description |
|---|---|
| port | Fibre Channel gateway port number, in slot#/port# format. |
| name | Administrative port name that you configure with the **name** command. |
| type | Identifies the type of the port. All type identifiers begin with “fc” for Fibre Channel ports. |
| desc | Text description of the interface port. The default is the port identifier in the form slot#/port#. The parenthetical number to the right of the description is the SNMP identifier. The SNMP identifier is useful if you are running your own SNMP software. |

*Table 3-72 show interface fc Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| last-change | Time of the most recent configuration change that a user made to the port. |
| fc-address | Fibre Channel Protocol address of the port. |
| wwnn | World-wide node name of the port. The WWNN defaults to 00:00:00:00:00:00:00:00. |
| wwpn | World-wide port name of the port. The WWPN defaults to 00:00:00:00:00:00:00:00. |
| mtu | Maximum Transmission Unit (MTU) of the port. The MTU value defaults to 2080 bytes. |
| auto-negotiate-supported | Displays **yes** if the port supports auto-negotiation or no if the port does not support auto-negotiation. |
| auto-negotiate | Indicates if the Fibre Channel port on the interface card is configured to automatically negotiate connection parameters when it connects with a Fibre Channel device. If auto-negotiation is enabled, the connection speed and mode (duplex, half-duplex) are determined at the time of connection. If the device does not support auto-negotiation, this field still displays a value, but the value does not apply. The value is **enabled** or **disabled**. The default is disabled. This field is set by the **auto-negotiate** (Fibre Channel interface configuration submode) command. |
| admin-status | Indicates if you have enabled the port for configuration and use. The value of this field can be “up” or “down.” The default is “down.” The field is set by the **shutdown** command. |
| oper-status | Indicates if the port is physically ready for configuration and use. The value of this field can be “up” or “down.” If this field is down but the admin-status is up, check that the Fibre Channel interface card is securely seated in the slot and a cable is attached between the port and the target FC device. |
| admin-speed | Indicates the speed administratively assigned to the Fibre Channel port. The value of this field can be 2 Gbps or 1 Gbps. Speed defaults to 2 Gbps. You can configure this setting with the **speed** (Fibre Channel interface configuration submode) command. |
| oper-speed | Indicates the maximum speed of the Fibre Channel port, based upon the attached Fibre Channel cable and polling the connected Fibre Channel device. |
| admin-connection-type | Indicates the type of connection administratively assigned to the interface port. The value can be forceNLPort for the fc2port2G, force-e, force-f, auto-e, or auto-f for the fc4port2G, forceBPort, or none. The default is forceNLPort. This field is set by the **type** command. |
| oper-connection-type | Indicates the type of connection dynamically discovered for the interface port. |
| link-trap | Indicates if connection link errors are to be captured and sent to trap recipients. The value can be either enabled or disabled. This field is set by the **link-trap** command. |

Table 3-73 describes the fields in the **statistics** keyword output.

*Table 3-73 statistics Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| port | Fibre Channel gateway port number, in slot#/port# format. |
| name | Administratively assigned or default name of the port. The default name is the port name in the form slot#/port#. Configure this field with the **name** command. The number in parentheses to the right of the name is the SNMP identifier. The SNMP identifier is useful if you are running your own SNMP software. |
| in-octets | Cumulative number of octets received on the interface, including framing characters. |
| in-ucast-pkts | Cumulative number of packets, delivered by this sub-layer to a higher layer, that were not addressed to a multicast or broadcast address at this sub-layer. |
| in-multicast-pkts | Cumulative number of packets, delivered by this sub-layer to a higher layer, that were addressed to a multicast address at this sub-layer. For a MAC layer protocol, this includes both Group and Functional addresses. |
| in-broadcast-pkts | Cumulative number of packets, delivered by this sub-layer to a higher layer, that were addressed to a broadcast address at this sub-layer. |
| in-discards | Cumulative number of inbound packets that were discarded even though no errors had been detected to prevent their being delivered to a higher-layer protocol. One possible reason for discarding such a packet can be to free-up buffer space. |
| in-errors | For packet-oriented interfaces, the cumulative number of inbound packets that contained errors that prevented them from being delivered to a higher-layer protocol. For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being delivered to a higher-layer protocol. |
| in-unknown-protos | For packet-oriented interfaces, the cumulative number of packets that were received through the interface that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received through the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is always 0. |
| out-octets | Cumulative number of octets transmitted out of the interface, including framing characters. |
| out-ucast-pkts | Cumulative number of packets that higher-level protocols requested be transmitted and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-multicast-pkts | Cumulative number of packets that higher-level protocols requested be transmitted and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses. |

*Table 3-73 statistics Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| out-broadcast-pkts | Cumulative number of packets that higher-level protocols requested to be transmitted and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-discards | Cumulative number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free-up buffer space. |
| out-errors | For packet-oriented interfaces, the cumulative number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors. |
| link-events | Cumulative number of link events processed by the Fibre Channel interface port. |
| fcp-cmds-outstanding | Cumulative number of FCP commands outstanding on the Fibre Channel interface port. |
| fcp-cmds-completed | Cumulative number of FCP commands completed on the Fibre Channel interface port. |
| fcp-errors | Cumulative number of FCP errors encountered on the Fibre Channel interface port. |
| fc-initiator-IO | Cumulative number of transactions between the Fibre Channel initiator and this port. |

Table 3-74 describes the fields in the **targets** keyword output.

*Table 3-74 targets Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| wwpn | World-wide port name (WWPN) of the target. |
| wwnn | World-wide node name (WWNN) of the target. |
| description | Dynamically-assigned or administratively-assigned description of the target. Enter the **fc srp target** command with the **description** keyword to configure this field. |
| ioc-guid | I/O controller (IOC) GUID of the FC gateway that accesses the target. |
| service-name | Name of the service that the target runs. |
| protocol-ids | Lists the protocols that the target supports. |
| fc-address | Fibre Channel protocol address of the target. |
| mtu | Maximum transmission unit (MTU) of the target, in bytes. |
| connection-type | For this release, all targets connect to NL_Ports. |
| physical-access | Port, in slot#/port# format, on your server switch to which the target connects. |

Table 3-75 describes the fields in the **virtual-ports** keyword output.

*Table 3-75 virtual-ports Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| guid | GUID of the physical initiator. |
| extension | GUID extension of the physical initiator. |
| initiator-description | Administratively-assigned description of the initiator. |
| wwnn | World-wide node name (WWNN) of the initiator. |
| port | Physical port on your server switch to which the virtual port maps. |
| wwpn | World-wide port name (WWPN) of the virtual port. |
| fc-address | Fibre Channel protocol address of the virtual port. |

## Examples

The following example shows the output of the **show interface fc** command without the **statistics** keyword:

```
SFS-7000P# show interface fc 5/1
======================================================================
                      Fibre Channel Interface Info
======================================================================
                     port : 5/1
                     name : 5/1
                     type : fc2GFX
                     desc : 5/1 (321)
              last-change : none
               fc-address : 00:00:00
                     wwnn : 00:00:00:00:00:00:00:00
                     wwpn : 00:00:00:00:00:00:00:00
                      mtu : 2080
 auto-negotiate-supported : yes
           auto-negotiate : enabled
             admin-status : up
              oper-status : down
              admin-speed : 2gbps
               oper-speed : unknown
              oper-duplex : unknown
    admin-connection-type : force-NL
     oper-connection-type : down
                link-trap : enabled
```

The following example displays all FC targets that the FC interfaces encounter:

```
SFS-7000P# show interface fc all targets
================================================================================
                                   Fc Targets
================================================================================
                     wwpn: 50:06:01:60:10:20:4e:31
                     wwnn: 50:06:01:60:90:20:4e:31
              description: SRP.T10:5006016010204E31
                 ioc-guid: 00:05:ad:00:00:01:38:80
             service-name: SRP.T10:5006016010204E31
             protocol-ids: 04:00:00:00:00:00:00:00:00:00
               fc-address: 61:07:13
                      mtu: 0
          connection-type: nl-port
          physical-access: 9/2

                     wwpn: 50:06:01:68:10:20:4e:31
                     wwnn: 50:06:01:60:90:20:4e:31
              description: SRP.T10:5006016810204E31
                 ioc-guid: 00:05:ad:00:00:01:38:80
             service-name: SRP.T10:5006016810204E31
             protocol-ids: 04:00:00:00:00:00:00:00:00:00
<output truncated>
```

The following example displays all virtual ports on the interface:

```
SFS-7000P# show interface fc all virtual-ports
================================================================================
                                Fc Virtual Ports
================================================================================
                     guid: 00:05:ad:00:00:12:34:56
                extension: 00:00:00:00:00:00:00:00
    initiator-description: kauai
                     wwnn: 20:01:00:05:ad:01:5a:5c
                     port: 9/1
                     wwpn: 20:01:00:05:ad:91:5a:5c
               fc-address: 61:0a:02

                     guid: 00:05:ad:00:00:12:34:56
                extension: 00:00:00:00:00:00:00:00
    initiator-description: kauai
                     wwnn: 20:01:00:05:ad:01:5a:5c
                     port: 9/2
                     wwpn: 20:01:00:05:ad:95:5a:5c
               fc-address: 61:05:02
```

## Related Commands

**fc srp-global gateway-portmask-policy restricted**
**fc srp-global itl**
**fc srp it**
**fc srp target**
**show fc srp initiator**
**type**

# show interface gateway

To display attributes of the internal InfiniBand gateway ports of Fibre Channel and Ethernet expansion modules, enter the **show interface gateway** command in user EXEC mode or privileged EXEC mode.

**show interface gateway** *slot-selection* [**fc srp initiator-target** *guid extension* | {**ip** | **ip-backup**} {**ip-address** | **all**} | **sma** {**node-info** | **port-info** [**details**]}| **statistics**]

## Syntax Description

| | |
|---|---|
| *slot-selection* | Internal gateway port that you want to view. |
| **fc srp initiator-target** | (Optional) Displays FC targets that an initiator can access. |
| *guid* | (Optional) GUID of the initiator. |
| *extension* | (Optional) GUID extension of the initiator. |
| **ip** | Displays attributes of IP addresses on the card. |
| **ip-backup** | Displays attributes of backup IP addresses on the card. |
| **ip-address** | Individual IP address with the attributes that you want to view. |
| **all** | Displays attributes of all addresses. |
| **sma** | Displays SMA information. |
| **node-info** | Displays SMA node information |
| **port-info** | Displays SMA port information. |
| **details** | (Optional) Displays detailed SMA port information. |
| **statistics** | (Optional) Displays gateway statistics of the card. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3012, Cisco SFS 3001, Cisco SFS 3012R

### Privilege Level:

Fibre Channel read-only user.

Use this command to troubleshoot connectivity issues. Verify that the show output matches the configuration file.

Table 3-76 describes the fields in the **show interface gateway** command output.

*Table 3-76 show interface gateway Command Field Descriptions*

| Field | Description |
|---|---|
| gateway | Number of the slot in which the gateway resides. |
| name | Administrative name that you configure with the **name** command. |
| type | Type of interface card, either Ethernet or Fibre Channel. |
| desc | Description of the port, in slot#/port# format. The port identifier appears as zero (**0**) to indicate an internal port. The number in parentheses serves as the SNMP identifier. |
| last-change | Time of the most recent configuration change that a user made to the port. |
| mtu | Maximum transmission unit (MTU) of the internal gateway port. |
| admin-status | Administrative status of the gateway that you configure with the **shutdown** command. |
| oper-status | Actual status of the gateway. |

Table 3-77 describes the fields that appear when you use the **fc srp initiator-target** argument with the **show interface gateway** command.

*Table 3-77 fc srp initiator-target Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| wwpn | World-wide port name (WWPN) of the target that the initiator can access. |
| wwnn | Wold-wide node name (WWNN) of the target that the initiator can access. |
| description | Description of the target. |
| ioc-guid | GUID of the IOC assigned to the target. |
| service-name | Service that the target runs. |
| protocol-ids | Lists the protocols that the target supports. |
| fc-address | Fibre Channel protocol address of the target. |
| mtu | Maximum transmission unit (MTU) of the target. |
| connection-type | Type of connection between the storage and the InfiniBand host. The field will always display **nl-port**, because all storage-to-IB host connections occur over a virtual port, or NL_Port. |
| physical-access | Port or ports through which the target connects to the initiator. |

Table 3-78 describes the fields that appear when you use the **ip** keyword with the **show interface gateway** command.

*Table 3-78 ip Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| port | Port number, in card#port# format. A port# of **0** represents the gateway port of the interface card. |
| address | IP address that you assigned to the port. |
| mask | Subnet mask that you assigned to the port. |
| bcast-addr format | IP broadcast address format that the port uses. |
| reasm max-size | Size of the largest IP datagram that this port can receive and reassemble from incoming fragmented IP datagrams. |
| type | Displays "primary" or "backup" to indicate that the interface card acts as the primary or backup interface for the IP address that appears in the "address" field. |
| status | Displays "active" or "inactive" to indicate that the card actively services IP packets addressed to the IP address in the "address" field or does not service packets to the specified address. |

Table 3-79 describes the fields that appear when you use the **ip-backup** keyword with the **show interface gateway** command.

*Table 3-79 ip-backup Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| if-index | Numeric identifier, or "interface index," of the port, in slot#/port# notation. |
| priority | Displays the priority of each backup address. |

**Note** This keyword applies to Fibre Channel cards only.

Table 3-80 describes the fields that appear when you use the **statistics** keyword with the **show interface gateway** command.

*Table 3-80 statistics Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| slot-id | Chassis slot that contains the gateway that you want to display. |
| link-events | Cumulative number of link events that the gateway has processed. |
| srp-cmds-outstanding | Cumulative number of unresolved SRP commands on the gateway. |
| srp-cmds-completed | Cumulative number of SRP commands that the gateway executed. |
| srp-errors | Cumulative number of SRP errors that the gateway encountered. |
| srp-initiated-ios | Cumulative number of I/O transactions that initiators requested of FC devices through the gateway. |
| srp-bytes-read | Cumulative number of I/O bytes that the gateway has read. |

*Table 3-80 statistics Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| srp-bytes-written | Cumulative number of I/O bytes that the gateway has written. |
| srp-connections | Cumulative number of I/O connections that the gateway has used. |
| fcp-cmds-outstanding | Cumulative number of unresolved FCP commands on the gateway. |
| fcp-cmds-completed | Cumulative number of FCP commands that the gateway executed. |
| fcp-errors | Cumulative number of FCP errors that the gateway encountered. |
| fcp-initiated-ios | Cumulative number of I/O replies that FC devices sent through the gateway in response to SRP requests from initiators. |
| fcp-bytes-read | Cumulative number of Fibre Channel Protocol bytes that the card has read since it came up. |
| fcp-bytes-written | Cumulative number of Fibre Channel Protocol bytes that the card has written since it came up. |

## Examples

The following example displays the attributes of the IP address of the gateway port:

```
SFS-7000P# show interface gateway 5 ip all
======================================================================
                                IP Address Table
======================================================================
port  address         mask            bcast-addr reasm    type     status
                                      format     max-size
----------------------------------------------------------------------------
4/0   10.3.22.0       255.255.255.0   1          0        primary  active
SFS-7000P#
```

The following example uses the **show interface gateway** command to display general gateway properties. The information fields displayed depend upon the interface type. The example below displays the properties of a Fibre Channel gateway port. To see the properties of an Ethernet port, see the description of the "show interface ethernet" section on page 3-306.

```
SFS-7000P# show interface gateway 4
===============================================================
===============================================================
               Gateway Information
===============================================================
                  gateway : 4
                     name : 4/0
                     type : fc-gateway
                     desc : 4/0 (320)
              last-change : none
                      mtu : 0
             admin-status : up
              oper-status : up
SFS-7000P#
```

The following example displays traffic statistics for the internal gateway port:

```
SFS-7000P# show inter gateway 2 stat
================================================================
                    Gateway Statistics
================================================================
                  slot-id: 2
              link-events: 0
     srp-cmds-outstanding: 0
       srp-cmds-completed: 0
               srp-errors: 0
        srp-initiated-ios: 0
           srp-bytes-read: 0
        srp-bytes-written: 0
          srp-connections: 0
     fcp-cmds-outstanding: 0
       fcp-cmds-completed: 0
               fcp-errors: 0
        fcp-initiated-ios: 0
           fcp-bytes-read: 0
        fcp-bytes-written: 0
SFS-7000P#
```

## Related Commands

**fc srp initiator**
**fc srp it**
**show ip**

# show interface ib

To display attributes of InfiniBand ports, enter the **show interface ib** command in user EXEC mode or privileged EXEC mode.

**show interface ib** *port-selection* [**sma** {**node-info** | **port-info** [**detail**]} | **statistics**]

## Syntax Description

| | |
|---|---|
| *port-selection* | Port, list of ports, or range of ports that you want to view. |
| **sma** | (Optional) Displays subnet management agent (SMA) information. |
| **node-info** | Displays node-based SMA information. |
| **port-info** | Displays port-based SMA information |
| **detail** | (Optional) Displays detailed, port-based SMA information. |
| **statistics** | (Optional) Displays InfiniBand interface traffic statistics. |

## Defaults

See Table 3-81 through Table 3-85.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

InfiniBand read-only user.

Without the optional **sma** or **statistics** keywords, the **show interface ib** command displays general information about the InfiniBand interface port, such as its administrative status, its operational speed and status, and duplex mode.

Table 3-81 describes the fields in the **show interface ib** command output.

*Table 3-81 show interface ib Command Field Descriptions*

| Field | Description |
|---|---|
| port | Identifies the InfiniBand interface card and port. The format is slot#/port#. |
| name | User assigned name. If no name is assigned, the port name is displayed instead. This field is set by the **name** command. |
| type | Identifies the type of the InfiniBand card. Supported cards are ib1xTX, ib1xFX, ib4xTX, ib4xFX, ib4xTXP, and ib4xTXPD. This field is set by the **type** command. |

*Table 3-81 show interface ib Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| desc | Description of the port, in slot#/port# format. The number in parentheses serves as the SNMP identifier. |
| last-change | Time at which the InfiniBand port configuration was last changed. |
| mtu | Maximum Transmission Unit for the InfiniBand port. Used to configure the MTU size of IP network traffic. |
| auto-negotiate supported (select server switches) | Displays "yes" if the port supports auto-negotiation or "no" if the port does not support auto-negotiation. |
| auto-negotiate (select server switches) | Indicates if the InfiniBand port on the interface card is configured to automatically negotiate connection parameters when it connects with an InfiniBand device. If auto-negotiation is enabled, the connection speed or link capacity is determined at the time of connection. If the device does not support auto-negotiation, this field still displays a value, but the value does not apply. The value is **enabled** or **disabled**. The default is disabled. This field is set by the **auto-negotiate** (InfiniBand interface configuration submode) command. |
| admin-status | Indicates if you have enabled the port for configuration and use. The value of this field can be "up" or "down." The default is "down." The field is set by the **shutdown** command. |
| oper-status | Indicates if the port is physically ready for configuration and use. The value of this field can be "up" or "down." If this field is down but the admin-status is up, check that the InfiniBand interface card is securely seated in the slot and a cable is attached between the port and the target InfiniBand host. |
| admin-speed (select server switches) | Indicates the requested link capacity in Gbps and as a function of its link width and lane speed. Possible displayed values are 1x-sdr (2.5 gbps), 4x-sdr (10 gbps), 12x-sdr (30 gbps), 1x-ddr (5 gbps), 4x-ddr (20 gbps), and 12x-ddr (60 gbps). You can configure this setting with the **speed** (InfiniBand interface configuration submode) command. |

Table 3-81 show interface ib Command Field Descriptions (continued)

| Field | Description |
|---|---|
| oper-speed (select server switches) | Indicates the actual link capacity in Gbps and as a function of link width and lane speed. Possible values are 1x-sdr (2.5 gbps), 4x-sdr (10 gbps), 12x-sdr (30 gbps), 1x-ddr (5 gbps), 4x-ddr (20 gbps), and 12x-ddr (60 gbps). The actual value is based upon the attached InfiniBand cable and polling the connected InfiniBand device. |
| link-trap | Indicates if connection link errors are to be captured and sent to trap recipients. The value can be either enabled or disabled. This field is set by the **link-trap** command. |
| phy-state | Indicates the physical state of the port, whether or not electricity flows between nodes and that they can perform a handshake. The value appears as no-state-change, sleeping, polling, disabled, port-configuration-training, linkup, or link-error-recovery. The state, upon power-up, defaults to polling. |
| dongle-type | Displays the port power connector dongle type variable. |
| dongle-state | Indicates the power control state of a dongle that is attached to a powered interface connector. Possible values are:<br>• no-state-change (0)<br>• on (1)<br>• off (2) |

The administrative (admin) status, speed, and connection-type reflect the values you had assigned. The operational (oper) status, speed, and connection-type reflect the values derived from the physical hardware and its connections. This allows you to verify your configuration settings against the actual hardware. The admin/oper pairs do not have to match for you to use the card. However, if there is a mismatch, the oper value is used.

Table 3-82 describes the fields that appear when you use the **sma node-info** argument with the **show interface ib** command.

Table 3-82 sma node-info Keyword Output Field Descriptions

| Field | Description |
|---|---|
| guid | GUID of the host. |
| type | Type of SMA node. This value always appears as switch. |
| lid | Base Local Identifier (LID) of the port. |
| base-version | Base management datagram version that the switch supports. |
| class-version | Subnet management class that the switch supports. |
| port-guid | GUID of the ports that you specified with the *port-selection* variable. |

*Table 3-82 sma node-info Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| partition-cap | Maximum number of partitions that the port supports. |
| device-id | Manufacturer-assigned device ID. |
| revision | Manufacturer-assigned device revision. |
| local-port-num | Number of the link port that received this show request. |
| vendor-id | Device vendor ID, as per the IEEE standard. |
| trap-buffer | Special purpose string buffer for InfiniBand Trap Data. |
| num-ports | Number of physical ports on the SMA node. |
| string | SMA node description string. |

Table 3-83 describes the fields that appear when you use the **sma port-info** argument with the **show interface ib** command.

*Table 3-83 sma port-info Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| node-guid | GUID of the InfiniBand host that connects to the port. |
| port | Host port that connects to your server switch. |
| mkey | 64-bit management key for this port. See section 14.2.4, “Management Key,” and 3.5.3, “Keys,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| gid-prefix | 64-bit global ID prefix for this port. This prefix is assigned by the subnet manager, based upon the port router and the rules for local identifiers. See section 4.1.3, “Local Identifiers,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| lid | 16-bit base-LID of this port. |
| capability-mask | 32-bit bitmask that specifies the supported capabilities of the port. A bit value of 1 (one) indicates a supported capability. The bits are 0, 11-15, 18, 21-31 (Reserved and always 0.), 1 IsSM, 2 IsNoticeSupported, 3 IsTrapSupported, 4 IsResetSupported, 5 IsAutomaticMigrationSupported, 6 IsSLMappingSupported, 7 IsMKeyNVRAM (supports M_Key in NVRAM), 8 IsPKeyNVRAM (supports P_Key in NVRAM), 9 Is LED Info Supported, 10 IsSMdisabled, 16 IsConnectionManagementSupported, 17 IsSNMPTunnelingSupported, 19 IsDeviceManagementSupported, 20 IsVendorClassSupported.Values are expressed in hexadecimal. |
| state | A higher form of addressing than PhyState, state determines that the nodes can actually communicate and indicates the state transition that has occurred. A transition is a port change from down to “initialize,” “initialize” to “down,” “armed” to “down,” or active to down as a result of link state machine logic. Changes to the port state resulting from SubnSet have no affect on this parameter value. The value is noStateChange, down, initialize, armed, or active. |

Table 3-84 describes the fields that appear when you use the **sma port-info details** argument with the **show interface ib** command.

*Table 3-84 sma port-info details Keyword Output Field Descriptions*

| Field | Description |
|---|---|
| node-guid | GUID of the InfiniBand host that connects to the port. |
| port | Host port that connects to your server switch. |
| mkey | 64-bit management key for this port. See section 14.2.4, Management Key and 3.5.3, "Keys," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| gid-prefix | 64-bit global ID prefix for this port. This prefix is assigned by the subnet manager, based upon the port router and the rules for local identifiers. See section 4.1.3, "Local Identifiers," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| lid | 16-bit base-LID of this port. |
| master-sm-lid | 16-bit base LID of the master subnet manager managing this port. |
| capability-mask | 32-bit bitmask that specifies the supported capabilities of the port. A bit value of 1 (one) indicates a supported capability. The bits are 0, 11-15, 18, 21-31 (Reserved and always 0.), 1 IsSM, 2 IsNoticeSupported, 3 IsTrapSupported, 4 IsResetSupported, 5 IsAutomaticMigrationSupported, 6 IsSLMappingSupported, 7 IsMKeyNVRAM (supports M_Key in NVRAM), 8 IsPKeyNVRAM (supports P_Key in NVRAM), 9 Is LED Info Supported, 10 IsSMdisabled, 16 IsConnectionManagementSupported, 17 IsSNMPTunnelingSupported, 19 IsDeviceManagementSupported, 20 IsVendorClassSupported. Values are expressed in hexadecimal. |
| diag-code | 16-bit diagnostic code. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 14.2.5.6.1, "Interpretation of Diagcode." |
| mkey-lease-period | Initial value of the lease-period timer in seconds. The lease period is the length of time that the M_Key protection bits are to remain non-zero after a SubnSet (PortInfo) fails an M_Key check. After the lease period expires, clearing the M_Key protection bits allows any subnet manager to read (and then set) the M_Key. Set this field to 0 to indicate that the lease period is never to expire. See *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 14.2.4, "Management Key." |
| local-port-num | Number of the link port that received this request; otherwise, the value is 0. |
| link-width-supported | Supported link width. The value is 1 (1x), 3 (1x or 4x), or 11 (1x, 4x, or 12x). |

*Table 3-84 sma port-info details Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| link-width-enabled | Enabled link width (speed). The value is an integer that indicates the enabled link-width sets for this port. The value can be<br>• 0 (no state change)<br>• 1 (1x)<br>• 2 (4x)<br>• 3 (1x or 4x)<br>• 8 (12x)<br>• 9 (1x or 12x)<br>• 10 (4x or 12x)<br>• 11 (1x, 4x or 12x)<br>• 255 (set this parameter to the link-width-supported value) |
| link-width-active | Active link width. This parameter is used with LinkSpeedActive to determine the link rate between the two connected nodes. The value is width1x, width4x, or width12x. |
| link-speed-supported | Speed that the link between the host and your device supports. |
| link-speed-enabled | Maximum speed the link is capable of handling. The value is 0 (No state change), 1 (2.5 Gbps), or 3 (value derived from link-speed-supported). |
| link-speed-active | Speed of an active link. The value is 1 (2.5 Gbps). |
| state | A higher form of addressing than PhyState, state determines that the nodes can actually communicate and indicates the state transition that has occurred. A transition is a port change from down to “initialize,” “initialize” to “down,” “armed” to “down,” or active to down as a result of link state machine logic. Changes to the port state resulting from SubnSet have no affect on this parameter value. The value is noStateChange, down, initialize, armed, or active. |
| port-phys | Indicates the actual state of the port. Determines that electricity flows between nodes so they can hand-shake. The value is noStateChange, sleeping, polling, disabled, portConfigurationTraining, linkup, or linkErrorRecovery. |
| link-down-def | Default LinkDown state to return to. The value is noStateChange, sleeping, or polling. See section 5.5.2, Status Outputs (MAD GET), *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| mkey-protect-bits | Management key protection bits for the port. The bits are 0, 1, 2, and 3. See section 14.2.4.1, “Levels of Protection,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| lmc | Local-identifier mask control (LMC) for multipath support. A LMC is assigned to each channel adapter and router port on the subnet. It provides multiple virtual ports within a single physical port. The value of the LMC specifies the number of path bits in the LID. A value of 0 (zero) indicates one LID is allowed on this port. See sections 3.5.10, Addressing, and 4.1.3, “Local Identifiers,” in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| neighbor-mtu | Active maximum transmission unit enabled on this port for transmit. Check the mtu-cap value at both ends of every link and use the lesser speed. The value is mtu256, mtu512, mtu1024, mtu2048, or mtu4096. |

*Table 3-84 sma port-info details Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| master-sm-sl | Administrative service level required for this port to send a non-SMP message to the subnet manager. |
| vl-cap | Maximum range of data virtual lanes supported by this port. The value is vl0, vl0ToVl1, vl0ToVl3, vl0ToVl7, or vl0ToVl14. See also oper-VL. |
| vl-high-limit | Maximum high-priority limit on the number of bytes allowed for transmitting high-priority packets when both ends of a link operate with multiple data virtual-lanes. Used with the virtual-lane arbitration table. The maximum high-limit is determined by checking the vl-arb-high-cap on the other side of the link and then negotiating downward. |
| vl-arbitration-high-cap | Highest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. See section 14.2.5.9, "VL Arbitration Table," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| vl-arbitration-low-cap | Lowest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. See section 14.2.5.9, "VL Arbitration Table," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for more information. |
| mtu-cap | Used in conjunction with neighbor-mtu to determine the maximum transmission size supported on this port. The lesser of mtu-cap and neighbor-mtu determines the actual MTU used. The value is 256, 512, 1024, 2048, or 4096. |
| vl-stall-count | Number of sequentially dropped packets at which the port enters a VLStalled state. The virtual lane exits the VLStalled state (8 * HLL) units after entering it. See section 18.2.5.4, "Transmitter Queuing," in *InfiniBand Architecture®, Vol. 1, Release 1.1*, for a description of HLL. |
| hoq-life | Maximum duration allowed to packets at the head of a virtual-lane queue. Used with VL-stall-count to determine the outgoing packets to discard. |
| op-vls | Administrative limit for the number of virtual lanes allowed to the link. Do not set this above the VL-cap value. The value is vl0, vl0-Vl1, vl0-Vl3, vl0-Vl7, or vl0-Vl14. |
| pkey-enf-in | Boolean value that indicated whether or not to support optional partition enforcement for the packets that were received by this port. |
| pkey-enf-out | Boolean value that indicates whether or not to support optional partition enforcement for the packets transmitted by this port. |
| filter-raw-pkt-in | Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets that were received by this port. |
| filter-raw-pkt-out | Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets transmitted by this port. |
| mkey-violations | Number of subnet management packets (SMPs) that have been received on this port with invalid M_Keys since initial power-up or last reset. For more information see section 14.2.4, "Management Key," in *InfiniBand Architecture®, Vol. 1, Release 1.1.* |

*Table 3-84 sma port-info details Keyword Output Field Descriptions (continued)*

| **Field** | **Description** |
|---|---|
| pkey-violations | Number of subnet management packets that have been received on this port with invalid P_Keys since initial power-up or the last reset. For more information, see section 9.2.7, "Partition Key," in *InfiniBand Architecture®, Vol. 1, Release 1.1*. |
| qkey-violations | Number of subnet management packets that have been received on this port with invalid Q_Keys since initial power up or the last reset. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 10.2.4, "Q Keys." |
| guid-cap | Number of GUID entries allowed for this port in the port table. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 14.2.5.5, "GUIDCap." |
| subnet-timeout | Maximum propagation delay allowed for this port to reach any other port in the subnet. This value also affects the maximum rate at which traps can be sent from this port. |
| resp-timeout | Maximum time allowed between the port reception of a subnet management packet and the transmission of the associated response. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 13.4.6.2, "Timers and Timeouts." |
| local-phys-err | Threshold at which ICRC, VCRC, FCCRC, and all physical errors result in an entry into the BAD PACKET or BAD PACKET DISCARD states of the local packet receiver. For more information, see *InfiniBand Architecture®, Vol. 1, Release 1.1*, section 7.12.2, "Error Recovery Procedures." |
| overrun-err | Threshold at which buffer count overruns across consecutive flow-control update periods and results in an overrun error. |

Table 3-85 describes the fields that appear when you use the **statistics** keyword with the **show interface ib** command.

*Table 3-85 statistics Keyword Output Field Descriptions*

| **Field** | **Description** |
|---|---|
| port | Port identifier, in slot#/port# format. |
| name | Administrative port name that you configured with the **name** command. |
| in-octets | Cumulative number of octets that arrived at the port, including framing characters. |
| in-ucast-pkts | Cumulative number of incoming packets destined for a single port. |
| in-multicast-pkts | Cumulative number of incoming packets destined for the ports of a multicast group. |
| in-broadcast-pkts | Cumulative number of incoming packets destined for all ports on the fabric. |
| in-discards | Cumulative number of inbound packets that the port discarded for a reason other than a packet error (for example, lack of buffer space). |
| in-errors | Number of inbound packets with errors that the port discarded. |

*Table 3-85 statistics Keyword Output Field Descriptions (continued)*

| Field | Description |
|---|---|
| in-unknown-protos | For packet-oriented interfaces, the number of packets that were received through the interface that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received through the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is always 0. |
| out-octets | Total number of octets transmitted out of the interface, including framing characters. |
| out-ucast-pkts | Total number of packets that higher-level protocols requested be transmitted and that were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-multicast-pkts | Total number of packets that higher-level protocols requested be transmitted and that were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. |
| out-broadcast-pkts | Total number of packets that higher-level protocols requested to be transmitted and that were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent. |
| out-discards | Number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free-up buffer space. |
| out-errors | For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors. |

## Examples

The following example shows the output of the **show interface ib** command without the **sma** or **statistics** keywords:

```
SFS-7000D> show interface ib 2


================================================================================
                        InfiniBand Interface Information
================================================================================
                     port : 2
                     name : 2
                     type : ib4xTXPD
                     desc : 2 (66)
              last-change : Wed Sep  6 13:40:08 2006
                      mtu : 2048
 auto-negotiate-supported : yes
           auto-negotiate : enabled
             admin-status : up
              oper-status : up
              admin-speed : 4x-ddr(20gbps)
               oper-speed : 4x-ddr(20gbps)
                link-trap : enabled
                phy-state : link-up
              dongle-type : none
             dongle-state : no-state-change
```

The following example shows the output of the **show interface ib** command with the **statistics** keyword:

```
SFS-270# show interface ib 4/7 statistics

                        InfiniBand Interface Statistics
================================================================================

                          port : 4/7
                          name : 4/7
                     in-octets : 0
                 in-ucast-pkts : 0
             in-multicast-pkts : 0
             in-broadcast-pkts : 0
                   in-discards : 0
                     in-errors : 0
             in-unknown-protos : 0
                    out-octets : 0
                out-ucast-pkts : 0
            out-multicast-pkts : 0
            out-broadcast-pkts : 0
                  out-discards : 0
                    out-errors : 0
```

## Related Commands

**ib-agent**
**name**

# show interface mgmt-ethernet

To show the configuration of the Ethernet Management port on the controller card of your server switch, enter the **show interface mgmt-ethernet** command in user EXEC mode or privileged EXEC mode.

**show interface mgmt-ethernet**

## Syntax Description

This command has no arguments or keywords.

## Defaults

The gateway address value defaults to 0.0.0.0.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

The Ethernet Management port is an Out-of-Band Management (OBM) port that provides network access to the system chassis in order to run remote CLI and Element Manager sessions. The port must be configured before it can be used.

This command displays the administrative status of the interface port, its assigned IP address and subnet mask, plus the IP address of the gateway port used to connect to the Ethernet Management port. If the Ethernet host is directly connected to the Ethernet Management port, without having to go through Ethernet switches, the default gateway-addr value is 0.0.0.0.

On the Cisco SFS 3012R, you can access the Ethernet Management port on the currently active controller card only. The CLI always defaults to port 2 on the active controller card.

Table 3-86 describes the fields that appear in the **show interface mgmt-ethernet** command output.

*Table 3-86 show interface mgmt-ethernet Command Output Fields*

| Field | Description |
|---|---|
| port | Ethernet management port number, in slot#/port# format. |
| mac-address | MAC address of the Ethernet management port. |
| auto-negotiate | Displays enabled if the port automatically negotiates link speed. |
| admin-status | Displays up if you enabled the port and down if you disabled the port. |
| ip-addr | IP address of the port. |
| mask | Subnet mask of the port. |

*Table 3-86 show interface mgmt-ethernet Command Output Fields (continued)*

| Field | Description |
|---|---|
| gateway-addr | Gateway configured for the port. |
| addr-option | Address option of the port (see the command: addr-option, page 3-8). |

## Examples

The following example displays the configuration of the Ethernet Management port on the active controller:

```
SFS-7000D> show interface mgmt-ethernet


================================================================================
                           Mgmt-Ethernet Information
================================================================================
              mac-address : 00:05:ad:00:1e:1c
           auto-negotiate : enabled
             admin-status : up
              oper-status : up
                  ip-addr : 172.29.230.60
                     mask : 255.255.0.0
             gateway-addr : 172.29.230.1
              addr-option : static


SFS-7000D>
```

## Related Commands

**gateway**
**ip address (Ethernet management interface configuration submode)**

# show interface mgmt-ib

To display the status and address information for the virtual InfiniBand Management port, enter the **show interface mgmt-ib** command in user EXEC mode or privileged EXEC mode.

**show interface mgmt-ib**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use this command to verify that you have configured your InfiniBand Management port successfully. Compare this output to the configuration file and check for discrepancies. You must configure the InfiniBand Management port successfully to run Telnet, SSH, and Element Manager.

## Examples

The following example displays the status and address information of the InfiniBand Management port:

```
SFS-3012R# SFS-3012R> show interface mgmt-ib


================================================================================
                          Mgmt-InfiniBand Information
================================================================================
                    descr : Inband Management Port
             admin-status : down
                  ip-addr : 10.10.10.4
                     mask : 255.255.255.0
             gateway-addr : 0.0.0.0
                      mtu : 2044
                     pkey : 80:80
```

## Related Commands

**gateway**
**telnet**
**ip address (InfiniBand management interface configuration submode)**
**pkey**

# show interface mgmt-serial

This command displays the default configuration. This configuration cannot be changed. To display the configuration of the Serial Console port on the controller card of your server switch, enter the **show interface mgmt-serial** command in user EXEC mode or privileged EXEC mode.

**show interface mgmt-serial**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

The Serial Console port is the initial connection point with the system chassis and is used to configure the Ethernet Management and Infiniband Management ports. This port must be configured and a management station attached before any interaction with the system chassis is possible.

For the Cisco SFS 3012R, you can access the serial console port only on the currently active controller card.

## Examples

The following example displays the default interface management serial configuration:

```
SFS-7000P# show interface mgmt-serial
===============================================================
                         Mgmt-Serial Information
===============================================================
                baud-rate : 9600
                data-bits : 8
                stop-bits : 1
                   parity : off
SFS-7000P#
```

## Related Commands

show interface mgmt-ethernet
show interface mgmt-ib
shutdown

# show inventory

To display the inventory of your server switch and to see a description of the chassis and slots, enter the **show inventory** command in user EXEC mode or privileged EXEC mode.

**show inventory**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

General read-only user.

Table 3-87 describes the fields in the **show inventory** command output.

*Table 3-87 Show Inventory Output*

| Field | Description |
|---|---|
| Name | Name of the switch. |
| Description | Description of the chassis or slot. |
| PID | Password ID. |
| VID | Volume ID. |
| SN | Serial number. |

## Examples

The following example displays the inventory of a server switch:

```
SFS-7008P# show inventory

================================================================================
                        Inventory Information
================================================================================
NAME : "chassis-0x5ad00000019d1" , DESCR : "Cisco Topspin 270 Chassis"
PID : TOPSPIN-270 , VID : B0 , SN : USP041800095

NAME : "slot-1" , DESCR : "Cisco Topspin 270 Powered 4x LIM Card"
PID : TS270LIM4XCP , VID : B0 , SN : PY0410xxxxxx

NAME : "slot-5" , DESCR : "Cisco Topspin 270 12X LIM Card"
PID : TS270LIM12XCP , VID : B0 , SN : PY0430000002
```

```
NAME : "slot-6" , DESCR : "Cisco Topspin 270 12X LIM Card"
PID : TS270LIM12XCP , VID : B0 , SN : PY0430000014

NAME : "slot-7" , DESCR : "Cisco Topspin 270 Powered 4x LIM Card"
PID : TS270LIM4XCP , VID : B0 , SN : PY0410xxxxxx

NAME : "slot-8" , DESCR : "Cisco Topspin 270 Powered 4x LIM Card"
PID : TS270LIM4XCP , VID : B0 , SN : PY0410xxxxxx

NAME : "slot-9" , DESCR : "Cisco Topspin 270 Fabric Card"
PID : TS270FABRIC , VID : B1 , SN : USP041300011

NAME : "slot-11" , DESCR : "Cisco Topspin 270 Fabric Card"
PID : TS270FABRIC , VID : B1 , SN : USP041300010

NAME : "slot-12" , DESCR : "Cisco Topspin 270 Fabric Card"
PID : TS270FABRIC , VID : B1 , SN : USP041200010

NAME : "slot-13" , DESCR : "Cisco Topspin 270 Fabric Card"
PID : TS270FABRIC , VID : A0 , SN : USP034000008

NAME : "slot-16" , DESCR : "Cisco Topspin 270 Management I/O Card"
PID : TS270MGMTIO , VID : A5 , SN : MX3054200258

SFS-7008P#
```

## Related Commands

**show card**

# show ip

To display IP configuration data, enter the **show ip** command in user EXEC mode or privileged EXEC mode.

**show ip** [**address-table** | **route** | **http** [**server secure**]]

## Syntax Description

| | |
|---|---|
| **address-table** | (Optional) This keyword displays the address information of Ethernet interface ports, Ethernet interface cards, and InfiniBand interface cards. It lists the IP addresses, netmasks, broadcast formats, reassembly sizes, and whether or not the IP address is a primary or backup. |
| **route** | (Optional) This keyword displays the Classless Inter-Domain Routing (CIDR) forwarding records or routes (both static and dynamic) of all IP routes to system ports. Included in this information are the route destination, route type, route protocol, next hop, and port used. |
| **http** | (Optional) Displays current HTTP settings. |
| **server secure** | (Optional) Displays current secure HTTP server settings. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

Use this command to view the results of the **ip** commands.

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

### Privilege Level:

Ethernet read-only user.

## Examples

The example below shows the output of the **show ip address-table** command. Note that port 0 always indicates the gateway port of the interface card.

```
SFS-7000P# show ip address-table
===============================================================
                                IP Address Table
===============================================================
port  address         mask            bcast-addr reasm    type     status
                                      format     max-size
----------------------------------------------------------------------------
 4/0  192.168.2.1     255.255.255.0   1          0        primary  active
 4/1  192.168.1.1     255.255.255.0   1          0        primary  active
 4/2  192.168.3.1     255.255.255.0   1          0        primary  active
SFS-7000P#
```

The example below shows the local Ethernet routes for the system chassis. Local routes are automatically generated whenever you assign an IP address to a system card or port. The codes shown in the **proto** column are explained in the output header. A next-hop value of 0.0.0.0 always indicates a local route.

```
SFS-7000P# show ip route
============================================================================
                                         IP Routes
============================================================================
Protocol Codes: OT - other     L - local     NM - netmgmt    IC - icmp
E - egp     G - ggp     H - hello     R - rip     IS - ISIS    ES - ES_IS,
CI - ciscoIgrp    BS - bbnSpfIgp    O - OSPF    B - BGP    ID - IDPR

dest            mask             next-hop        port   type   proto metric
----------------------------------------------------------------------------
10.10.0.3       255.255.255.0    192.168.1.0     4/1    remote NM    0
192.168.1.0     255.255.255.0    0.0.0.0         4/1    local  L     0
192.168.2.0     255.255.255.0    0.0.0.0         4/0    local  L     0
192.168.3.0     255.255.255.0    0.0.0.0         4/2    local  L     0
SFS-7000P#
```

## Related Commands

ip address (Ethernet interface configuration submode)
ip route

# show ip http

To view the configuration of the HTTP server on your server switch, enter the **show ip http** command in user EXEC mode or privileged EXEC mode.

**show ip http**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-only user.

Use this command to determine if your HTTP server actively runs on your server switch, and to determine the HTTP port number that it uses.

Table 3-88 describes the fields for the **show ip http** command output.

*Table 3-88 show ip http Command Output Field Descriptions*

| Field | Description |
|---|---|
| server | Displays “enabled” if you have activated the server with the **ip http server** command. Displays “disabled” if you have deactivated the server with the **no ip http server** command. |
| port | Displays the HTTP port number that the HTTP server uses. |
| polling | Displays “enabled” or “disabled” to indicate polling status. |

## Examples

The following example displays the configuration of the HTTP server on the server switch:

```
SFS-7000P# show ip http
================================================================================
                                  IP HTTP Info
================================================================================
                   server : enabled
                     port : 80
                  polling : enabled
```

**Related Commands** **ip http**

# show ip http server secure

To view the HTTPS configuration on your server switch, enter the **show ip http secure server** command in user EXEC mode or privileged EXEC mode.

**show ip http server secure**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Ethernet read-only user.

Use this command to determine if HTTPS actively runs on your server switch and to determine the HTTPS port number that it uses.

Table 3-89 describes the fields for the **show ip http server secure** command output.

*Table 3-89 show ip http Command Output Field Descriptions*

| Field | Description |
|---|---|
| secure-server | Displays "enabled" if you have activated the server with the **ip http server** command. Displays "disabled" if you have deactivated the server with the **no ip http server** command. |
| secure-port | Displays the HTTP port number that the HTTP server uses. |
| secure-cert-common-name | Certificate name of the secure server. |

## Examples

The following example displays the HTTPS configuration on the server switch:

```
SFS-7000P# show ip http server secure
================================================================================
                              IP HTTP Secure Info
================================================================================
            secure-server : enabled
              secure-port : 443
  secure-cert-common-name : useMgmtEnetIpAddr
```

## Related Commands

**ip http**

# show location

To display the location data on your server switch, enter the **show location** command in user EXEC mode or privileged EXEC mode.

**show location**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

The **show location** command displays some contact information to the user; however, it can be configured to display any desired text string.

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

General read-only user.

## Examples

The following example displays the location information that you configured with the **location** command:

```
SFS-7000D# show location
170 West Tasman Drive, San Jose, CA 95134
SFS-7000D#
```

## Related Commands

**location**
**snmp-server**
**show version**

# show logging

To display the active system log file, enter the **show logging** command in user EXEC mode or privileged EXEC mode.

**show logging** [**end**]

## Syntax Description

| | |
|---|---|
| **end** | (Optional) Displays approximately the last 10 entries in the system log and then continues to display log entries as they occur. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use this command to view any of the following:

- warnings
- errors
- notifications
- alerts

You might want to set the number of lines displayed per screen using the **terminal length** command. You can also use the **more** command on ts_log instead of the **show logging** command.

The **show logging end** command is the equivalent of using the UNIX **tail -f** command. The CLI continues to display log entries as they occur until you enter **Ctrl-C**. No other CLI commands can be entered until **Ctrl-C** is used to stop the log display.

We recommend that you set the terminal page length to 0 when using the end argument. Otherwise, you need to press the space bar to continue each time the maximum display length is reached. After you set the page length, do not change the terminal window size. Changing window size restores the terminal length to that of the window and restarts paging.

The system log file on the chassis controller is /var/log/topspin.

## Examples:

The following example displays the last 10 log entries:

```
SFS-7000P# show logging end
Jan  3 11:09:58 igr-cc ib_sm.x[597]: [INFO]: Successfully add pgid
fe800000000000000005ad0000001199 to mgid ff18a01b00000000000005ad00000002
Jan  3 17:02:56 igr-cc port_mgr.x[535]: [INFO]: port down - port=16/7, type=ib4xFX
Jan  3 17:02:58 igr-cc port_mgr.x[535]: [INFO]: port up - port=16/7, type=ib4xFX
Jan  3 18:21:46 igr-cc port_mgr.x[535]: [INFO]: port down - port=16/2, type=ib4xFX
Jan  3 18:21:48 igr-cc port_mgr.x[535]: [INFO]: port up - port=16/2, type=ib4xFX
Jan  3 19:35:55 igr-cc chassis_mgr.x[523]: [CONF]: [super]: config snmp trap-receiver
10.10.253.47
Jan  3 19:35:55 igr-cc chassis_mgr.x[523]: [CONF]: [super]: config snmp trap-receiver
10.10.253.47 version v2c
Jan  3 19:35:55 igr-cc chassis_mgr.x[523]: [CONF]: [super]: config snmp trap-receiver
10.10.253.47 community public
Jan  3 19:35:55 igr-cc chassis_mgr.x[523]: [CONF]: [super]: config snmp trap-receiver
10.10.253.47 community public
```

## Related Commands

**copy**
**logging**
**show fan**
**telnet**
**terminal**

# show ntp

To display

- the current date and time of your server switch,
- the Network Time Protocol (NTP) servers that your server switch uses to set the system clock,

enter the **show ntp** command in user EXEC mode or privileged EXEC mode.

**show ntp**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use the **clock set** command to set the time and date. Use the **ntp** command to set the NTP servers that are to maintain the system clock.

## Examples

The following example displays the current date and time, as well as NTP server details:

```
SFS-7000P>  show ntp
================================================================
                    NTP Information
================================================================
                     Date : 04/16/03
                     Time : 16:02:43
               Server One : 10.3.120.55
               Server Two : 10.3.120.56
             Server Three : 10.3.120.57
SFS-7000P>
```

## Related Commands

**ntp**
**clock set**

# show power-supply

To display the status of the power supplies on your server switch, enter the **show power-supply** command in user EXEC mode or privileged EXEC mode.

**show power-supply**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

General read-only user.

Use this command to monitor the power supply. This command primarily serves to help management tools continuously monitor power supply status. Errors in the ts_log file might prompt you to check power supply status. Table 3-90 describes the power-supply fields.

*Table 3-90 show power-supply Command Field Descriptions*

| Field | Description |
|---|---|
| type | Indicates AC power. |
| oper-status | Displays “up” or “down” to indicate the status of the power supply. |
| utilization | Displays percentage of power utilization when multiple power supplies provide power. Displays “n/a” when one power supply runs. |
| voltage | Voltage of the power supply. |
| product serial-number | Factory-assigned product serial number. |
| pca serial-number | Printed circuit assembly (PCA) serial number. |
| pca number | Printed Circuit Assembly (PCA) assembly number. |
| fru number | Field replaceable unit (FRU) number for the actual switch (select chassis) or chassis (select chassis). |

## Examples

The following example displays power supply details:

```
SFS-7000D> show power-supply


================================================================================
                           Power-supply Information
================================================================================
ps     type     admin-status  oper-status   utilization    voltage
--------------------------------------------------------------------------------
1      AC       up            up            23             12


================================================================================
                             Power-supply Seeprom
================================================================================
      product            pca                pca                fru
ps    serial-number      serial-number      number             number
--------------------------------------------------------------------------------

1     ZDHZ0858           -                  -                  98-00109-01


SFS-7000D>
```

## Related Commands

**show backplane**
**show fan**
**show sensor**

# show redundancy-group

To display redundancy group information, enter the **show redundancy-group** command in user EXEC mode or privileged EXEC mode.

**show redundancy-group** [*rlb-id*]

**Syntax Description**

| | |
|---|---|
| *rlb-id* | (Optional) Number of the redundancy group that you want to view. |

**Defaults**

This command displays all redundancy groups by default.

**Command Modes**

User EXEC mode, privileged EXEC mode.

**Usage Guidelines**

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-only user.

Use this command to view redundancy groups and attributes of redundancy groups.

Table 3-91 describes the fields for the **show redundancy-group** command output.

*Table 3-91 show redundancy-group Command Field Descriptions*

| Field | Description |
|---|---|
| rlb-id | Redundancy group ID. |
| name | Redundancy group name. |
| group-p_key | Partition key of the group. |
| load-balancing | Displays "enabled" if load balancing runs; otherwise, it displays disabled. |
| broadcast-forwarding | Displays true if broadcast forwarding is enabled; otherwise, it displays false. |
| directed-broadcast | Displays true if directed broadcasting is enabled. Otherwise, displays false. |
| multicast | Displays true if multicast forwarding is enabled; otherwise, it displays false. |
| gratuitous-igmp | Displays true if gratuitous IGMP is enabled; otherwise, it displays false. |
| igmp-version | Version of IGMP configured for this group. Values are v1, v2, and v3. |
| num-members | Number of members in the redundancy group. |
| new-member-force-reelection | Displays true if the group is configured to reelect a new primary when a new member joins; otherwise, it displays false. |

## Examples

The following example displays the redundancy groups on the chassis:

```
SFS-3012R# show redundancy-group


================================================================================
                               Redundancy Groups
================================================================================
                        rlb-id : 1
                          name :
                   group-p_key : ff:ff
                load-balancing : disabled
          broadcast-forwarding : false
           directed-broadcast : false
                     multicast : false
               gratuitous-igmp : false
                  igmp-version : v2
                   num-members : 1
   new-member-force-reelection : false



================================================================================
                            Redundancy Group Members
================================================================================
bridge-group src-addr        last-receive
--------------------------------------------------------------------------------
1            192.168.1.10    Thu Jan  1 00:19:11 1970

                        rlb-id : 2
                          name :
                   group-p_key : 00:02
                load-balancing : disabled
          broadcast-forwarding : false
           directed-broadcast : false
                     multicast : false
               gratuitous-igmp : false
                  igmp-version : v2
                   num-members : 1
   new-member-force-reelection : false
```

## Related Commands

**redundancy-group**
**redundancy-group broadcast-forwarding**
**redundancy-group directed-broadcast**
**redundancy-group gratuitous-igmp**
**redundancy-group igmp**
**redundancy-group load-balancing**
**redundancy-group multicast**
**redundancy-group name**
**redundancy-group new-member-force-reelection**

# show running-status

To execute a thorough range of show commands for a particular technology, enter the **show running-status** command in user EXEC mode or privileged EXEC mode.

**show running-status** {**all** | **ethernet** | **fc** | **ib**} [**to-file**]

## Syntax Description

| | |
|---|---|
| **all** | Runs show commands for Ethernet, Fibre Channel, and InfiniBand technologies. |
| **ethernet** | Runs show commands for Ethernet only. |
| **fc** | Runs show commands for Fibre Channel only. |
| **ib** | Runs show command for InfiniBand only. |
| **to-file** | (Optional) Saves the output of the show commands to a file in the syslog directory on your server switch and displays the name of the file. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

This command can generate a large amount of data. Data is displayed per **terminal length** command settings. When entered, this command first prompts you to verify your desire to generate the data. Enter **y** to continue or **n** to cancel.

The default output file is **syslog:igr_***interface***_runningstatus**, where *interface* is one of fc, ib, or all. If the file already exists, it will be overwritten. This text file can be uploaded to another system using the **copy** command or viewed using the **more** command.

## Examples

The following example runs all Ethernet show commands:

```
SFS-7000P> show running-status ethernet
Are you sure you want to continue? [yes/no] y
Gathering system-wide information, please wait.....
SFS-7000P> show arp ethernet
===============================================================
                               ARP Information
===============================================================
port    physical-address       net-address         type
---------------------------------------------------------------
```

```
SFS-7000P> show arp ib

================================================================
                                ARP Information
================================================================
port physical-address                                     net-address   type
-----------------------------------------------------------------------------

SFS-7000P> show backplane
================================================================
                               Backplane Seeprom
================================================================
base-mac-addr        chassis-id
----------------------------------------------------------------
1a:0:a:3a:0:a        0x600000000
…
…
```

## Related Commands

See most of the other **show** commands.

**show interface ethernet**
**show interface fc**

# show sensor

To display the temperature at several key locations in your server switch, enter the **show sensor** command in user EXEC mode or privileged EXEC mode.

**show sensor**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

General read-only user.

The **show sensor** command identifies the temperature sensors in the system chassis. It also reports their location in the chassis and the current temperature at that location. Chassis temperature should be monitored to verify the cooling efficiency of the blowers and your data center air-conditioning.

Temperatures are in degrees Celsius and vary depending upon their location.

Normal temperature levels for the Cisco SFS 3001 remain 10 to 20 degrees Celsius above the ambient temperature.

75° C would be an alarm temperature and the system will reset itself at 85° C.

Table 3-72 describes the output of the **show sensor** command.

*Table 3-92 show sensor Command Field Descriptions*

| Field | Descriptions |
|---|---|
| sensor | Number of the temperature sensor. |
| oper-status | Operational status of the sensor (“up” or “down”). |
| oper-code (select server switches) | Operational code of the sensor. |
| temperature | Temperature that the sensor reads, in degrees Celsius. |
| alarm-temp (select server switches) | Temperature at which the sensor sounds an alarm. |
| shutdown-temp (select server switches) | Temperature at which the sensor shuts down the server switch. |

## Examples

The following example displays the temperature sensor information on the server switch:

```
SFS-7000D> show sensor


================================================================================
                                Sensor Information
================================================================================
sensor oper-status oper-code  temperature(c)  alarm-temp(c)   shutdown-temp(c)
--------------------------------------------------------------------------------
1/1    up          normal     36              65              73
SFS-7000D#
```

## Related Commands

**show fan**
**show power-supply**

# show snmp

To display the SNMP receivers for link traps on your server switch, enter the **show snmp** command in user EXEC mode or privileged EXEC mode.

**show snmp** [**user** {**all** | *user-name*}]

## Syntax Description

| | |
|---|---|
| **user** | (Optional) Displays SNMP information for all users or for one particular user if you specify that user with the *user-name* variable. |
| *user-name* | (Optional) User with the SNMP information that you want to display. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Use this command to verify the SNMP servers that you configure with the **snmp-server** command.

## Examples

The following example displays the SNMP trap receivers configured on the server switch:

```
SFS-7000D> show snmp


================================================================================
                                SNMP Information
================================================================================
                       contact : tac@cisco.com
                      location : 170 West Tasman Drive, San Jose, CA 95134
   enable-traps-authentication : disabled


================================================================================
                                 Trap Receivers
================================================================================
ipaddr            version     community        recv-events
--------------------------------------------------------------------------------
10.76.138.180     v2c         public           false
SFS-7000D>
```

The following example displays the SNMP trap receivers for all users:

```
SFS-7000D> show snmp user all


================================================================================
                            SNMPv3 User Information
================================================================================
                engine-id : 80:00:18:3b:05:05:00:30:30:30:30:30:31:65:31:63


                 username : admin
                auth-type : sha
            auth-password : 5A9199CE77AA0344220CF986997E737437D991CA
                priv-type : des56
            priv-password : 5A9199CE77AA0344220CF986997E7374
         permission-level : ib-rw, ip-ethernet-rw, fc-rw
                   enable : disabled


                 username : guest
                auth-type : none
                priv-type : none
         permission-level : ib-ro, ip-ethernet-ro, fc-ro
                   enable : disabled


                 username : super
                auth-type : md5
            auth-password : 69AE8902000CEA306EF9DE6BCF4182A4
                priv-type : des56
            priv-password : 69AE8902000CEA306EF9DE6BCF4182A4
         permission-level : unrestricted-rw
                   enable : disabled
SFS-7000D>
```

## Related Commands

**link-trap**
**location**
**logging**
**snmp-server**

# show system

To display the system global settings, enter the **show system** command in user EXEC mode or privileged EXEC mode.

**show system**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

Use this command to verify that the SRP configuration is locked or unlocked.

## Examples

The following example indicates that the ib counter reset is enabled:

```
SFS-7000P# show system
================================================================================
                             System Global Settings
================================================================================
  enable ib counter reset : enabled
```

## Related Commands

system-mode

# show system-mode

Use this command to verify that the SRP configuration is locked or unlocked. To display the system mode (normal or VFrame), enter the show system-mode command in user EXEC mode or privileged EXEC mode.

**show system-mode**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user.

## Examples

The following example indicates that the server switch is in its default unlocked mode:

```
SFS-7000P# show system-mode

================================================================================
                             System Operation Mode
================================================================================
                oper-mode: normal
```

## Related Commands

system-mode

# show system-services

Use this command to discover which system services (for example, Telnet, ftp, and syslog) run on your server switch. You can configure any or all of these services to manage your server switch. To display system services such as FTP and Telnet, enter the **show system-services** command in user EXEC mode or privileged EXEC mode.

**show system-services**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D

**Privilege Level:**

Unrestricted read-write user.

## Examples

The following example displays the system services that run on the server switch:

```
SFS-7000P# show system-services
================================================================================
                              System Services
================================================================================
             ftp service : disabled
          telnet service : enabled
       syslog-server-one : 0.0.0.0
       syslog-server-two : 0.0.0.0
================================================================================
                               NTP Information
================================================================================
                    date : 03/29/06
                    time : 17:01:35
              server-one : 0.0.0.0
              server-two : 0.0.0.0
Press any key to continue (Q to quit)
```

## Related Commands

**ftp-server enable**
**history**
**radius-server**
**snmp-server**
**ntp**

**hostname**
**telnet**
**terminal**
**tacacs-server**

# show terminal

To display terminal parameters, enter the **show terminal** command in user EXEC mode or privileged EXEC mode.

**show terminal**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use this command to view information about your CLI session. The command provides useful information such as timeout parameters, output-screen length, and history-buffer size.

## Examples

The following example displays information about this CLI session.

```
SFS-7000P# show terminal
Console is enabled
Connection host address is 10.10.253.128
Length: 25 lines, Width: 80 columns
Timeouts: enabled, Value: 15 minutes
Session limit is set to 3
History is enabled, history size is 30
Maximum command length is 512 characters
Maximum login attempts is 5
```

## Related Commands

**telnet**
**terminal**

# show trace

To display the system program modules that your server switch calls, enter the **show trace** command in user EXEC mode or privileged EXEC mode.

**show trace app** *application-number* [**module** *module-number*] [**card** *card-number*]

## Syntax Description

| | |
|---|---|
| **app** | Specifies the application to trace. |
| *application-number* | Number of the application to trace. Use the online help (?) to view a list of applications and application numbers. |
| **module** | (Optional) Specifies the module to trace. |
| *module-number* | (Optional) Number of the module to trace. Use the online help (?) to view a list of modules and module numbers. |
| **card** | (Optional) Specifies the card to trace. |
| *card-number* | (Optional) Number of the card to trace. Use the online help (?) to view a list of cards and card numbers. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Use this command for program debugging.

## Examples

The following example traces application 9, module 1, card 2:

```
SFS-7000P> show trace app 9 mod 1 card 2
AMF                 1    0x0         0x0
```

## Related Commands

show logging
trace

# show trunk

To display the configuration of trunk groups, enter the **show trunk** command in user EXEC mode or privileged EXEC mode.

**show trunk** [*trunk id*]

## Syntax Description

| | |
|---|---|
| *trunk id* | (Optional) ID of the trunk group. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user.

Use this command to view the trunk groups that you have configured on your server switch. You can verify trunk-group related changes that you have made to the configuration file with the **show trunk** command.

## Examples

The following example displays the trunk groups on the server switch:

```
SFS-7000P# show trunk

================================================================================
                                 Trunks Groups
================================================================================

           trunk-group-id : 1
         trunk-group-name :
        distribution-type : src-dst-mac
             port-members :
                   enable : false
                      mtu : 0
                 mac-addr : 00:00:00:00:00:00
                  ifindex : 45057
```

## Related Commands

dir
trunk-group

# show user

To display user information for yourself or one or more users on the server switch, enter the **show user** command in user EXEC mode or privileged EXEC mode. No TACACS+ user information is stored locally, so the command **show user all** shows only local users.

**show user** [*user* | **all**]

## Syntax Description

| | |
|---|---|
| user | (Optional) User to display. |
| **all** | (Optional) Displays all users in the user database. |

## Defaults

The **show user** command without arguments displays the account information for the user who executes the command.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only and unrestricted read-write user.

Enter the **show user** command with no arguments to display your current user information. The command lists username, access level, status, and login statistics. All users can view their own user information, however, only an unrestricted read-write user can view the user information of others. The **show user** command tracks statistics that start from the last time the server switch booted.

Table 3-93 describes the fields in the **show user** command output.

*Table 3-93 show user Command Field Descriptions*

| Field | Description |
|---|---|
| username | Login name of the user. |
| password | Encrypted user password. |
| snmp-community | The SNMP community string that the user needs to run SNMP commands and the Element Manager GUI. |
| permission-level | Permission restrictions that define the commands in the CLI that the user can access. |
| admin-status | Displays enabled if the user account can log in and execute commands. Displays disabled if an unrestricted user has suspended the account so no one can use it. Enable or disable an account with the **username** command. |

*Table 3-93 show user Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| num-logins | Number of times the login logged in since the server switch booted. |
| num-unsuccessful-logins | Number of times the login failed to log in successfully since the server switch booted. |
| last-login | Most recent login with the username. |
| last-unsuccessful-login | Most recent failed login with the username. |

## Examples

The following example displays the admin user:

```
SFS-7000P> show user admin
===============================================================
                    User Information
===============================================================
                 username : admin
                 password : $1$IJ5..U6.$lSxb8uqVuUG7kOmiRsxHt1
           snmp-community : private
         permission-level : ib-rw, ip-ethernet-rw, fc-rw
             admin-status : enabled
               num-logins : 1
  num-unsuccessful-logins : 0
               last-login : Thu Apr 10 22:06:48 2003
  last-unsuccessful-login :
SFS-7000P>
```

The following example shows the login information of the current user:

```
SFS-7000P> show user
===============================================================
                       User Information
===============================================================
                 username : super
                 password : $1$IJ5..U6.$ES3pIhx/ccUaCKgM65vp6.
           snmp-community : secret
         permission-level : unrestricted-rw
             admin-status : enabled
               num-logins : 4
  num-unsuccessful-logins : 0
               last-login : Thu Apr 10 22:06:59 2003
  last-unsuccessful-login :
SFS-7000P>
```

## Related Commands

username

# show version

This command provides the software version, contact information, system up-time, time of last configuration change, and the last action performed on the server switch. To display a general, high-level description of your server switch, enter the **show version** command in user EXEC mode or privileged EXEC mode.

**show version**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

Table 3-94 describes the fields in the command output.

*Table 3-94 Show Version Command Field Descriptions*

| Field | Description |
|---|---|
| system-version | Operating system software version that the server switch runs. |
| contact | Displays the contact information that you configure with the **snmp-server** command. See the "snmp-server" section on page 3-374. |
| name | Displays the device name that you configure with the hostname command. See the "hostname" section on page 3-97. |
| location | Displays the location information that you configure with the **snmp-server** command. See the "snmp-server" section on page 3-374. |
| up-time | Amount of time since last boot. |
| last-change | Date and time of last configuration change. |
| last-config-save | Date and time that an administrator last saved the running configuration. |
| action | Executed action. See the "action" section on page 3-7. |
| result | Result of executed action. |

*Table 3-94 Show Version Command Field Descriptions (continued)*

| Field | Description |
|---|---|
| oper-mode | System mode of the server switch. See the "system-mode" section on page 3-384. |
| sys-sync-state (select chassis only) | Displays the synchronization state between the primary controller card and the hot standby controller card. |

## Examples

The following example displays the system version:

```
SFS-7000D> show version


================================================================================
                           System Version Information
================================================================================
           system-version : SFS-7000D TopspinOS 2.9.0-ALPHA saradha #15 09/17/20
06 07:27:48
                  contact : tac@cisco.com
                     name : SFS-7000D
                 location : 170 West Tasman Drive, San Jose, CA 95134
                 rack-uid : 0x0
                  up-time : 0(d):3(h):58(m):8(s)
              last-change : none
         last-config-save : none
                   action : none
                   result : none
                oper-mode : normal
SFS-7000D>
```

## Related Commands

**hostname**
**location**
**snmp-server**
**show boot-config**

# shutdown

Use the **shutdown** command to disable any of the following:

- A specific interface card or port
- An Ethernet Management port
- An InfiniBand Management port
- A power supply

Enter the **shutdown** command in the appropriate configuration submode. To enable any of these elements, use the **no** form of this command.

**shutdown**

**no shutdown**

### Syntax Description

This command has no arguments or keywords.

### Defaults

This command has no default settings.

### Command Modes

Card configuration (config-card) submode, Ethernet management interface configuration (config-if-mgmt-ethernet) submode, InfiniBand management interface configuration (config-if-mgmt-ib) submode, Ethernet interface configuration (config-if-ether) submode, InfiniBand interface configuration (config-if-ib) submode, Fibre Channel interface configuration (config-if-fc) submode.

### Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted or card-specific read-write user.

**Enabling/Disabling a card:**

Before you use the **action** command on a card, you must enable (bring up) the card. To enable or disable a card, follow these steps:

**Step 1** In user EXEC mode, enter the **enable** command to enter privileged EXEC mode.

**Step 2** Enter the **configure terminal** command to enter global configuration mode.

**Step 3** Enter the **card** command, and specify the card or cards that you want to enable.

**Step 4** Enter the **shutdown** command or the **no shutdown** command to disable or enable the cards that you specified in the previous step.

---

When you use the **shutdown** command to disable a card, the card stops processing packets and powers down.

**Enabling/Disabling an interface port:**

To enable or disable a port, follow these steps:

---

**Step 1** In user EXEC mode, enter the **enable** command to enter privileged EXEC mode.

**Step 2** Enter the **configure terminal** command to enter global configuration mode.

**Step 3** Enter the **interface** command and appropriate keyword (**ethernet**, **fc**, or **ib**), and then specify the port or ports that you want to enable.

**Step 4** Enter the **shutdown** command or the **no shutdown** command to disable or enable the cards that you specified in Step 3.

---

## Examples

The following example enables interface card 12:

```
SFS-3012R(config-card-12)# no shutdown
```

The following example enables the interface Management Ethernet port:

```
SFS-3012R(config-if-mgmt-ethernet)# no shutdown
```

The following example enables the interface Management IB port:

```
SFS-3012R(config-if-mgmt-ib)# no shutdown
```

The following example sets the admin-status field for ports 1 through 6 on InfiniBand card 15 to **up**:

```
SFS-3012R(config-if-ib-15/1-15/6)# no shutdown
```

## Related Commands

**action**
**auto-negotiate (Ethernet interface configuration submode)**
**card**
**gateway**
**link-trap**
**show card**
**show interface mgmt-serial**
**type**

# snmp-server

To store contact and location information and to configure the SNMP notification host and SNMPv3 user, enter the **snmp-server** command in global configuration mode. To replace these values with empty strings, enter the **no** form of this command.

**snmp-server** {**contact** "*contact-string*" | **engineID local** *engine-string* | **host** *dest* [*community-string*] [**recv-event-traps**] | **location** "*location-string*" | **enable traps authentication**}

**snmp-server user** *username* {**disable** | **enable** | **privilege** *privileges* | **v3** [**encrypted**] **auth** {**md5** | **sha**} *password* [**priv des56** *privacy*]}

**no snmp-server** {**contact** | **host** *ip-address* [**recv-event-traps**] | **location** | **user** ***username*** **v3** | **enable traps authentication**}

### Syntax Description

| | |
|---|---|
| **contact** | Stores the contact information for your server switch. This contact information appears in the **show version** command output. |
| **host** | Configures your server switch to communicate with the host that receives SNMP traps from your server switch. |
| **engineID** | Configures a SNMPv3 engine ID. |
| **local** | Configures the engine ID of the local agent. |
| *engine-string* | Engine ID, as a 15-octet string. |
| **location** | Stores location information about your server switch. This contact information appears in the **show version** command output. |
| *contact-string* | ASCII text string of contact information. |
| *dest* | IP address or DNS name of an SNMP server. |
| *community-string* | (Optional) SNMP community string that authenticates your server switch to the SNMP server. |
| **recv-event-traps** | (Optional) Configures the server switch to send SNMP traps to the receiver. If you configure this keyword, the remote host receives SNMP events as well as traps. |
| *location-string* | ASCII text string of location information. |
| **user** | Specifies the user ID that you want to configure. |
| *username* | User ID that you want to configure. |
| **disable** | Disables the SNMP user. |
| **enable** | Enables the SNMP user. |
| **privilege** | Assigns privileges to the user. |
| **enable traps authentication** | Generates a trap each time a user is blocked from accessing the system. |

| | |
|---|---|
| *privileges* | Privileges to apply to the user. The privileges may be any combination of the following:<br>• ib-ro<br>• ib-rw<br>• ip-ethernet-ro<br>• ip-ethernet-rw<br>• fc-ro<br>• fc-rw<br>• unrestricted-rw<br>You must enter whichever privileges you include in the order in which they appear above. |
| **v3** | Configures a user with the SNMPv3 security model. |
| **encrypted** | (Optional) Specifies passwords as digests |
| **auth** | Configures authentication parameters for the user. |
| **md5** | Specifies md5 authentication. |
| **sha** | Specifies sha authentication. |
| *password* | Authentication password to assign to the user. |
| **priv** | (Optional) Configures privacy for the user and assigns a privacy password. |
| **des56** | (Optional) Configures the privacy type. |
| *privacy* | (Optional) Privacy password. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

### Platform Availability:

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

### Privilege Level:

Unrestricted read-write user.

The snmp-server contact string appears when you view system version or SNMP information.

The snmp-server host string appears in the **show snmp** command output.

The **host** keyword configures the IP address of the host that you want to receive traps.

**Note** The SNMPv3 configuration is not saved along with other settings in the startup-config file.

## Examples

The following example stores contact information on your server switch and assigns a SNMP server to your server switch:

```
SFS-7000P(config)# snmp-server contact "support@cisco.com"
SFS-7000P(config)# snmp-server host 10.3.106.99 secret
```

The following example inputs user “dog” with the SNMPv3 security model, assigns md5 authentication, a password of “cat,” and assigns des56 privacy with a password of “fish” in the configuration:

```
SFS-270(config)# snmp-server user dog v3 auth md5 cat priv des56 fish
```

## Related Commands

**gateway**
**radius-server**
**ntp**
**location**
**logging**

# source-wwpn

To configure an optional WWPN identifier for a Fibre Channel interface Echo test, enter the source-wwpn command in Fibre Channel interface diagnostic configuration submode.

**source-wwpn** *wwpn*

**no source-wwpn** *wwpn*

## Syntax Description

| | |
|---|---|
| *wwpn* | Optional 64-bit source identifier to use with the Fibre Channel interface Echo test. |

## Defaults

This command has no default settings.

## Command Modes

Interface diagnostic configuration submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

## Examples

The following example sets the source wwpn:

```
SFS-3012R(config-diag-if-fc-4/1)# source-wwpn 20:01:00:05:ad:00:40:00
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface ib**
**show interface gateway**
**start**
**stop**
**test**

# speed (Ethernet interface configuration submode)

To assign an Ethernet connection speed to a port or ports, enter the **speed** command in Ethernet interface configuration submode.

**speed** *speed*

## Syntax Description

| | |
|---|---|
| *speed* | An integer value that configures the speed (in Mbps) of the connection between your server switch and an Ethernet device. Valid values are 10, 100, and 1000. |

## Defaults

This command has no default values.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user, Ethernet read-write user.

**Note** You cannot manually configure connection speed if you enable auto-negotiation. Enter the **no auto-negotiate** (Ethernet interface configuration submode) command before you manually configure connection speed.

The **speed** command sets the administrative speed (the speed that you want) only. Self-detection determines the actual speed, which depends on the capabilities of the connection. You must disable the auto-negotiation feature to manually configure speed.

## Examples

The following example sets the ethernet interface (slot 4, port 1) to a speed of 100 Mbps:

```
SFS-3012R(config-if-ether-4/1)# speed 100
```

## Related Commands

**auto-negotiate (Ethernet interface configuration submode)**
**half-duplex**
**show interface ethernet**

# speed (Fibre Channel interface configuration submode)

To configure the connection speed between Fibre Channel interface ports on your server switch and Fibre Channel devices, enter the **speed** command in Fibre Channel interface configuration submode.

**speed** *speed*

## Syntax Description

| | |
|---|---|
| *speed* | An integer value that configures the speed (in Mbps) of the connection between your server switch and a Fibre Channel device. Enter **1000** for 1 Gbps or **2000** for 2 Gbps. |

## Defaults

By default, Fibre Channel connections run at 2000 Mbps (2 Gbps).

## Command Modes

Fibre Channel interface configuration (config-if-fc) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Unrestricted read-write user, Fibre Channel read-write user.

**Note** You cannot manually configure connection speed if you enable auto-negotiation. Enter the **no auto-negotiate (config-if-fc submode)** command before you manually configure connection speed.

The speed of a connection does not necessarily match the speed that you configure. If your connection cannot physically connect at the speed that you specify, the connection runs at a slower speed that your server switch automatically detects. As soon as a physical change makes your speed setting possible, the connection runs at the speed that you specified.

## Examples

The following example sets the preferred speed to 1,000 Mbps (1 Gbps). The results of this command may be viewed in the admin-speed field for Fibre Channel interfaces using the **show interface fc** command:

```
SFS-3012R(config-if-fc-5/4)# speed 1000
```

## Related Commands

**auto-negotiate (Fibre Channel interface configuration submode)**
**show fc srp initiator**
**show interface fc**

# speed (InfiniBand interface configuration submode)

To configure the link capacity (or port speed) of an InfiniBand connection, enter the **speed** command in InfiniBand interface configuration submode.

**speed** *speed*

## Syntax Description

| | |
|---|---|
| *speed* | Must have one of the following values. (The resultant configured speed is shown in parentheses):<br>• **1x** (2.5 Gbps)<br>• **4x** (10 Gbps)<br>• **12x** (30 Gbps)<br>• **1x-sdr** (2.5 Gbps)<br>• **4x-sdr** (10 Gbps)<br>• **12x-sdr** (30 Gbps)<br>• **1x-ddr** (5 Gbps)<br>• **4x-ddr** (20 Gbps)<br>• **12x-ddr** (60 Gbps)<br>**Note** For an InfiniBand port connected with an SDR cable or any cable longer than 8 feet, you must manually configure the port to support SDR only. |

## Defaults

This command has no default values.

## Command Modes

InfiniBand interface configuration (config-if-ib) submode (select server switches).

## Usage Guidelines

**Platform Availability:**

Cisco SFS 7000D

**Privilege Level:**

Unrestricted read-write user, InfiniBand read-write user.

**Note** You cannot manually configure connection speed if you enable auto-negotiation. Enter the **no auto-negotiate (config-if-ib submode)** command before you manually configure connection speed.

The **speed** command sets the administrative value only. You must disable the auto-negotiation feature to manually configure the link capacity. With auto-negotiation turned on, self detection determines the port speed, which depends upon the capabilities of the connection.

With auto-negotiation disabled, the **speed** command sets the InfiniBand port speed to the product of the link width and the lane speed as follows:

- A link width of 1x with a lane speed of SDR yields a link capacity of 2.5 Gpbs, or with a lane speed of DDR it yields a link capacity of 5 Gbps.

- A link width of 4x with a lane speed of SDR yields a link capacity of 10 Gpbs, or with a lane speed of DDR it yields a link capacity of 20 Gbps.
- A link width of 12x with a lane speed of SDR yields a link capacity of 30 Gpbs, or with a lane speed of DDR it yields a link capacity of 60 Gbps.

**Note** For an InfiniBand port connected with an SDR cable or any cable longer than 8 feet, you must manually configure the port to support SDR only.

## Examples

The following example sets all InfiniBand interfaces on a Cisco SFS 7000D to a speed of 20 Gbps:

```
SFS-7000D (config-if-ib-1/1-1/24)# speed 4x-ddr
```

## Related Commands

**auto-negotiate (InfiniBand interface configuration submode)**
**show interface ib**

# start

To begin a diagnostic test, enter the **start** command in the appropriate interface diagnostic configuration submode.

**start**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Fibre Channel interface diagnostic configuration (config-diag-if-fc) submode, Ethernet interface diagnostic configuration (config-diag-if-en) submode, or card interface diagnostic configuration (config-diag-if-card) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

## Examples

The following example starts a LED diag test on a Fibre Channel interface:

```
SFS-3012R(config-diag-if-fc-4/1)# test led
SFS-3012R(config-diag-if-fc-4/1)# start
```

The following example starts a self-test diagnostic test on a card:

```
FS-3012R (config-diag-card-6)# test self-test
SFS-3012R (config-diag-card-6)# start
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface fc**
**show interface gateway**
**stop**
**test**

# stop

To end a diagnostic test, enter the **stop** command in the appropriate interface Diagnostic configuration submode.

**stop**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Fibre Channel interface diagnostic configuration (config-diag-if-fc) submode, Ethernet interface diagnostic configuration (config-diag-if-en) submode, or card interface diagnostic configuration (config-diag-if-card) submode, card diagnostic configuration submode, (config-diag-card), chassis diagnostic configuration submode (config-diag-chassis), fan diagnostic configuration submode (config-diag-fan), power supply diagnostic configuration submode (config-diag-power-supply), InfiniBand interface diagnostic configuration submode (config-diag-if-ib)

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Fibre Channel read-write user.

## Examples

The following example stops the test running on Fibre Channel port 4/1:

```
SFS-3012R(config-diag-if-fc-4/1)# stop
```

The following example stops the test running on card 6:

```
SFS-3012R(config-diag-card-6)# stop
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface fc**
**show interface gateway**
**start**
**test**

# system-mode

To configure your server switch to deny changes to SRP configuration to preserve VFrame-authorized configurations, enter the system-mode command in global configuration mode.

**system-mode** {**normal** | **vframe-210**}

## Syntax Description

| | |
|---|---|
| **normal** | Grants all users with appropriate access levels to configure SRP on the server switch. |
| **vframe-210** | Prevents changes to the SRP configuration on the server switch so as to preserve the VFrame SRP configuration. |

## Defaults

By default, authorized users can manually alter the SRP configuration.

## Command Modes

Global configuration mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user, Fibre Channel read-write user

Configure the system-mode of all switches in a VFrame environment to vframe-210 to avoid manual SRP configuration changes that interfere with the VFrame SRP configuration.

## Examples

The following example locks the SRP configuration for VFrame purposes:

```
SFS-3012R(config)# system-mode normal
```

## Related Commands

**fc srp initiator**
**fc srp initiator-wwpn**
**fc srp it**
**fc srp itl**
**fc srp lu**
**fc srp target**
**fc srp-global gateway-portmask-policy restricted**
**fc srp-global itl**
**fc srp-global lun-policy restricted**

# system ib-counter-reset

To disable the regular resetting of IB port counters on your server switch, enter the system **ib-counter-reset** command in global configuration mode. To reenable the regular resetting of IB port counters on your server switch, use the no form of this command.

**system ib-counter-reset**

**no system ib-counter-reset'**

## Syntax Description

This command has no arguments or keywords.

## Defaults

Counter resetting is enabled.

## Command Modes

Global configuration mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

Use the **system ib-counter-reset** command to enable or disable the regular resetting of IB port counters. This is a global, chassis-wide setting that allows you to stop all IB port agents from resetting the IB port counters.

## Examples

The following example disables the regular resetting of IB port counters:

```
SFS-7000P(config)# no system ib-counter-reset
```

# tacacs-server

To configure a TACACS+ server, use the **tacacs-server host** command.

**tacacs-server host** *ip-address* [**port** *port*] [**timeout** *seconds*] [**retransmit** *retransmit*] [**key** *authentication-key*]

**no tacacs-server host** *ip-address*

## Syntax Description

| | |
|---|---|
| **host** | Specifies the address of the TACACS+ server. |
| *ip-address* | IP address of the TACACS+ server. |
| **port** | (Optional) Specifies the authentication port of the TACACS+ server. |
| *port* | (Optional) Authentication port of the TACACS+ server. Default is port 49. |
| **timeout** | (Optional) Specifies the amount of time that the server switch waits for a reply from the server before the login request times out. |
| *seconds* | (Optional) Login request times out if no reply is received from the server within this period. Default is 5 seconds. |
| **retransmit** | (Optional) Specifies the number of times the server switch tries to authenticate after a timeout. |
| *retransmit* | (Optional) The number of times the server switch tries to authenticate after a timeout. |
| **key** | (Optional) Specifies the authentication key that the client and TACACS+ server use. |
| *authentication-key* | (Optional) Authentication key that the client and TACACS+ server use. Specify a pair of double quotation marks (“”) to delete an existing key. |

## Defaults

The TACACS+ host authentication *port* value defaults to 49. The **timeout** *seconds* parameter defaults to 5.

## Command Modes

Global configuration mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted and general read-write user.

Use the **tacacs-server** command to identify a host as a TACACS+ server.

You can configure up to three TACACS+ servers. The order in which you configure them determines the order in which the authentication process attempts to access them.

Configure a TACACS+ server to authenticate CLI user logins. Enter the **authentication** command to enable authentication and to configure your server switch to authenticate with the TACACS+ server. Use the **show authentication** command to display the configuration of the TACACS+ server, including the priority.

## Examples

The following example changes command mode to executive mode and then to configuration mode, and then it identifies 164.28.299.30 as a TACACS+ server:

```
SFS-7000>enable
SFS-7000P# configure
SFS-7000P(config)# tacacs-server host 164.28.299.30
```

## Related Commands

**authentication**
**boot-config**
**clock set**
**show authentication**
**snmp-server**
**radius-server**

# target-wwpn

To configure an optional WWPN identifier for a Fibre Channel interface Echo test, enter the **target-wwpn** command in Fibre Channel interface diagnostic configuration submode.

**source-wwpn** *wwpn*

**no source-wwpn** *wwpn*

## Syntax Description

| | |
|---|---|
| *wwpn* | Optional 64-bit target identifier to use with the Fibre Channel interface Echo test. |

## Defaults

This command has no default settings.

## Command Modes

Fibre Channel interface diagnostic configuration (config-diag-if-fc) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Fibre Channel read-write user.

## Examples

The following example configures a target identifier for use with a Fibre Channel interface test:

```
SFS-3012R(config-diag-if-fc-4/1)# target-wwpn 20:01:00:05:ad:00:40:00
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface fc**
**show interface gateway**
**start**
**stop**
**test**

# telnet

To enable or disable Telnet services on your server switch, enter the **telnet** command in privileged EXEC mode.

**telnet** {**enable** | **disable**}

## Syntax Description

| | |
|---|---|
| **enable** | Enables Telnet services. |
| **disable** | Disables Telent services. |

## Defaults

By default, Telnet services run on your server switch.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write access.

Disable the Telnet feature to restrict access to your server switch to SSH only. Your server switch supports two concurrent Telnet log-ins (in addition to the serial log-in, if applicable).

## Examples

The following example enables Telnet access to the server switch:

```
SFS-7000P(config)# telnet enable
```

## Related Commands

**ftp-server enable**
**history**
**more**
**show interface mgmt-ethernet**
**show interface mgmt-ib**
**show system-services**

# terminal

To configure

- the maximum number of lines that appear on the terminal screen when you enter commands that display multiple lines of output,
- the duration of idle time that triggers your server switch to automatically log you out and end your CLI session

enter the **terminal length** command in user EXEC mode or privileged EXEC mode. To restore these settings to default values, use the **no** form of this command.

**terminal** {**length** *number-of-lines* | **time-out** *minutes*}

**terminal no** {**length** | **time-out**}

## Syntax Description

| | |
|---|---|
| **length** | Specifies the number of lines that appear on the screen when you run commands such as the **more** command an on-line help (**?**). |
| *number-of-lines* | Number (integer) of lines that appear on the screen when you run commands such as the **more** command. Enter **0** to disable paging and display all output at once. |
| **time-out** | Specifies the amount of idle time that your server switch allows before it logs a user out of the CLI. |
| *minutes* | Number of minutes (integer ranging from 1 to 100000) of idle time that prompts your server switch to end your CLI session and log you out. |

## Defaults

By default, the CLI displays 24 lines per screen.

By default, your server switch logs you out after 15 minutes of inactivity.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-only user.

- length

  A *number-of-lines* value of 0 turns off paging and displays data on the screen without stopping until completed. We recommend that you set the terminal page length to 0 when you use the **show logging** command with the **end** argument. Otherwise, you will have to keep pressing the space bar to continue each time the maximum display length prints. The **no** form of this command resets the terminal length to the default.

The number of lines specified only applies to the current CLI session. Other users are unaffected by changes to the display length.

**Note** If you set the page length to 0 to disable paging, do not change the terminal window size. Changing window size restores the terminal length to that of the window and re-enables paging.

- time-out

  Changes to this parameter apply immediately to all users and continue to apply to users who log in after you configure the timeout value. Enter **0** to disable timeouts.

**Note** System timeouts apply if you use Telnet or SSH to connect to your server switch.

## Examples

The following example configures the CLI to display 66 lines of display output at a time:

```
SFS-7000P# terminal length 66
```

The following example configures the CLI to time out after 60 minutes:

```
SFS-7000P# terminal time-out 60
```

## Related Commands

**logging**
**more**
**show logging**
**show system-services**
**show terminal**

# test

Specify a diagnostic test to run with the test command in appropriate diagnostic configuration submode.

**test {echo | int-loopback | ext-loopback | led | self-test}**

**Note** The SFS 7000 does not support external loopback tests for InfiniBand interfaces. Table 7-8 describes the different tests that you can run and the interfaces or cards on which you can run them.

## Syntax Description

| | |
|---|---|
| **echo** | Echo test (Fibre Channel gateway only). |
| **int-loopback** | Internal loopback test (unsupported). |
| **ext-loopback** | External loopback test (Fibre Channel gateway only). |
| **led** | LED test. |
| **self-test** | Self test. |
| **ext-cable** | External cable test (unsupported). |

## Defaults

This command has no default settings.

## Command Modes

Fibre Channel interface diagnostic configuration (config-diag-if-fc) submode, Ethernet interface diagnostic configuration (config-diag-if-en) submode, InfiniBand interface diagnostic configuration (config-diag-if-ib) submode, power supply diagnostic configuration (config-diag-power-supply) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Read-write user.

## Examples

The following example specifies a LED test to run on card 11 when the **start** command completes:

```
SFS-7000P (config-diag-card-11)# test LED
```

## Related Commands

diagnostic
show interface ethernet
show interface fc

**show interface gateway**
**start**
**stop**

# trace

To track internal server switch program modules that specific interface cards call, enter the **trace** command in global configuration mode.

**Note** Use this command only under the direction of support personnel for program debug purposes.

**trace app** *app* **module** *mod* **level** {**no-display** | **very-terse** | **terse** | **verbose** | **very-verbose** | **scream**} **flowmask** *val* [**card** *slot*]

## Syntax Description

| | |
|---|---|
| **app** | Identifies an internal application to trace. |
| **module** | Identifies a program module to trace within the specified application. |
| **level** | Specifies the verbosity level of the **trace** command output. |
| **flowmask** | Masks modules that you do not want to display. |
| **card** | (Optional) Identifies the card to trace. |
| **no-display** | Disables tracing when you also set the *val* variable to 0x00. |
| **very-terse** | Contact technical support for details. |
| **terse** | Contact technical support for details. |
| **verbose** | Contact technical support for details. |
| **very-verbose** | Contact technical support for details. |
| **scream** | Contact technical support for details. |
| *app* | Integer that indicates the internal application to trace. |
| *mod* | Program module within the application. |
| *val* | Decimal or hexadecimal value of modules to mask. A value of 0xFFFFFFFF masks all modules. A value of 0x00 displays all modules. |
| *slot* | (Optional) Slot number of the card to trace. |

## Defaults

This command has no default settings.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

Use this command to debug your system.

The number of applications and modules may change between releases. The numbers assigned to applications and modules may also change. Check application and module number assignments using CLI help (**?**) before you execute this command, as shown in the example below.

## Examples

The following example displays the applications that you can trace (output abridged):

```
SFS-7000P(config)# trace app ?
app <1-25>
app numbers:
APP_ID_CLI        = 1
APP_ID_OSPF       = 2
APP_ID_RIP        = 3
…
…
APP_ID_IP_AGENT   = 22
APP_ID_FIB_AGENT  = 23
APP_ID_KERNEL     = 24
APP_ID_CARD_AGENT = 25
APP_ID_SM         = 26
```

The following example enables tracing for application 4, module 36:

```
SFS-7000P(config)# trace app 4 module 36 level very-verbose flowmask 0x12 card 2
```

## Related Commands

**help**
**show trace**

# trunk-group

To assign a trunk group to one or more Ethernet interfaces, enter the **trunk-group** command in Ethernet interface configuration submode. To remove a trunk group from the configuration, enter the **no** form of this command.

**trunk-group** *id*

**no trunk-group** *id*

## Syntax Description

| | |
|---|---|
| *id* | Integer that identifies the trunk-group. |

## Defaults

By default, trunk groups do not apply to interfaces.

## Command Modes

Ethernet interface configuration (config-if-ether) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R

**Privilege Level:**

Ethernet read-write user.

The **trunk-group** command assigns an already-configured trunk group to the Ethernet interface.

## Examples

The following example assigns a trunk group to the Ethernet interface (slot 2, ports 1 - 4):

```
SFS-3012(config-if-ether-2/1-2/4)# trunk-group 2
```

## Related Commands

**show trunk**
**show interface ethernet**

# type

To assign an administrative card-type to a slot into which you want to install a card, enter the **type** command in card configuration submode.

**type** *card-type*

## Syntax Description

| | |
|---|---|
| *card-type* | Type of card in the slot. See Table 3-95 for available card types. |

## Defaults

This command has no default settings.

## Command Modes

Card configuration (config-card) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted or card-specific read-write user.

Use the **type** command to reserve slots for particular card types. For instance, if you want a slot to run only Fibre Channel gateway cards, configure the type of the slot to “fc2port2G” so that only that card type will function in the slot. Any other card that you place in the slot will not function. Table 3-95 lists and describes available card types.

*Table 3-95 Card Types*

| Type | Description |
|---|---|
| controller | Configures the slot for a Cisco SFS 3012R controller card. |
| controllerFabric12x | Configures a slot in a Cisco SFS 7008 for a fabric controller module (FCM). |
| controllerIb8port12x | Configures the slot for a Cisco SFS 7000 controller card with eight 12x InfiniBand ports. |
| controllerIb12port4x | Configures the slot for a Cisco SFS 3001 controller card with 12 4x InfiniBand ports. |
| controllerIb24port4x | Configures the slot for a Cisco SFS 7000 controller card with 24 4x InfiniBand ports. |
| controllerIb24port4xDDR | Configures the slot for a Cisco SFS 7000D controller card with 24 4x InfiniBand double data rate ports. |
| en4port1G | Configures the slot for a 4-port, 1Gbps Ethernet gateway. |
| en6port1G | Configures the slot for a 6-port, 1Gbps Ethernet gateway. |

*Table 3-95 Card Types (continued)*

| Type | Description |
|---|---|
| fabric12x | Configures a slot in a Cisco SFS 7008 for a fabric controller module (FCM). |
| fc2port2G | Configures the slot for a 2-port, 2Gbps Fibre Channel gateway. |
| fc4port2G | Configures the slot for a 4-port, 2Gbps Fibre Channel gateway. |
| ib1port12xFX8port4xTX | Configures the slot in a Cisco SFS 7008 InfiniBand switch card with one 12x port and eight 4x ports. |
| ib4port12xFX | Configures the slot in a Cisco SFS 7008 for a 4-port, 12X InfiniBand switch card. |
| ib4port12xTX | Configures the slot in a Cisco SFS 7008 for a 4-port, 12X InfiniBand switch card. |
| ib12port4x | Configures the slot for a 12-port, 4X InfiniBand switch card. |
| ib12port4xTX | Configures a slot in a Cisco SFS 7008 for a line interface module (LIM) with twelve 4x InfiniBand ports. |
| ib12port4xTXP | Configures a slot in a Cisco SFS 7008P for a line interface module (LIM) with twelve 4x InfiniBand ports. |
| ib14port1x4port4x | Configures a Cisco 4x InfiniBand Switch Module for IBM BladeCenter to run four 4x ports and not one 4x port and one 12x port. |
| ib24port4x | Configures the slot for a 24-port, 4X InfiniBand switch card. |
| idmodule | Configures a slot on a Cisco SFS 7008. |
| mgmtIO | Configures the slot for a Cisco SFS 7008 management I/O card. |

## Examples

The following example assigns a card-type to the expansion module slot on a Cisco SFS 3001:

```
SFS-3001(config-card-2)# type en4port1G
```

The following example assigns a card-type to expansion modules 2 through 4 on a Cisco SFS 3012R:

```
SFS-3012R(config-card-2-4)# type en4port1G
```

## Related Commands

**shutdown**
**show card**

# username

To reconfigure or create and configure user accounts, enter the **username** command in global configuration mode. To delete a user account, use the **no** form of this command.

**username** *user* **password** *passwd*

Creates a new user account.

**username** *user* {[**disable** | **enable**] | [**community-string** *string* | **no-community-string**] | **privilege** *priv...*]}

Reconfigures an existing user account

**no username** *user*

Deletes an existing user account.

## Syntax Description

| | |
|---|---|
| *user* | Account login name (up to 20 alphanumeric characters). |
| **password** | Configures the password for the user account. |
| *passwd* | Account password (5 to 34 alphanumeric characters). |
| **disable** | (Optional) Disables the user account. |
| **enable** | (Optional) Enables the user account. |
| **community-string** | (Optional) Assigns a SNMP community string to the user account. |
| *string* | (Optional) SNMP community string. |
| **no-community-string** | (Optional) Clears the SNMP community string of the user. |
| **privilege** | (Optional) Assigns access privileges to the user.<br>**Note** When you assign privileges, new privileges completely overwrite your previous privilege settings. If you omit an access privilege, the user account will lose this privilege even if you previously assigned it to the account. |
| *priv* | (Optional) Access privilege. The *priv* variable may be any of the following:<br>• **ib-ro**, for InfiniBand read-only access<br>• **ib-rw**, for InfiniBand read-write access<br>• **ip-ethernet-ro**, for Ethernet read-only access<br>• **ip-ethernet-rw**, for Ethernet read-write access<br>• **fc-ro**, for Fibre Channel read-only access<br>• **fc-rw**, for Fibre Channel read-write access<br>• **unrestricted-rw**, for universal read-write access |

## Defaults

Guest user accounts are disabled by default. All other user accounts are enabled.

## Command Modes

Global configuration (config) mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
Cisco SFS 7000, Cisco SFS 7000P, Cisco SFS 7008, Cisco SFS 7008P, Cisco SFS 7000D
Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

Unrestricted read-write user or general read-write user (change own password only).

The **username** command

- Creates and remove user accounts. The default CLI user accounts are guest, admin, and super.
- Changes user password. A user with read-write access may change their own password.
- Assigns access levels based upon functional areas, such as Fibre Channel, Ethernet, and InfiniBand administrative areas. Access levels may be unrestricted or read-only or read-write for the various administrative areas. Unrestricted indicates super user.
- Enables or disables the account.
- Associates user accounts with SNMP community strings. This community string serves as the password for Element Manager access.

You must create the user account with the **password** keyword before you can configure the account. By default, the server switch provides the unrestricted user login **super** (that uses a default password of **super**). This login uses **secret** as its default SNMP community string. SNMP community strings provide the user credentials necessary to access Management Information Base (MIB) object.

Each user login uses one unique community string and one password. A login must use a community string to launch an Element Manager session. To restrict a deny a user access to SNMP, do not provide the login with a community string.

**Note** SNMP community strings are sent across the network in UDP packets with no encryption.

By default, new user accounts have read-only access. You may grant write privileges to a user for functional areas, such as InfiniBand, Ethernet, and Fibre Channel. Privileges are order-dependent. You must enter multiple access privileges in the following order:

1. ib-ro
2. ib-rw
3. ip-ethernet-ro
4. ip-ethernet-rw
5. fc-ro
6. fc-rw
7. unrestricted-rw

When changing the privileges of an existing user, specify all the privileges allowed to the user (including re-entering existing privileges) because the privilege argument removes all existing privileges and replaces them with the new ones.

For security purposes, since multiple users exist on the system, we recommend that you change the default passwords after initial configuration. The default user accounts are listed in the table below.

*Table 3-96 Default User Accounts*

| Username | Password | Privilege |
|---|---|---|
| super | By default, the password is **super**. The default community string is **secret**. | The super user has unrestricted privileges. Use this account to manage any part of the system. This user may view and modify a configuration, as well as administer user accounts and access privileges. This user configures the console and management ports for initial chassis setup. |
| admin | By default, the password is **admin**. The default community string is **private**. | The admin user has general read-write privileges. This user may view and modify the current configuration. However, the admin user can change only its own user information, such as the admin password. |
| guest | The default password is **guest**. The default community string is **public**. | The guest user has read-only privileges. This user may only view the current configuration. The guest user cannot make any changes during the CLI session. |

## Examples

The following example creates a user with InfiniBand and Fibre Channel administrative privileges, as well as an SNMP community-string:

```
SFS-7000P(config)# username ib-fc_admin password ibFcAdmin
SFS-7000P(config)# username ib-fc_admin community-string ibFc-commStr
SFS-7000P(config)# username ib-fc_admin privilege ib-rw ip-ethernet-ro fc-rw
SFS-7000P(config)# username ib-fc_admin enable
SFS-7000P(config)# exit
SFS-7000P# show user ib-fc_admin
===============================================================
                        User Information
===============================================================
                 username : ib-fc_admin
                 password : $1$JwcI/25k$3aCHn3BAQcTF3V2PGv1m7.
           snmp-community : ibFc-commStr
         permission-level : ib-rw, ip-ethernet-ro, fc-rw
             admin-status : enabled
               num-logins : 0
  num-unsuccessful-logins : 0
               last-login :
  last-unsuccessful-login :
SFS-7000P#
```

The following example disables a user account but does not delete it:

```
SFS-7000P(config)# username ib-fc_admin disable
```

The following example deletes a user account:

```
SFS-7000P(config)# username ib-fc_admin no
```

## Related Commands

ftp-server enable
show user
snmp-server
telnet

# validate

To validate diagnostic tests, enter the **validate** command in the appropriate diagnostic configuration submode.

**validate**

**no validate**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

Diagnostic configuration (config-diag) submode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
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Cisco 4x InfiniBand Switch Module for IBM BladeCenter

**Privilege Level:**

General read-write user.

## Examples

The following example validates diagnostic tests on port 6/2:

```
SFS-7000P (config-diag-if-en-6/2)# validate
```

## Related Commands

**diagnostic**
**show interface ethernet**
**show interface fc**
**show interface gateway**
**start**
**stop**

# who

To display

- the users currently connected to your server switch,
- the host system from which each connected user logged in,

enter the **who** command in user EXEC mode or privileged EXEC mode.

**who**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
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**Privilege Level:**

General read-only user.

Use this command before you reboot the server switch so you can broadcast a message about impending reboots if other users have sessions open to the server switch.

## Examples

The following example displays the users on the server switch:

```
SFS-7000P# who
super                   Console
super                   10.10.253.47
admin                   10.10.196.8
SFS-7000P#
```

## Related Commands

**broadcast**
**reload**
**write**

# write

To send a text message to another CLI user, enter the **write** command in user EXEC mode or privileged EXEC mode.

**write** *user* **"***string***"**

## Syntax Description

| | |
|---|---|
| *user* | User account to which you want to send a message. |
| *string* | Text that you want to send to the other user. |

## Defaults

This command has no default settings.

## Command Modes

User EXEC mode, privileged EXEC mode.

## Usage Guidelines

**Platform Availability:**

Cisco SFS 3001, Cisco SFS 3012, Cisco SFS 3012R
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**Privilege Level:**

General read-only user.

Use the **write** command to send messages about administrative functions that impact individual users.

## Examples

The following example sends a message to the admin user:

```
SFS-7000P# write admin "Please reconnect ib1 to the switch card."
```

## Related Commands

**broadcast**
**who**