IP Commands

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- `distribution-type`, page 5-5
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- `trunk-group`, page 5-12

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

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

no arp ethernet ip-address mac-address
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ip-address</td>
<td>IP address of the host.</td>
</tr>
<tr>
<td>mac-address</td>
<td>MAC address of the host.</td>
</tr>
<tr>
<td>slot#</td>
<td>Slot on the Server Switch that holds the Ethernet gateway that connects to the host.</td>
</tr>
<tr>
<td>port#</td>
<td>Ethernet gateway port that connects to the host.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Command Modes**

Global Configuration (config) mode.

**Usage Guidelines**

**Platform Availability:**
Cisco SFS 3001, Cisco SFS 3012

**Privilege Level:**
Ethernet read-write user.

The Server Switch supports dynamic ARP so that any IP host that connects to an Ethernet gateway port may 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 may be dynamically learned or statically created. In most cases, you can rely upon dynamic ARP addressing. Dynamic ARP records may be deleted from the table after a period of time, or updated, if a host address-change occurs.

**Examples**

```
SFS-7000P(config)# arp ethernet 10.2.0.50 00:30:48:23:A9:0A 4/1
```

**Related Commands**

`show arp ethernet`
To create and configure bridge groups, enter the `bridge-group` command in Global Configuration mode or Ethernet Interface Configuration submode. To remove bridge groups or attributes of bridge groups, use the `no` form of this command.

```
bridge-group bridgegroupID { broadcast-forwarding | eth-next-hop ip-address [dest dest-addr dest-mask] | ib-next-hop ip-address [dest dest-addr dest-mask] | name “name-string” | subnet-prefix prefix length | loop-protection { one | two | multicast | fail-over-priority priority | redundancy-group group }
```

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

```
no bridge-group bridgegroupID | broadcast-forwarding | eth-next-hop | ib-next-hop | loop-protection { one | two } | multicast | redundancy-group group |
```

```
no bridge-group bridgegroupID [pkey | subnet-prefix prefix length]
```

### Syntax Description

- **bridgegroupID**: Bridge group to create or reconfigure.
- **broadcast-forwarding**: (Optional) Enables broadcast forwarding for the bridge group.
- **eth-next-hop**: (Optional) Identifies the next-hop IP address connected to the ethernet gateway.
  - **ip-address**: (Optional) Next-hop IP address
- **ib-next-hop**: (Optional) Identifies the next-hop IP address connected to the IB switch.
- **loop-protection**: (Optional) Specifies the type of loop protection for the bridge-group.
  - **one**: Specifies type one loop protection (ARP packet painting enabled).
  - **two**: Specifies type two loop protection (ARP packet painting disabled).
- **multicast**: (Optional) Enables IP-V4 multicast forwarding for the bridge group.
- **name**: Assigns an ASCII text string identifier to the bridge group.
  - **name-string**: ASCII text string identifier for the bridge group.
- **subnet-prefix**: (Optional) Assigns a subnet to the bridge-group.
  - **prefix**: (Optional) Subnet to assign to the bridge group.
  - **length**: (Optional) Length, in bits, of the subnet mask to assign to the bridge group.
- **fail-over-priority**: Specifies the failover priority of the bridge group.
  - **priority**: Integer value (1 - 255), where the lower the integer the higher the priority.
- **redundancy-group**: (Optional) Assigns the bridge group to a redundancy group.
  - **group**: (Optional) Redundancy group to which you want the bridge group to belong.
- **pkey**: (Optional) Specifies a partition key to assign to the bridge group.
  - **partition-key**: Partition key to assign to the bridge group.
- **dest**: (Optional) Specifies the destination subnet.
  - **dest-addr**: (Optional) Address of the destination subnet.
  - **dest-mask**: (Optional) Mask of the destination subnet.

### Defaults

This command has no default settings.
bridge-group

Command Modes
Global Configuration (config) mode, Ethernet Interface Configuration (config-if-ether) submode, Gateway Interface Configuration (config-if-gw) mode.

Usage Guidelines
Platform Availability:
Cisco SFS 3001, Cisco SFS 3012

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 creates a bridge group and uses auto-detect to discover all available subnets.
SFS-7000P(config)# bridge-group 61

The following example assigns a subnet prefix to a bridge group.
SFS-7000P(config)# bridge-group 61 subnet-prefix 61.0.0.0 16

The following example disables multicast forwarding for a bridge-group.
SFS-7000P(config)# no bridge-group 61 multicast

The following example assigns bridge group 62 to the Ethernet interface slot 6, port 2.
SFS-7000P(config-if-ether-6/2)# bridge-group 62

The following example assigns bridge group 62 to the internal gateway interface slot 6, ports 1 and 2.
SFS-7000P(config-if-gw-6)# bridge-group 62

The following example assigns a bridge group to a redundancy group and configures the failover priority of the bridge group.
SFS-7000P(config)# bridge-group 11 redundancy-group 11 fail-over-priority 10

Related Commands
configure terminal
redundancy-group
show bridge-group
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**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>dst-ip</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>dst-mac</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>src-dst-ip</strong></td>
<td>Bases load distribution on the IP address of the source logic gate (XOR) destination.</td>
</tr>
<tr>
<td><strong>src-dst-mac</strong></td>
<td>Bases load distribution on the MAC address of the source logic gate (XOR) destination.</td>
</tr>
<tr>
<td><strong>src-ip</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>src-mac</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>round-robin</strong></td>
<td>Bases the load distribution on a circular pattern to create an evenly distributed load.</td>
</tr>
</tbody>
</table>

**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

**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.
distribution-type

Examples

The following exampleconfigures src-mac distribution for the trunk interface.

SFS-7000P# interface trunk 1
SFS-7000P(config-if-trunk)# distribution-type src-mac

Related Commands show trunk
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

**Privilege Level:**
Ethernet read-write user.

If you disable auto-negotiation, set speed and duplex mode with the `half-duplex` command and `speed` 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-7000P(config-if-ether-4/1-4/4)# half-duplex
```

**Related Commands**

- `auto-negotiate`
- `show interface ethernet`
- `speed`
To assign an IP address or backup address and subnet mask to an Ethernet port, enter the `ip` command in Ethernet Interface Configuration submode. To clear this configuration, use the `no` form of this command.

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

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

To configure IP networking attributes on your Server Switch, enter the `ip` command in Global Configuration mode. To clear this configuration, use the `no` form of this command.

To configure Ethernet ports:

```
Note Layer 3 only; available to 4-port Ethernet gateways but not 6-port.
```

```
ip {address ip-address subnet-mask [priority address-priority]} no ip {address ip-address subnet-mask}
```

To configure the Ethernet Management port:

```
ip address ip-address subnet-mask
```

```
no ip
```

To configure the InfiniBand Management port:

```
ip address ip-address subnet-mask
```

```
no ip
```

To configure your Server Switch:

```
ip {domain-name name-string | name-server-one server | name-server-two server | route dest-address dest-subnet-mask next-hop}
```

```
oip {domain-name | name-server-one | name-server-two | route dest-address subnet-mask next-hop}
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>address</code></td>
<td>Assigns a primary IP address to a port.</td>
</tr>
<tr>
<td><code>ip-address</code></td>
<td>IP address to assign</td>
</tr>
<tr>
<td><code>subnet-mask</code></td>
<td>Subnet mask to assign</td>
</tr>
<tr>
<td><code>priority</code></td>
<td>Assigns a priority to the backup address that determines the order in which</td>
</tr>
<tr>
<td></td>
<td>the backup address adopts the traffic of the primary address. Your Server</td>
</tr>
<tr>
<td></td>
<td>Switch does not currently support this feature.</td>
</tr>
<tr>
<td><code>address-priority</code></td>
<td>Priority to assign. The higher the integer value, the higher the priority.</td>
</tr>
<tr>
<td><code>domain-name</code></td>
<td>Assigns a DNS name to your Server Switch.</td>
</tr>
<tr>
<td><code>name-string</code></td>
<td>Domain name to assign.</td>
</tr>
</tbody>
</table>
Chapter 5      IP Commands

This command has no default settings.

Command Modes
Ethernet Interface Configuration (config-if-ether) submode, Ethernet Management Interface Configuration (config-if-mgmt-ether) submode, InfiniBand Management Interface (config-if-mgmt-ib) submode, Global Configuration (config) mode.

Usage Guidelines
Cisco SFS 3001, Cisco SFS 3012

Privilege Level:
Ethernet read-write user.

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-7000P(config-if-ether-4/1)# ip address 10.3.0.24 255.255.255.0

The following example assigns the domain name shasta to the Server Switch.
SFS-7000P(config)# ip domain-name "shasta"

The following example configures your Server Switch to use a primary DNS.
SFS-7000P(config)# ip name-server-one 10.3.103.22

The following example configures your Server Switch to use a secondary DNS.
SFS-7000P(config)# ip name-server-two 10.3.103.23

<table>
<thead>
<tr>
<th>name-server-one</th>
<th>Specifies a primary domain name server (DNS).</th>
</tr>
</thead>
<tbody>
<tr>
<td>name-server-two</td>
<td>Specifies a secondary DNS.</td>
</tr>
<tr>
<td>server</td>
<td>Domain name server for your Server Switch to use.</td>
</tr>
<tr>
<td>route</td>
<td>Defines static routes to remote hosts or networks to forward IP packets.</td>
</tr>
<tr>
<td>dest-address</td>
<td>IP address of the host or network that you want to reach.</td>
</tr>
<tr>
<td>dest-subnet-mask</td>
<td>Netmask used to resolve host and network addressing. The netmask may be an IP network address, a host route (i.e. 255.255.255.255), or the default route (i.e. 0.0.0.0).</td>
</tr>
<tr>
<td>next hop</td>
<td>IP address of the next hop (out of your Server Switch) on the way to the destination.</td>
</tr>
</tbody>
</table>
The following example configures a static route on which to forward IP packets.

SFS-7000P(config)# ip route 192.168.3.0 255.255.255.0 10.10.1.0

Related Commands

- hostname
- ip
- ping
**redundancy-group**

To create or configure a redundancy group, enter the `redundancy-group` command in Global Configuration mode. To disable an attribute of a redundancy group or to delete a redundancy group, use the `no` form of this command.

`redundancy-group rg-number [broadcast-forwarding | load-balancing | multicast | new-member-force-reelection | name name]`

`no redundancy-group rg-number [broadcast-forwarding | load-balancing | multicast | new-member-force-reelection]`

### Syntax Description

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>rg-number</code></td>
<td>Number of the redundancy group.</td>
</tr>
<tr>
<td><code>broadcast-forwarding</code></td>
<td>Enables broadcast forwarding for all members of the redundancy group</td>
</tr>
<tr>
<td><code>load-balancing</code></td>
<td>Enables load balancing among all members of the group.</td>
</tr>
<tr>
<td><code>multicast</code></td>
<td>Enables multicast forwarding for all members of the redundancy group</td>
</tr>
<tr>
<td><code>new-member-force-reelection</code></td>
<td>Configures the redundancy group to force reelection when a new member joins.</td>
</tr>
<tr>
<td><code>name</code></td>
<td>Configures a name for the redundancy group</td>
</tr>
<tr>
<td><code>name</code></td>
<td>Name to assign to the redundancy group</td>
</tr>
</tbody>
</table>

### Defaults

By default, load balancing does not run on redundancy groups.

### Command Modes

Global Configuration (config) mode.

### Usage Guidelines

**Platform Availability:**
Cisco SFS 3001, Cisco SFS 3012

**Privilege Level:**
Ethernet read-write user.
Create and configure redundancy groups with this command.

### Examples

The following example creates a redundancy group.

```
SPS-7000P(config)# redundancy-group 11
```

### Related Commands

- `show redundancy-group`
- `bridge-group`
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

**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-7000P(config-if-ether-2/1-2/4)# trunk-group 2
```

**Related Commands**

`configure terminal`
`show trunk`
`show interface ethernet`