Switch Fabric Functionality

Note

- For complete syntax and usage information for the commands used in this chapter, see these publications:
- Cisco IOS Release 15.4SY supports only Ethernet interfaces. Cisco IOS Release 15.4SY does not support any WAN features or commands.

Tip

For additional information about Cisco Catalyst 6500 Series Switches (including configuration examples and troubleshooting information), see the documents listed on this page:

http://www.cisco.com/en/US/products/hw/switches/ps708/tsd_products_support_series_home.html

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Prerequisites for Switch Fabric Functionality

None.

Restrictions for Switch Fabric Functionality

None.

Information About the Switch Fabric Functionality

Switch Fabric Functionality Overview

The switch fabric functionality is built into the supervisor engine and creates a dedicated connection between fabric-enabled modules and provides uninterrupted transmission of frames between these modules. In addition to the direct connection between fabric-enabled modules provided by the switch fabric funtionality, fabric-enabled modules also have a direct connection to the forwarding bus.

Forwarding Decisions for Layer 3-Switched Traffic

Either a PFC or a Distributed Feature Card makes the forwarding decision for Layer 3-switched traffic as follows:

- A PFC makes all forwarding decisions for each packet that enters the switch through a module without a DFC.
- A DFC makes all forwarding decisions for each packet that enters the switch on a DFC-equipped module in these situations:
  - If the egress port is on the same module as the ingress port, the DFC forwards the packet locally (the packet never leaves the module).
  - If the egress port is on a different fabric-enabled module, the DFC sends the packet to the egress module, which sends it out the egress port.

Default Settings for Switch Fabric Functionality

Traffic is forwarded to and from modules in one of the following modes:

- Compact mode—The switch uses this mode for all traffic when only fabric-enabled modules are installed. In this mode, a compact version of the DBus header is forwarded over the switch fabric channel, which provides the best possible performance.
- Truncated mode—The switch uses this mode for traffic between fabric-enabled modules when there are both fabric-enabled and nonfabric-enabled modules installed. In this mode, the switch sends a truncated version of the traffic (the first 64 bytes of the frame) over the switch fabric channel.

Monitoring the Switch Fabric Functionality

Displaying the Switch Fabric Redundancy Status

To display the switch fabric redundancy status, perform this task:

Command	Purpose
Router# **show fabric active**	Displays switch fabric redundancy status.

```
Router# show fabric active
Active fabric card in slot 6
Backup fabric card in slot 5
Router#
```

Displaying Fabric Channel Switching Modes

To display the fabric channel switching mode of one or all modules, perform this task:

Command	Purpose
Router# **show fabric switching-mode** [**module** {*slot_number* | **all**]	Displays fabric channel switching mode of one or all modules.

This example shows how to display the fabric channel switching mode of all modules:

```
Router# show fabric switching-mode module all
Module Slot    Switching Mode
 1             dCEF
 4             dCEF
 5             dCEF
 6             dCEF
Router#
```

Displaying the Fabric Status

To display the fabric status of one or all switching modules, perform this task:

Command	Purpose
Router# **show fabric status** [*slot_number* | **all**]	Displays fabric status.

This example shows how to display the fabric status of all modules:

```
Router# show fabric status
 slot    channel      speed               module               fabric
                                          status               status
    1          0         8G                   OK                   OK
    5          0         8G                   OK          Up- Timeout
    6          0        20G                   OK         Up- BufError
    8          0         8G                   OK                   OK
    8          1         8G                   OK                   OK
    9          0         8G        Down- DDRsync                   OK
Router#
```

Displaying the Fabric Utilization

To display the fabric utilization of one or all modules, perform this task:

Command	Purpose
Router# **show fabric utilization** [*slot_number* | **all**]	Displays fabric utilization.

This example shows how to display the fabric utilization of all modules:

```
Router# show fabric utilization all
slot channel speed Ingress % Egress %
 1 0 40G 0 0
 1 1 40G 0 0
 2 0 40G 0 0
 2 1 40G 0 0
 3 0 40G 0 0
 3 1 40G 0 0
 4 0 40G 0 0
 4 1 40G 0 0
 5 0 40G 0 0
 5 2 40G 0 0
 6 0 20G 0 0
 6 1 20G 0 0
 6 2 20G 0 0
 6 3 20G 0 0
Router#
```

Displaying Fabric Errors

To display fabric errors of one or all modules, perform this task:

Command	Purpose
Router# **show fabric errors** [*slot_number* | **all**]	Displays fabric errors.

This example shows how to display fabric errors on all modules:

```
Router# show fabric errors

Module errors:
slot channel crc hbeat sync DDR sync
 1 0 0 0 0 0
 1 1 0 0 0 0
 4 0 0 0 0 0
 4 1 0 0 0 0
 5 0 0 0 0 0
 5 2 0 0 0 0
 6 0 0 0 0 0
 6 1 0 0 0 0
 6 2 0 0 0 0
 6 3 0 0 0 0

Fabric errors:
slot channel sync buffer timeout
 1 0 0 0 0
 1 1 0 0 0
 4 0 0 0 0
```

```
 4  1  0  0  0
 5  0  0  0  0
 5  2  0  0  0
 6  0  0  0  0
 6  1  0  0  0
 6  2  0  0  0
 6  3  0  0  0
Router#
```

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