show asic-version (virtual switch)

To display the ASIC version for a specific module, use the **show asic-version** command in EXEC mode.

show asic-version {**switch** *num*} {**slot** *num*}

Syntax Description

switch *num*	Specifies the switch to access; valid values are 1 and 2.
slot *num*	Specifies a slot number.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   In the **show asic-version** command output, the possible ASIC types are as follows:

- Lyra—Layer 2 forwarding engine
- Hyperion—Packet rewrite, multicast, and SPAN engine
- Medusa—Crossbar and bus fabric interface
- Polaris—Layer 3 CEF engine
- Pinnacle—4-port Gigabit Ethernet interface
- Titan—Packet rewrite and replication engine
- Vela—Bus interface
- Kuma 2—Bus bridge/converter ASIC.
- Metro_Argos 2—Metropolis Argos ASIC. Bridge between the port, fabric, and the forwarding engine.
- Metro_Krypton 2—Metropolis Krypton ASIC. Interface ASIC that sits between a port ASIC and the EARL complex.
- SSA 2 —Super Santa Anna ASIC. Serial link transceiver.
- R2D2 4—Port interface ASIC.
- SSA 1—Super Santa Anna ASIC. Serial link transceiver.
- SSO 4—Crossbar switch fabric ASIC.
- Tiangang 4—Interface between two R2D2s to be interfaced to one channel of the Metropolis ASIC instead of one R2D2 per channel.

Examples   The following example shows how to display the ASIC type and version for a specific module:

```
Router# show asic-version switch 1 slot 1
Module in switch 1, slot 4 has 5 type(s) of ASICs
        ASIC Name      Count      Version
            KUMA          2       (2.0)
     METRO_ARGOS          2       (2.0)
   METRO_KRYPTON          2       (2.0)
             SSA          2       (8.0)
            R2D2          4       (2.0)

Router#
```

show environment (virtual switch)

To display information about the environmental status, use the **show environment** command in EXEC mode.

show environment [**switch** *num*] [{**alarm** [{**status** | **threshold**} [*frutype*]]} | **connector** *parameter* | **cooling** *parameter* | **status** [*frutype*] | **temperature** *parameter*]

Syntax Description		
switch *num*	(Optional) Specifies the switch to access; valid values are 1 and 2.	
alarm	(Optional) Displays environmental alarm status.	
status	(Optional) Displays the operational FRU status.	
threshold	(Optional) Displays the preprogrammed alarm thresholds.	
frutype	(Optional) Field-replaceable unit (FRU) type; see the "Usage Guidelines" section for a list of valid values.	
connector *parameter*	(Optional) Displays the information about the connector parameters. • **all**—(Optional) Selects all FRU-types • **backplane**—(Optional) Specifies the backplane connectors. • **module** *slot*—(Optional) Specifies the module number.	
cooling *parameter*	(Optional) Displays the information about the cooling parameters; valid values are as follows: • **all**—(Optional) Selects all FRU-types • **fan-tray** *num*—(Optional) Specifies the number of the fan-tray. • **module** *slot*—(Optional) Specifies the module number.	
status	(Optional) Displays the operational status of the FRU-types.	
temperature *parameter*	(Optional) Displays the temperature readings valid values are as follows: • **all**—(Optional) Selects all FRU-types. • **backplane**—(Optional) Specifies the backplane. • **earl**—(Optional) Specifies the enhanced recognition logic (EARL) slot. • **module** *slot*—(Optional) Specifies the module number. • **rp** *slot*—(Optional) Specifies the RP (MSFC) number. • **vdb** *slot*—(Optional) Specifies the VDB number. • **vdb** *num*—(Optional) Specifies the VTT number.	

Command Default If you enter the **show environment** command without entering additional keywords or arguments, all the information about the environmental status is displayed for both switches.

Command Modes EXEC (>)

Command History	Release	Modification
	12.2(33)SXH1	Support for this command was introduced.
	12.2(50)SY	Support for this command was introduced.
	15.0(1)SY	Support for this command was introduced.

Usage Guidelines Valid values for the *frutype* are as follows:

- **all**—No arguments. Specifies all FRU types.

- **backplane**—No arguments. Specifies the backplane.

- **clock** *number*—Specifies the clock number; the valid values are 1 and 2.

- **earl** *slot*—See the "Usage Guidelines" section for valid values.

- **fan-tray** [*num*]—Specifies the fan tray, and optionally, you can specify the fan-tray number; the valid value is 1-1.

- *interface switch*/*slot*/*port.subinterface*—Specifies the interface type, switch number, module number, port number, and the subinterface number.

- **module** *slot*—See the "Usage Guidelines" section for valid values.

- **power-supply** *num*—Specifies the power supply; the valid values are 1 and 2.

- **rp** *slot*—See the "Usage Guidelines" section for valid values.

- **supervisor** *slot*—See the "Usage Guidelines" section for valid values.

- **vdb** *slot*—See the "Usage Guidelines" section for valid values.

- **vtt** *number*—1 to 3.

The *slot* argument designates the module and port number. Valid values for *slot* depend on the chassis and module that are used. For example, if you have a 48-port 10/100BASE-T Ethernet module that is installed in a 13-slot chassis, valid values for the slot number are from 1 to 13 and valid values for the port number are from 1 to 48.

The **show environment temperature module** command output includes the updated information after an SCP response is received.

In the output display, the following applies:

- N/O means not operational—The sensor is broken, returning impossible values.

- N/A means not available—The sensor value is presently not available; try again later.

- VTT 1, 2, and 3 refer to the power monitors that are located on the chassis backplane under the rear cover.

- The names of the ASIC are listed if there is more than one ASIC.

- The type of sensor is listed if there is more than one sensor on the ASIC.

- Current temperature.

- Major/minor threshold as read in the IDPROM.

- Status of whether the current temperature has exceeded any temperature thresholds.

- outlet temperature—Exhaust temperature value.

- inlet temperature—Intake temperature value.

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• device-1 and device-2 temperature—Two devices that measure the internal temperature on the indicated module. The temperature shown indicates the temperature that the device is recording. The devices are not placed at an inlet or an exit but are additional reference points.

Examples   The following example shows how to display all the environmental status information for both switches:

```
Router# show environment
 chassis id 0 switch_id 2

 chassis id 0 switch_id 2

environmental alarms:
system minor alarm on switch 2 power-supply 2 power-output-fa (raised 3w3d ago)

backplane:
  operating clock count: 0
  operating VTT count: 0

switch 1 fan-tray 1:
  switch 1 fan-tray 1 type: WS-C6K-6SLOT-FAN
  switch 1 fan-tray 1 version: 1
  switch 1 fan-tray 1 fan-fail: OK
switch 2 fan-tray 1:
  switch 2 fan-tray 1 type: WS-C6K-6SLOT-FAN
  switch 2 fan-tray 1 version: 2
  switch 2 fan-tray 1 fan-fail: OK
switch 2 VTT 1:
  switch 2 VTT 1 OK: OK
  switch 2 VTT 1 outlet temperature: 33C
switch 2 VTT 2:
  switch 2 VTT 2 OK: OK
  switch 2 VTT 2 outlet temperature: 29C
switch 2 VTT 3:
  switch 2 VTT 3 OK: OK
  switch 2 VTT 3 outlet temperature: 32C
switch 2 clock 1:
  switch 2 clock 1 OK: OK, switch 2 clock 1 clock-inuse: in-use
switch 2 clock 2:
  switch 2 clock 2 OK: OK, switch 2 clock 2 clock-inuse: not-in-use
switch 1 power-supply 1:
  switch 1 power-supply 1 fan-fail: OK
  switch 1 power-supply 1 power-input: AC low
  switch 1 power-supply 1 power-output-mo: low
  switch 1 power-supply 1 power-output-fa: OK
switch 1 power-supply 2:
  switch 1 power-supply 2 power-output-fa: failed
switch 2 power-supply 1:
  switch 2 power-supply 1 fan-fail: OK
  switch 2 power-supply 1 power-input: AC low
  switch 2 power-supply 1 power-output-mo: low
  switch 2 power-supply 1 power-output-fa: OK
switch 2 power-supply 2:
  switch 2 power-supply 2 power-output-fa: failed
switch 1 module 3:
  switch 1 module 3 power-output-fail: OK
  switch 1 module 3 outlet temperature: 43C
  switch 1 module 3 inlet temperature: 32C
  switch 1 module 3 aux-1 temperature: 43C
  switch 1 module 3 aux-2 temperature: 32C
  switch 1 module 3 asic-1 temperature: 66C
  switch 1 module 3 asic-2 temperature: 63C
```

```
    switch 1 module 3 EARL outlet temperatu: 38C
    switch 1 module 3 EARL inlet temperatur: 33C
switch 1 module 4:
    switch 1 module 4 power-output-fail: OK
    switch 1 module 4 outlet temperature: 38C
    switch 1 module 4 inlet temperature: 27C
switch 1 module 5:
    switch 1 module 5 power-output-fail: OK
    switch 1 module 5 outlet temperature: 31C
    switch 1 module 5 inlet temperature: 25C
    switch 1 module 5 device-1 temperature: 37C
    switch 1 module 5 device-2 temperature: 37C
    switch 1 module 5 asic-1 temperature: 25C
    switch 1 module 5 asic-2 temperature: 26C
    switch 1 module 5 asic-3 temperature: 25C
    switch 1 module 5 asic-4 temperature: 26C
    switch 1 module 5 asic-5 temperature: 26C
    switch 1 module 5 asic-6 temperature: 26C
    switch 1 module 5 RP outlet temperature: 27C
    switch 1 module 5 RP inlet temperature: 27C
    switch 1 module 5 EARL outlet temperatu: 34C
    switch 1 module 5 EARL inlet temperatur: 29C
switch 2 module 1:
    switch 2 module 1 power-output-fail: OK
    switch 2 module 1 outlet temperature: 43C
    switch 2 module 1 inlet temperature: 31C
switch 2 module 4:
    switch 2 module 4 power-output-fail: OK
    switch 2 module 4 outlet temperature: 38C
    switch 2 module 4 inlet temperature: 26C
switch 2 module 5:
    switch 2 module 5 power-output-fail: OK
    switch 2 module 5 outlet temperature: 31C
    switch 2 module 5 inlet temperature: 24C
    switch 2 module 5 device-1 temperature: 36C
    switch 2 module 5 device-2 temperature: 37C
    switch 2 module 5 asic-1 temperature: 25C
    switch 2 module 5 asic-2 temperature: 25C
    switch 2 module 5 asic-3 temperature: 25C
    switch 2 module 5 asic-4 temperature: 25C
    switch 2 module 5 asic-5 temperature: 25C
    switch 2 module 5 asic-6 temperature: 25C
    switch 2 module 5 RP outlet temperature: 31C
    switch 2 module 5 RP inlet temperature: 31C
    switch 2 module 5 EARL outlet temperatu: 34C
    switch 2 module 5 EARL inlet temperatur: 28C


 chassis id 0 switch_id 2

   chassis connector rating: 1260.00 Watts (30.00 Amps @ 42V)

switch 2 module 1
    switch 2 module 1 connector rating: 2016.00 Watts (48.00 Amps @ 42V)
    switch 2 module 1 power consumption: 295.26 Watts ( 7.03 Amps @ 42V)
switch 2 module 2
    switch 2 module 2 connector rating: 2016.00 Watts (48.00 Amps @ 42V)
    switch 2 module 2 power consumption: 444.36 Watts (10.58 Amps @ 42V)
switch 2 module 3
    switch 2 module 3 connector rating: 1260.00 Watts (30.00 Amps @ 42V)
    switch 2 module 3 power consumption: 152.04 Watts ( 3.62 Amps @ 42V)
switch 2 module 4
    switch 2 module 4 connector rating: 2016.00 Watts (48.00 Amps @ 42V)
    switch 2 module 4 power consumption: 240.24 Watts ( 5.72 Amps @ 42V)
```

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```
switch 2 module 5
  switch 2 module 5 connector rating: 1260.00 Watts (30.00 Amps @ 42V)
  switch 2 module 5 power consumption: 325.50 Watts ( 7.75 Amps @ 42V)

chassis per slot cooling capacity: 70 cfm
ambient temperature: < 55C
  switch 1 module 1 cooling requirement: 70 cfm
  switch 1 module 2 cooling requirement: 30 cfm
  switch 1 module 3 cooling requirement: 84 cfm
  switch 1 module 4 cooling requirement: 70 cfm
  switch 1 module 5 cooling requirement: 35 cfm
  switch 2 module 1 cooling requirement: 70 cfm
  switch 2 module 2 cooling requirement: 84 cfm
  switch 2 module 3 cooling requirement: 30 cfm
  switch 2 module 4 cooling requirement: 70 cfm
  switch 2 module 5 cooling requirement: 35 cfm
```

The following example shows how to display all the information about the status of the environmental alarm:

```
Router> show environment alarm threshold
environmental alarm thresholds:

power-supply 1 fan-fail: OK
  threshold #1 for power-supply 1 fan-fail:
    (sensor value != 0) is system minor alarm
power-supply 1 power-output-fail: OK
  threshold #1 for power-supply 1 power-output-fail:
    (sensor value != 0) is system minor alarm
fantray fan operation sensor: OK
  threshold #1 for fantray fan operation sensor:
    (sensor value != 0) is system minor alarm
operating clock count: 2
  threshold #1 for operating clock count:
    (sensor value < 2) is system minor alarm
  threshold #2 for operating clock count:
    (sensor value < 1) is system major alarm
operating VTT count: 3
  threshold #1 for operating VTT count:
    (sensor value < 3) is system minor alarm
  threshold #2 for operating VTT count:
    (sensor value < 2) is system major alarm
VTT 1 OK: OK
  threshold #1 for VTT 1 OK:
    (sensor value != 0) is system minor alarm
VTT 2 OK: OK
  threshold #1 for VTT 2 OK:
    (sensor value != 0) is system minor alarm
VTT 3 OK: OK
  threshold #1 for VTT 3 OK:
    (sensor value != 0) is system minor alarm
clock 1 OK: OK
  threshold #1 for clock 1 OK:
    (sensor value != 0) is system minor alarm
clock 2 OK: OK
  threshold #1 for clock 2 OK:
    (sensor value != 0) is system minor alarm
module 1 power-output-fail: OK
  threshold #1 for module 1 power-output-fail:
    (sensor value != 0) is system major alarm
module 1 outlet temperature: 21C
  threshold #1 for module 1 outlet temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for module 1 outlet temperature:
```

```
         (sensor value > 70) is system major alarm
module 1 inlet temperature: 25C
  threshold #1 for module 1 inlet temperature:
     (sensor value > 60) is system minor alarm
  threshold #2 for module 1 inlet temperature:
     (sensor value > 70) is system major alarm
module 1 device-1 temperature: 30C
  threshold #1 for module 1 device-1 temperature:
     (sensor value > 60) is system minor alarm
  threshold #2 for module 1 device-1 temperature:
     (sensor value > 70) is system major alarm
module 1 device-2 temperature: 29C
  threshold #1 for module 1 device-2 temperature:
     (sensor value > 60) is system minor alarm
  threshold #2 for module 1 device-2 temperature:
     (sensor value > 70) is system major alarm
module 5 power-output-fail: OK
  threshold #1 for module 5 power-output-fail:
     (sensor value != 0) is system major alarm
module 5 outlet temperature: 26C
  threshold #1 for module 5 outlet temperature:
     (sensor value > 60) is system minor alarm
  threshold #2 for module 5 outlet temperature:
     (sensor value > 75) is system major alarm
module 5 inlet temperature: 23C
  threshold #1 for module 5 inlet temperature:
     (sensor value > 50) is system minor alarm
  threshold #2 for module 5 inlet temperature:
     (sensor value > 65) is system major alarm
EARL 1 outlet temperature: N/O
  threshold #1 for EARL 1 outlet temperature:
     (sensor value > 60) is system minor alarm
  threshold #2 for EARL 1 outlet temperature:
     (sensor value > 75) is system major alarm
EARL 1 inlet temperature: N/O
  threshold #1 for EARL 1 inlet temperature:
     (sensor value > 50) is system minor alarm
  threshold #2 for EARL 1 inlet temperature:
     (sensor value > 65) is system major alarm
Router>
```

The following example shows how to display the information about the connector parameters:

```
Router# show environment switch 1 connector
 chassis id 1 switch_id 1

  chassis connector rating: 1260.00 Watts (30.00 Amps @ 42V)

switch 1 module 1
  switch 1 module 1 connector rating: 2016.00 Watts (48.00 Amps @ 42V)
  switch 1 module 1 power consumption: 402.36 Watts ( 9.58 Amps @ 42V)
switch 1 module 2
  switch 1 module 2 connector rating: 1260.00 Watts (30.00 Amps @ 42V)
  switch 1 module 2 power consumption: 152.04 Watts ( 3.62 Amps @ 42V)
switch 1 module 3
  switch 1 module 3 connector rating: 2016.00 Watts (48.00 Amps @ 42V)
  switch 1 module 3 power consumption: 444.36 Watts (10.58 Amps @ 42V)
switch 1 module 4
  switch 1 module 4 connector rating: 2016.00 Watts (48.00 Amps @ 42V)
  switch 1 module 4 power consumption: 240.24 Watts ( 5.72 Amps @ 42V)
switch 1 module 5
  switch 1 module 5 connector rating: 1260.00 Watts (30.00 Amps @ 42V)
  switch 1 module 5 power consumption: 325.50 Watts ( 7.75 Amps @ 42V)
Router#
```

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The following example shows how to display the information about the cooling parameter:

```
Router# show environment switch 1 cooling
 chassis id 1 switch_id 1

switch 1 fan-tray 1:
  switch 1 fan-tray 1 type: WS-C6K-6SLOT-FAN
  switch 1 fan-tray 1 version: 1
  switch 1 fan-tray 1 fan-fail: OK
chassis per slot cooling capacity: 70 cfm
  switch 1 module 1 cooling requirement: 70 cfm
  switch 1 module 2 cooling requirement: 30 cfm
  switch 1 module 3 cooling requirement: 84 cfm
  switch 1 module 4 cooling requirement: 70 cfm
  switch 1 module 5 cooling requirement: 35 cfm
Router#
```

The following example shows how to **display the status of all FRU types:**

```
Router# show environment switch 1 status
backplane:
  operating clock count: 2
  operating VTT count: 3
switch 1 fan-tray 1:
  switch 1 fan-tray 1 type: WS-C6K-6SLOT-FAN
  switch 1 fan-tray 1 version: 1
  switch 1 fan-tray 1 fan-fail: OK
switch 1 VTT 1:
  switch 1 VTT 1 OK: OK
  switch 1 VTT 1 outlet temperature: 33C
switch 1 VTT 2:
  switch 1 VTT 2 OK: OK
  switch 1 VTT 2 outlet temperature: 33C
switch 1 VTT 3:
  switch 1 VTT 3 OK: OK
  switch 1 VTT 3 outlet temperature: 32C
switch 1 clock 1:
  switch 1 clock 1 OK: OK, switch 1 clock 1 clock-inuse: in-use
switch 1 clock 2:
  switch 1 clock 2 OK: OK, switch 1 clock 2 clock-inuse: not-in-use
switch 1 power-supply 1:
  switch 1 power-supply 1 fan-fail: OK
  switch 1 power-supply 1 power-input: AC low
  switch 1 power-supply 1 power-output-mo: low
  switch 1 power-supply 1 power-output-fa: OK
switch 1 power-supply 2:
  switch 1 power-supply 2 power-output-fa: failed
switch 1 module 3:
  switch 1 module 3 power-output-fail: OK
  switch 1 module 3 outlet temperature: 43C
  switch 1 module 3 inlet temperature: 32C
  switch 1 module 3 aux-1 temperature: 43C
  switch 1 module 3 aux-2 temperature: 32C
  switch 1 module 3 asic-1 temperature: 66C
  switch 1 module 3 asic-2 temperature: 60C
  switch 1 module 3 EARL outlet temperatu: 38C
  switch 1 module 3 EARL inlet temperatur: 33C
switch 1 module 4:
  switch 1 module 4 power-output-fail: OK
  switch 1 module 4 outlet temperature: 38C
  switch 1 module 4 inlet temperature: 27C
switch 1 module 5:
  switch 1 module 5 power-output-fail: OK
```

```
  switch 1 module 5 outlet temperature: 31C
  switch 1 module 5 inlet temperature: 25C
  switch 1 module 5 device-1 temperature: 37C
  switch 1 module 5 device-2 temperature: 37C
  switch 1 module 5 asic-1 temperature: 25C
  switch 1 module 5 asic-2 temperature: 26C
  switch 1 module 5 asic-3 temperature: 25C
  switch 1 module 5 asic-4 temperature: 26C
  switch 1 module 5 asic-5 temperature: 26C
  switch 1 module 5 asic-6 temperature: 26C
  switch 1 module 5 RP outlet temperature: 27C
  switch 1 module 5 RP inlet temperature: 27C
  switch 1 module 5 EARL outlet temperatu: 34C
  switch 1 module 5 EARL inlet temperatur: 29C
Router#
```

The following example shows how to display the recorded temperature information:

```
Router# show environment switch 1 temperature
 chassis id 1 switch_id 1

  switch 1 VTT 1 outlet temperature: 33C
  switch 1 VTT 2 outlet temperature: 33C
  switch 1 VTT 3 outlet temperature: 32C
  switch 1 module 3 outlet temperature: 43C
  switch 1 module 3 inlet temperature: 32C
  switch 1 module 3 aux-1 temperature: 43C
  switch 1 module 3 aux-2 temperature: 33C
  switch 1 module 3 asic-1 temperature: 66C
  switch 1 module 3 asic-2 temperature: 60C
  switch 1 module 3 EARL outlet temperatu: 38C
  switch 1 module 3 EARL inlet temperatur: 34C
  switch 1 module 4 outlet temperature: 38C
  switch 1 module 4 inlet temperature: 28C
  switch 1 module 5 outlet temperature: 31C
  switch 1 module 5 inlet temperature: 25C
  switch 1 module 5 device-1 temperature: 37C
  switch 1 module 5 device-2 temperature: 37C
  switch 1 module 5 asic-1 temperature: 25C
  switch 1 module 5 asic-2 temperature: 26C
  switch 1 module 5 asic-3 temperature: 25C
  switch 1 module 5 asic-4 temperature: 26C
  switch 1 module 5 asic-5 temperature: 26C
  switch 1 module 5 asic-6 temperature: 26C
  switch 1 module 5 RP outlet temperature: 27C
  switch 1 module 5 RP inlet temperature: 27C
  switch 1 module 5 EARL outlet temperatu: 34C
  switch 1 module 5 EARL inlet temperatur: 29C
Router#
```

Table 2 describes the fields that are shown in the **show environment status** command example.

Table 2   show environment status Command Output Fields

Field	Description
operating clock count	Physical clock count.
operating VTT count	Physical VTT count.
fan tray fan operation sensor	System fan tray failure status. The failure of the system fan tray is indicated as a minor alarm.

Table 2 *show environment status Command Output Fields (continued)*

Field	Description
VTT 1, VTT2, and VTT3	Status of the chassis backplane power monitors that are located on the rear of the chassis under the rear cover. Operation of at least two VTTs is required for the system to function properly. A minor system alarm is signaled when one of the three VTTs fails. A major alarm is signaled when two or more VTTs fail and the supervisor engine is accessible through the console port.
clock # clock-inuse	Clock status. Failure of either clock is considered to be a minor alarm.
power-supply # fan-fail	Fan failure. Fan failures on either or both (if any) power supplies are considered minor alarms.
power-input-fail	Power input failure status (none, AC high, AC low).
power-output-fail	Power output failure status (high, low).
outlet temperature	Exhaust temperature value.
inlet temperature	Intake temperature value.
device-1 and device-2 temperature	Two devices that measure the internal temperature on each indicated module. The temperature shown indicates the temperature that the device is recording. The devices are not placed at an inlet or an exit but are additional reference points.

show fabric (virtual switch)

To display the information about the crossbar fabric, use the **show fabric** command in EXEC mode.

show fabric switch *num* [**active** | {**channel-counters** | **errors** | **status** [*slot* | **all**]} | {**switching-mode** [**module** {*slot* | **all**}]} | {**utilization** [*slot* | **all**]}]

Syntax Description

switch *num*	Specifies the switch to access; valid values are 1 and 2.
active	(Optional) Displays the redundancy status for the Switch Fabric Module.
channel-counters	(Optional) Displays the fabric channel-counter information.
errors	(Optional) Displays the errors that are associated with the crossbar fabric; see the "Usage Guidelines" section for additional information.
status	(Optional) Displays the current status of the fabric channel.
slot	(Optional) Number of the slot.
all	(Optional) Displays the information for all modules using the crossbar fabric.
switching-mode	(Optional) Displays the module switching mode; see the "Usage Guidelines" section for additional information.
module *slot*	(Optional) Displays the switching mode for the specified slot.
module all	(Optional) Displays the switching mode for all installed modules.
utilization	(Optional) Displays the percentage utilization for each fabric channel.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If you specify *slot*, the information is displayed for the specified slot. If you specify **all**, the information for all slots using the crossbar fabric is displayed. If you do not specify *slot* or **all**, the display is the same as if you entered **all**.

To display all the related crossbar fabric information, enter the **show fabric** command without keywords.

A fabric channel is each connection between a module and the crossbar fabric module. Each module can have zero, one, or two fabric channels. The more fabric channels that a module has, the more overall bandwidth is available to the module.

The following errors are associated with the crossbar fabrics:

- Synchronization errors—General errors are the most common types of errors.

- Heartbeat errors—The supervisor engine sends out periodic heartbeat packets to each module using the crossbar fabric. If any of these modules or the crossbar fabric fail to detect heartbeat packets for a period of time, this error is reported.

- CRC errors—All packets crossing the crossbar fabric are CRC protected. If any of the ASICs between a module and the crossbar fabric module detect a CRC error, this error is reported.

The three types of fabric switching modes are as follows:

- Bus—Packets that travel across the traditional backplane and that are shared by all modules to be switched by the supervisor engine. Modules without the crossbar fabric connectors are restricted to this mode. The 48-port 10/100TX RJ-45 module is an example of this module type.

- Crossbar—Packets with headers only that travel across the traditional backplane to be switched by the supervisor engine and that travel across the crossbar fabric. The 16-port Gigabit Ethernet GBIC switching module is an example of this module type.

- dCEF—Packets that are switched by the module and that travel across the crossbar fabric. The 16-port Gigabit Ethernet GBIC switching module and the 16-port Gigabit Ethernet module are examples of this module type. The 16-port Gigabit Ethernet GBIC switching module can be in any of these three modes, but the 16-port Gigabit Ethernet module can only be in dCEF mode.

The threshold information is shown only when you enter the **no fabric switching-mode allow truncated** command.

In the **show fabric switching-mode** command output, the possible global switching modes are as follows:

- Flow-through (Bus)—Mode that the switch uses for traffic between nonfabric-enabled modules and for traffic between a nonfabric-enabled module and a fabric-enabled module. In this mode, all traffic passes between the local bus and the supervisor engine bus.

- Truncated—Mode that the switch uses for traffic between fabric-enabled modules when both fabric-enabled and nonfabric-enabled modules are 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.

- Compact—Mode that the switch uses 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.

Examples

The following example shows how to display the redundancy status of the Switch Fabric Module:

```
Router# show fabric switch 1 active
Active fabric card in slot 5
No backup fabric card in the system
Router#
```

The following example shows how to display the channel-counter information:

```
Router# show fabric switch 1 channel-counters
 slot channel    rxErrors    txErrors    txDrops   lbusDrops
    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           1           0          0           0
Router#
```

The following example shows how to display the errors that are associated with the crossbar fabric:

```
Router# show fabric switch 1 errors
Module errors:
slot      channel      crc      hbeat      sync      DDR sync
   1            0        0          0         0             0
   8            0        0          0         0             0
   8            0        0          0         0             0
   9            0        0          0         0             0

Fabric errors:
slot      channel      sync      buffer      timeout
   1            0        0          0          0
   8            0        0          0          0
   8            0        0          0          0
   9            0        0          0          0
Router#
```

The following example shows how to display the module switching mode:

```
Router# show fabric switch 1 switching-mode
Global switching mode is Compact
dCEF mode is not enforced for system to operate
Fabric module is not  required for system to operate
Modules are allowed to operate in bus mode
Truncated mode is allowed, due to presence of DFC, aCEF720 module

Module Slot      Switching Mode
    19                    dCEF
    20                Crossbar
    21                    dCEF
Router#
```

The following example shows how to display the fabric-channel status:

```
Router# show fabric switch 1 status
 slot   channel speed module    fabric    hotStandby  Standby  Standby
                      status    status       support  module   fabric
    3         0   20G    OK        OK     Y(not-hot)
    3         1   20G    OK        OK     Y(not-hot)
    4         0   20G    OK        OK     Y(not-hot)
    4         1   20G    OK        OK     Y(not-hot)
    5         0   20G    OK        OK     Y(not-hot)
Router#
```

The following example shows how to display the percentage utilizations for all fabric-enabled channels:

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

show idprom (virtual switch)

To display the IDPROMs for FRUs, use the **show idprom** command in EXEC mode.

show idprom switch *num* {**all** | *frutype* | **module** {*slot* | *slot*/*subslot* | *slot*/*bay-num*} [**clei** | **detail**]

Syntax Description

switch *num*	Specifies the switch to access; valid values are 1 and 2.
all	Displays the information for all FRU types.
frutype	Type of FRU to display information; see the "Usage Guidelines" section for valid values.
module	Displays the IDPROMs in the module.
slot	Slot number.
subslot	Subslot number.
bay-num	Bay number.
clei	(Optional) Displays the Common Language Equipment Identifiers (CLEI) in the IDPROM data.
detail	(Optional) Displays the details of the IDPROM data (verbose).

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Valid *frutypes* are as follows:

Valid values for the *frutype* are as follows:

- **all**—No arguments. Specifies all FRU types.
- **backplane**—No arguments. Specifies the backplane.
- **clock** *number*—Specifies the clock number; the valid values are 1 and 2.
- **earl** *slot*—See the "Usage Guidelines" section for valid values.
- **fan-tray** [*num*]—Specifies the fan tray, and optionally, you can specify the fan-tray number; the valid value is 1-1.
- **module** *slot*—See the "Usage Guidelines" section for valid values.
- **power-supply** *num*—Specifies the power supply; the valid values are 1 and 2.
- **rp** *slot*—See the "Usage Guidelines" section for valid values.

- **supervisor** *slot*—See the "Usage Guidelines" section for valid values.

- **vdb** *slot*—See the "Usage Guidelines" section for valid values.

- **vtt** *number*—1 to 3.

The *slot* argument designates the module and port number. Valid values for *slot* depend on the specified interface type and the chassis and module that are used. For example, if you specify a Gigabit Ethernet interface and have a 48-port 10/100BASE-T Ethernet module that is installed in a 13-slot chassis, valid values for the module number are from 1 to 13 and valid values for the port number are from 1 to 48.

Use the **show idprom backplane** command to display the chassis serial number.

Examples

The following example shows how to display IDPROM information for clock 1:

```
Router> show idprom switch 1 clock 1
IDPROM for clock, chassis 1, #1
  (FRU is 'Clock FRU')
  OEM String = 'Cisco Systems'
  Product Number = 'WS-C6000-CL'
  Serial Number = 'SMT03073115'
  Manufacturing Assembly Number = '73-3047-04'
  Manufacturing Assembly Revision = 'A1'
  Hardware Revision = 2.0
  Current supplied (+) or consumed (-) = 0.000A
Router>
```

The following example shows how to display IDPROM information for power supply 1:

```
Router> show idprom switch 1 power-supply 2
IDPROM for power-supply, chassis 1, #2
  (FRU is '110/220v AC power supply, 2500 watt')
  OEM String = 'Cisco Systems,Inc.'
  Product Number = 'WS-CAC-2500W'
  Serial Number = 'ART0902E08E'
  Manufacturing Assembly Number = '34-1535-04'
  Manufacturing Assembly Revision = 'A0'
  Hardware Revision = 1.2
  Current supplied (+) or consumed (-) = 27.46A
Router>
```

The following example shows how to display detailed IDPROM information for power supply 1:

```
Router# show idprom switch 1 power-supply 2 detail
IDPROM for power-supply, chassis 1, #2
IDPROM image:

  (FRU is '110/220v AC power supply, 2500 watt')

IDPROM image block #0:

  block-signature = 0xABAB, block-version = 1,
  block-length = 144, block-checksum = 4634

  *** common-block ***
  IDPROM capacity (bytes) = 256  IDPROM block-count = 2
  FRU type = (0xAB01,0x18)
  OEM String = 'Cisco Systems,Inc.'
  Product Number = 'WS-CAC-2500W'
  Serial Number = 'ART0902E08E'
  Manufacturing Assembly Number = '34-1535-04'
  Manufacturing Assembly Revision = 'A0'
  Manufacturing Assembly Deviation = ''
```

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```
  Hardware Revision = 1.2
  Manufacturing bits = 0x0  Engineering bits = 0x0
  SNMP OID = 9.12.3.1.6.24
  Power Consumption = 2746 centiamperes    RMA failure code = 0-0-0-0
  *** end of common block ***

IDPROM image block #1:

  block-signature = 0xAB01, block-version = 1,
  block-length = 20, block-checksum = 614

  *** power supply block ***
  feature_bits =   00000000 00000000
  rated current at 110v: 2746    rated current at 220v:  5550   (centiamperes)
  CISCO-STACK-MIB SNMP OID = 30
  *** end of power supply block ***

End of IDPROM image
Router#
```

The following example shows how to display IDPROM information for the backplane:

```
Router# show idprom switch 1 backplane
IDPROM for backplane, chassis 1, #1
  (FRU is 'Catalyst 6500 6-slot backplane')
  OEM String = 'Cisco Systems'
  Product Number = 'WS-C6506'
  Serial Number = 'SAL08486GNS'
  Manufacturing Assembly Number = '73-3436-03'
  Manufacturing Assembly Revision = 'B0'
  Hardware Revision = 3.0
  Current supplied (+) or consumed (-) =  -
Router#
```

The following example shows how to display the CLEI in the IDPROM of a specific module:

```
Router# show idprom switch 1 module 1 clei
SW#   FRU             PID                  VID SN          CLEI
----- --------------- -------------------- --- ----------- ----------
1     module #1       WS-X6704-10GE            SAD074303FC CNS9KK0AAB
Router#
```

show interfaces (virtual switch)

To display traffic that is seen by a specific interface, use the **show interfaces** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*]

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2.
/mod	Module number.
/port	Port number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Statistics are collected on a per-VLAN basis for Layer 2-switched packets and Layer 3-switched packets. Statistics are available for both unicast and multicast traffic. The Layer 3-switched packet counts are available for both ingress and egress directions. The per-VLAN statistics are updated every 5 seconds.

In some cases, you might see a difference in the duplex mode that is displayed between the **show interfaces (virtual switch)** command and the **show running-config switch (virtual switch)** command. In this case, the duplex mode that is displayed in the **show interfaces (virtual switch)** command is the actual duplex mode that the interface is running. The **show interfaces (virtual switch)** command shows the operating mode for an interface, while the **show running-config switch (virtual switch)** command shows the configured mode for an interface.

If you do not specify an interface, the information for all interfaces is displayed.

The output of the **show interfaces GigabitEthernet** command displays an extra 4 bytes for every packet that is sent or received. The extra 4 bytes are the Ethernet frame CRC in the input and output byte statistics.

Examples   The following example shows how to display traffic for a specific interface:

```
Router# show interfaces GigabitEthernet switch 1/3/3
GigabitEthernet1/3/3 is up, line protocol is up (connected)
  Hardware is C6k 1000Mb 802.3, address is 000f.2305.49c0 (bia 000f.2305.49c0)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID  1., loopback not set
  Keepalive set (10 sec)
  Full-duplex, 1000Mb/s, media type is LH
  input flow-control is off, output flow-control is on
  Clock mode is auto
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:19, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
  L2 Switched: ucast: 360 pkt, 23040 bytes - mcast: 0 pkt, 0 bytes
  L3 in Switched: ucast: 0 pkt, 0 bytes - mcast: 0 pkt, 0 bytes mcast
  L3 out Switched: ucast: 0 pkt, 0 bytes mcast: 0 pkt, 0 bytes
     437 packets input, 48503 bytes, 0 no buffer
     Received 76 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     86 packets output, 25910 bytes, 0 underruns
     0 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier, 0 PAUSE output
     0 output buffer failures, 0 output buffers swapped out
Router#
```

Related Commands

Command	Description
interface (virtual switch)	Selects an interface to configure and enters the interface configuration mode.

show interfaces accounting (virtual switch)

To display the number of packets of each protocol type that have been sent through all configured interfaces, use the **show interfaces accounting** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **accounting**

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2.
/mod	Module number.
/port	Port number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Note The Pkts Out and Chars Out fields display IPv6 packet counts only. The Pkts In and Chars In fields display both IPv4 and IPv6 packet counts, except for tunnel interfaces. For tunnel interfaces, the IPv6 input packets are counted as IPv6 packets only.

If you do not specify an interface, the information for all interfaces is displayed.

The port channels from 257 to 282 are internally allocated and are not supported.

If you do not enter any keywords, all counters for all modules are displayed.

Examples

The following example shows how to display the number of packets of each protocol type that have been sent through all configured interfaces:

```
Router# show interfaces gigabitethernet 1/5/2 accounting
GigabitEthernet1/5/2
Protocol Pkts In Chars In Pkts Out Chars Out
IP       50521   50521000 0        0
DEC MOP  0       0        1        129
CDP      0       0        1        592
IPv6     11      834      96       131658
Router#
```

Table 3 describes the fields that are shown in the example.

Table 3   show interfaces accounting Command Output Fields

Field	Description
Protocol	Protocol that is operating on the interface.
Pkts In	Number of IPv4 packets received for the specified protocol.
Chars In	Number of IPv4 characters received for the specified protocol.
Pkts Out	Number of hardware-switched IPv6 packets transmitted for the specified protocol.
Chars Out	Number of IPv6 characters transmitted for the specified protocol.

show interfaces capabilities (virtual switch)

To display the interface capabilities, use the **show interfaces capabilities** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **capabilities**

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2.
/mod	Module number.
/port	Port number.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   If you do not specify an interface, the information for all interfaces is displayed.

Examples   The following example shows how to display the interface capabilities for a module:

```
Router# show interfaces gigabitethernet 1/2/5 capabilities
GigabitEthernet1/2/5
  Model:                WS-X6516A-GBIC
  Type:                 unknown (4)
  Speed:                1000
  Duplex:               full
  Trunk encap. type:    802.1Q,ISL
  Trunk mode:           on,off,desirable,nonegotiate
  Channel:              yes
  Broadcast suppression: percentage(0-100)
  Flowcontrol:          rx-(off,on,desired),tx-(off,on,desired)
  Membership:           static
  Fast Start:           yes
  QOS scheduling:       rx-(1p1q4t), tx-(1p2q2t)
  QOS queueing mode:    rx-(cos), tx-(cos)
  CoS rewrite:          yes
  ToS rewrite:          yes
  Inline power:         no
  Inline power policing: no
```

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```
      SPAN:                 source/destination
      UDLD                  yes
      Link Debounce:        yes
      Link Debounce Time:   yes
      Ports on ASIC:        1-8
      Remote switch uplink: yes
      Dot1x:                yes
      Port-Security:        yes
  Router#
```

show interfaces counters (virtual switch)

To display the traffic that the physical interface sees, use the **show interfaces counters** command in EXEC mode.

> **show interfaces** [*interface switch-num*/*mod*/*port*] **counters** [**errors** | **etherchannel** |
> **protocol status** | **storm-control**]

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.
errors	(Optional) Displays the interface-error counters.
etherchannel	(Optional) Displays information about the EtherChannel interface.
protocol status	(Optional) Displays information about the current status of the enabled protocols.
storm-control	(Optional) Displays the discard count and the level settings for each mode.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

The **show interfaces counters** command displays the number of all of the packets arriving and includes the number of packets that may be dropped by the interface due to the storm-control settings. To display the total number of dropped packets, you can enter the **show interfaces counters storm-control** command.

The **show interfaces counters storm-control** command displays the discard count and the level settings for each mode. The discard count is a total of all three modes.

If you do not enter any keywords, all counters for all modules are displayed.

If you do not specify an interface, the information for all interfaces is displayed.

When you enter the **show interfaces** *interface* **counters etherchannel** command, follow these guidelines:

- If *interface* specifies a physical port, the command displays the message "Etherchnl not enabled on this interface."

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- If *interface* is omitted, the command displays the counters for all port channels (in the system) and for their associated physical ports.

- If *interface* specifies a port channel, the command displays the counters for the port channel and all of the physical ports that are associated with it. In addition, when you enter the command specifying the primary aggregator in a Link Aggregation Control Protocol (LACP) port channel with multiple aggregators, the output includes the statistics for all of the aggregators in the port channels and for the ports that are associated with them.

Examples   The following example shows how to display the error counters for a specific interface:

```
Router# show interfaces gigabitethernet 2/4/47 counters errors

Port            Align-Err     FCS-Err    Xmit-Err    Rcv-Err UnderSize OutDiscards
Gi2/4/47                0           0           0          0         0           0

Port            Single-Col Multi-Col  Late-Col Excess-Col Carri-Sen     Runts    s
Gi2/4/47                 0         0         0          0         0         0    0

Port            SQETest-Err Deferred-Tx IntMacTx-Err IntMacRx-Err Symbol-Err
Gi2/4/47                  0           0            0            0          0
Router#
```

The following example shows how to display traffic that is seen by a specific interface:

```
Router# show interfaces gigabitethernet 1/2/5 counters

Port             InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Gi1/2/5                 0              0              0              0
Port            OutOctets   OutUcastPkts   OutMcastPkts   OutBcastPkts
Gi1/2/5                 0              0              0              0
Router#
```

The following example shows how to display the counters for all port channels (in the system) and their associated physical ports:

```
Router# show interfaces counters etherchannel
Port               InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Po1                       0              0              0              0
Po3                       0              0              0              0
Po10            16341138343       77612803       12212915       14110863
Gi1/4/1         15628478622       77612818        7525970       14110865
Gi1/4/2           712662881              0        4686951              5
Po20            33887345029       88483183       11506653       14101212
Gi2/4/1         33326378013       88491521        7177393       14101663
Gi2/4/2           562904837              0        4330030              6

Port              OutOctets   OutUcastPkts   OutMcastPkts   OutBcastPkts
Po1                       0              0              0              0
Po3                       0              0              0              0
Po10            33889238079       14101204       99999327              0
Gi1/4/1         33326354634       14101205       95669326              0
Gi1/4/2           562904707              7        4330029              0
Po20            16338422056       14353951       89573339              0
Gi2/4/1         15628501864       14232410       85017290              0
Gi2/4/2           712663011         121541        4565416              0
Router#
```

The following example shows how to display the counters for all port channels (in the system) and their associated physical ports in Cisco IOS Release 12.2(50)SY and later releases:

```
Router# show interfaces counters etherchannel
Port              InOctets    InUcastPkts   InMcastPkts   InBcastPkts
Po1                      0             0             0             0
Po3                      0             0             0             0
Po10           16341138343      77612803      12212915      14110863
Gi1/4/1        15628478622      77612818       7525970      14110865
Gi1/4/2          712662881             0       4686951             5
Po20           33887345029      88483183      11506653      14101212
Gi2/4/1        33326378013      88491521       7177393      14101663
Gi2/4/2          562904837             0       4330030             6
Router#
```

The following example shows how to display the protocols enabled for a specific interface:

```
Router# show interfaces gigabitethernet 1/2/5 counters protocol status
Protocols allocated:
 GigabitEthernet1/2/5: Other, IP
Router#
```

The following example shows how to display the discard count and the level settings for each mode for a specific interface:

```
Router# show interfaces gigabitethernet 1/2/5 counters storm-control

Port         UcastSupp %     McastSupp %     BcastSupp %   TotalSuppDiscards
Gi1/2/5          100.0           100.0           100.0                   0
Router#
```

Related Commands

Command	Description
clear counters	Clears the interface counters.

show interfaces debounce (virtual switch)

To display the status and configuration for the debounce timer, use the **show interfaces debounce** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **debounce**

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If you do not specify an interface, the information for all interfaces is displayed.

Examples

The following example shows how to display the debounce configuration of an interface:

```
Router# show interfaces GigabitEthernet 1/2/5 debounce
Port         Debounce time    Value(ms)
Gi1/2/5      disable
Router#
```

Related Commands

Command	Description
link debounce	Enables the debounce timer on an interface.

show interfaces description (virtual switch)

To display a description and a status of an interface, use the **show interfaces description** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **description**

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   If you do not specify an interface, the information for all interfaces is displayed.

Examples   The following example shows how to display the information for all interfaces:

```
Router# show interfaces gigabitethernet 1/2/5 description
Interface                 Status         Protocol Description
Gi1/2/5                   admin down     down
Router#
```

Related Commands

Command	Description
description	Includes a specific description about the DSP interface.

show interfaces flowcontrol (virtual switch)

To display flow-control information, use the **show interfaces flowcontrol** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **flowcontrol**

Syntax Description		
	interface	(Optional) Interface type.
	switch-num	Switch number; valid values are 1 and 2
	/mod	Module number.
	/port	Port number.

Command Default This command has no default settings.

Command Modes EXEC (>)

Command History	Release	Modification
	12.2(33)SXH1	Support for this command was introduced.
	12.2(50)SY	Support for this command was introduced.
	15.0(1)SY	Support for this command was introduced.

Usage Guidelines If you do not specify an interface, the information for all interfaces is displayed.

Examples The following example shows how to display flow-control information for a specific interface:

```
Router# show interfaces gigabitethernet 1/2/5 flowcontrol

Port    Send    FlowControl Receive FlowControl RxPause TxPause
        admin   oper        admin   oper
------- -------- -------- -------- -------- ------- -------
Gi1/2/5 desired  off      off      off      0       0
Router#
```

Table 4 describes the fields that are shown in the example.

Table 4   show port flowcontrol Command Output Fields

Field	Description
Port	Interface type and module and port number.
Send admin	Flow-control operation for admin state. On indicates that the local port is allowed to send pause frames to remote ports, off indicates that the local port is prevented from sending pause frames to remote ports, and desired indicates predictable results whether a remote port is set to **receive on**, **receive off**, or **receive desired**.

Table 4   show port flowcontrol Command Output Fields (continued)

Field	Description
Send oper	Current flow-control operation. On indicates that the local port is allowed to send pause frames to remote ports, off indicates that the local port is prevented from sending pause frames to remote ports, and desired indicates predictable results whether a remote port is set to **receive on**, **receive off**, or **receive desired**.
Receive admin	Flow-control operation for admin state. On indicates that the local port is allowed to send pause frames to remote ports, off indicates that the local port is prevented from sending pause frames to remote ports, and desired indicates predictable results whether a remote port is set to **send on**, **send off**, or **send desired**.
Receive oper	Current flow-control operation. On indicates that the local port is allowed to send pause frames to remote ports, off indicates that the local port is prevented from sending pause frames to remote ports, and desired indicates predictable results whether a remote port is set to **send on**, **send off**, or **send desired**.
RxPause	Number of pause frames that are received.
TxPause	Number of pause frames that are transmitted.

Related Commands

Command	Description
flowcontrol	Configures a port to send or receive pause frames.

show interfaces private-vlan mapping (virtual switch)

To display the information about the private VLAN (PVLAN) mapping for VLAN switched virtual interfaces (SVIs), use the **show interfaces private-vlan mapping** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **private-vlan mapping**

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

This command displays SVI information only.

If you do not specify an interface, the information for all interfaces is displayed.

Examples

The following example shows how to display the information about the PVLAN mapping for a specific interface:

```
Router# show interfaces gigabitethernet 1/4/48 private-vlan mapping
Interface Secondary VLAN Type
--------- -------------- -----------------
gi1/4/48  301            community
Router#
```

Related Commands

Command	Description
private-vlan	Configures PVLANs and the association between a PVLAN and a secondary VLAN.
private-vlan mapping	Creates a mapping between the primary and the secondary VLANs so that both VLANs share the same primary VLAN SVI.

show interfaces status (virtual switch)

To display the interface status or a list of interfaces in an error-disabled state on local area network (LAN) ports only, use the **show interfaces status** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **status** [**err-disabled** | **inactive**]

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.
err-disabled	(Optional) Displays the LAN ports in an error-disabled state.
inactive	(Optional) Displays the interface inactive state.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If you do not specify an interface, the information for all interfaces is displayed.

To find out if an interface is inactive, enter the **show interfaces status** command in EXEC mode. If the interface is inactive, the Status field displays "inactive." If the port is not inactive, the Status field displays "none."

To find the packet and byte count, you can enter the **show interfaces counters (virtual switch)** command or the **show interfaces** *interface interface-number* **status** command in EXEC mode. The **show interfaces counters (virtual switch)** command is the preferred command to use. In some cases, the packet and byte count of the **show interfaces** *interface interface-number* **status** command is the preferred command.

Examples

The following example shows how to display the status of all interfaces:

```
Router# show interfaces status

Port          Name              Status       Vlan       Duplex  Speed Type
Te1/3/1                         notconnect   routed       full    10G No Connecr
Te1/3/2                         notconnect   routed       full    10G No Connecr
Te1/3/3                         notconnect   routed       full    10G No Connecr
Te1/3/4                         notconnect   routed       full    10G No Connecr
```

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```
Te1/3/5                           notconnect  routed      full   10G No Connecr
Te1/3/6                           notconnect  routed      full   10G No Connecr
Te1/3/7                           notconnect  routed      full   10G No Connecr
Te1/3/8                           notconnect  routed      full   10G No Connecr
Gi1/4/1                           connected   routed    a-full a-1000 10/100/10T
Gi1/4/2                           connected   routed    a-full a-1000 10/100/10T
Gi1/4/3                           disabled    routed      auto   auto 10/100/10T
.
.
.
Gi2/4/48                          disabled    routed      auto   auto 10/100/10T
Gi2/5/1                           disabled    routed      full   1000 No Transcr
Gi2/5/2                           connected   routed    a-full  a-100 10/100/10T
Router#
```

The following example shows how to display the packet and byte count of a specific LAN port:

```
Router# show interfaces gigabitethernet 2/5/2 status
Gi2/5/2
Switching path    Pkts In    Chars In    Pkts Out   Chars Out
         Processor      17       1220         20        2020
        Route cache      0          0          0           0
    Distributed cache   17       1220  206712817  2411846570
            Total        34       2440  206712837  2411848590
Router#
```

The following example shows how to display the status of the interfaces that are in an error-disabled state:

```
Router# show interfaces status err-disabled

Port    Name             Status      Reason
Gi2/5/1                   notconnect  link-flap

informational error message when the timer expires on a cause
--------------------------------------------------------------

5d04h:%PM-SP-4-ERR_RECOVER:Attempting to recover from link-flap err-disable state on
Gi2/5/1
Router#
```

Related Commands	Command	Description
	errdisable detect cause	Enables the error-disable detection.
	show errdisable recovery	Displays the information about the error-disable recovery timer.

show interfaces summary (virtual switch)

To display a summary of statistics for all interfaces that are configured on a networking device, use the **show interfaces summary** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **summary** [**vlan**]

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/*mod*	Module number.
/*port*	Port number.
vlan	(Optional) Displays the total number of VLAN interfaces.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Separate counters for subinterfaces are not maintained and are not displayed in the **show interfaces summary** output.

If you do not specify an interface, the information for all interfaces is displayed.

Examples

The following example shows how to display a summary of statistics for all interfaces that are configured on a networking device:

```
Router# show interfaces summary
*: interface is up
 IHQ: pkts in input hold queue     IQD: pkts dropped from input queue
 OHQ: pkts in output hold queue    OQD: pkts dropped from output queue
 RXBS: rx rate (bits/sec)          RXPS: rx rate (pkts/sec)
 TXBS: tx rate (bits/sec)          TXPS: tx rate (pkts/sec)
 TRTL: throttle count

  Interface             IHQ   IQD   OHQ   OQD   RXBS  RXPS   TXBS TXPS TRTL
 -----------------------------------------------------------------------
  Vlan1                  0     0     0     0     0     0      0    0    0
  TenGigabitEthernet1/1/1 0    0     0     0     0     0      0    0    0
  TenGigabitEthernet1/1/2 0    0     0     0     0     0      0    0    0
  GigabitEthernet1/2/1   0     0     0     0     0     0      0    0    0
  .
```

```
      .
      .
Router#
```

The following example shows how to display the total number of VLAN interfaces:

```
Router# show interfaces summary vlan
Total number of Vlan interfaces: 7
Vlan interfaces configured:
1,5,20,2000,3000-3001,4000
Router#
```

show interfaces switchport (virtual switch)

To display the administrative and operational status of a switching (Layer 2) port, use the **show interfaces switchport** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **switchport** [**backup** | **brief**]

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.
backup	(Optional) Displays Flexlink pair information.
brief	(Optional) Displays a brief summary of information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If you do not specify an interface, the information for all interfaces is displayed.

Examples

The following example shows how to display the switchport configuration of a specific interface:

```
Router# show interfaces gigabitethernet 2/4/19 switchport
Name: Gi2/4/19
Switchport: Enabled
Administrative Mode: dynamic desirable
Operational Mode: down
Administrative Trunking Encapsulation: negotiate
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Administrative Native VLAN tagging: enabled
Operational Native VLAN tagging: disabled
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Operational private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
```

```
Capture Mode Disabled
Capture VLANs Allowed: ALL

Unknown unicast blocked: disabled
Unknown multicast blocked: disabled

Router#
```

The following example shows how to display all Flexlink pairs:

```
Router# show interfaces switchport backup
Switch Backup Interface Pairs:
Active Interface        Backup Interface        State
------------------------------------------------------------------
GigabitEthernet1/3/1    GigabitEthernet1/4/1    Active Up/Backup Standby
GigabitEthernet1/5/1    GigabitEthernet1/5/2    Active Down/Backup Up
GigabitEthernet1/3/2    GigabitEthernet1/5/4    Active Standby/Backup Up
Router#
```

The following example shows how to display a Flexlink pair for a specific interface:

```
Router# show interfaces gigabitethernet 1/4/1 switchport backup
Switch Backup Interface Pairs:
Active Interface        Backup Interface        State
------------------------------------------------------------------
GigabitEthernet1/4/1    GigabitEthernet1/3/1    Active Up/Backup Standby
Router#
```

The following example shows how to display a brief summary of information:

```
Router# show interfaces switchport brief
 Port     Status     Op.Mode  Op.Encap Channel-id Vlan
 Gi2/4/1 disabled    none     native   --         1     (default )
Router#
```

show interfaces transceiver (virtual switch)

To display information about the optical transceivers that have digital optical monitoring (DOM) enabled, use the **show interfaces transceiver** command in privileged EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **transceiver** [**detail** | **supported-list** | {**switch** *switch-num*/*mod*/*port*} | **threshold table** | **threshold violations**]

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.
detail	(Optional) Displays detailed information about the interface transceiver.
supported-list	(Optional) Displays the supported transceivers
switch	(Optional) Specifies the interface.
threshold table	(Optional) Displays information about the interface transceiver alarm and warning threshold table.
threshold violations	(Optional) Displays the interface transceiver threshold information.

Command Default This command has no default settings.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines If you do not specify an interface, the information for all interfaces is displayed. The **switch** *switch-num*/*mod*/*port* keyword and arguments do not appear if you specify an interface.

After a transceiver is inserted, the software waits approximately 10 seconds before reading the diagnostic monitoring information. If you enter the **show interfaces transceiver** command before the software has read the diagnostic monitoring information, the following message is displayed:

```
Waiting for diagnostic monitoring information to settle down.
Please try again after a few seconds.
```

Wait a few seconds and reenter the **show interfaces transceiver** command.

Examples   The following example shows how to list all supported transceivers:

```
Router# show interface transceiver supported-list
Transceiver Type          Cisco p/n min version
                              supporting DOM

------------------        ------------------------

    DWDM GBIC             ALL
    DWDM SFP              ALL
    RX only WDM GBIC      ALL
    DWDM XENPAK           ALL
    DWDM X2               ALL
    DWDM XFP              ALL
    CWDM GBIC             NONE
    CWDM X2               ALL
    CWDM XFP              ALL
    XENPAK ZR             ALL
    X2 ZR                 ALL
    XFP ZR                ALL
    Rx_only_WDM_XENPAK    ALL
    XENPAK_ER             10-1888-03
    X2_ER                 ALL
    XFP_ER                ALL
    XENPAK_LR             10-1838-04
    X2_LR                 ALL
    XFP_LR                ALL
    XENPAK_LW             ALL
    X2_LW                 ALL
    XFP_LW                NONE
    XENPAK SR             NONE
    X2 SR                 ALL
    XFP SR                ALL
    XENPAK LX4            NONE
    X2 LX4                NONE
    XFP LX4               NONE
    XENPAK CX4            NONE
    X2 CX4                NONE
    SX GBIC               NONE
    LX GBIC               NONE
    ZX GBIC               NONE
    CWDM_SFP              ALL
    Rx_only_WDM_SFP       NONE
    SX_SFP                ALL
    LX_SFP                ALL
    ZX_SFP                ALL
    SX SFP                NONE
    LX SFP                NONE
    ZX SFP                NONE
    GIgE BX U SFP         NONE
    GigE BX D SFP         ALL
Router#
```

The following example shows how to display the threshold violations for all the transceivers:

```
Router# show interfaces transceiver threshold violations
        Rx: Receive, Tx: Transmit.
        DDDD: days, HH: hours, MM: minutes, SS: seconds

                             Time since Last Known
             Time in slot    Threshold Violation    Type(s) of Last Known
        Port (DDDD:HH:MM:SS) (DDDD:HH:MM:SS)         Threshold Violation(s)
        ------- --------------- --------------------- ----------------------
        Gi1/1/1  0000:00:03:41   Not applicable       Not applicable
        Gi1/2/1  0000:00:03:40   0000:00:00:30        Tx bias high warning
                                                      50.5 mA >  40.0 mA
                                 0000:00:00:30        Tx power low alarm
                                                      -17.0 dBm <  -0.5 dBm
        Gi1/2/2  0000:00:03:40   Not applicable       Not applicable
Router#
```

The following example shows how to display information about the interface transceiver alarm and warning threshold table:

```
Router# show interfaces transceiver threshold table
             Optical Tx      Optical Rx      Temp    Laser Bias    Voltage
                                                     current

             -------------   -------------   ------  ------------  ---------

 DWDM GBIC
Min1          -0.50           -28.50          0       N/A           4.50
Min2          -0.30           -28.29          5       N/A           4.75
Max2           3.29            -6.69          60      N/A           5.25
Max1           3.50            6.00           70      N/A           5.50
 DWDM SFP
Min1          -0.50           -28.50          0       N/A           3.00
Min2          -0.30           -28.29          5       N/A           3.09
Max2           4.30            -9.50          60      N/A           3.59
Max1           4.50            9.30           70      N/A           3.70
 RX only WDM GBIC
Min1          N/A             -28.50          0       N/A           4.50
Min2          N/A             -28.29          5       N/A           4.75
Max2          N/A              -6.69          60      N/A           5.25
Max1          N/A             6.00            70      N/A           5.50
 DWDM XENPAK
Min1          -1.50           -24.50          0       N/A           N/A
Min2          -1.29           -24.29          5       N/A           N/A
Max2           3.29            -6.69          60      N/A           N/A
Max1           3.50            4.00           70      N/A           N/A
.
.
.
 GigE BX D SFP
Min1          N/A             N/A             0       N/A           N/A
Min2          N/A             N/A             0       N/A           N/A
Max2          N/A             N/A             0       N/A           N/A
Max1          N/A             N/A             0       N/A           N/A
Router#
```

The following example shows how to display the threshold violations for all transceivers on a specific interface:

```
Router# show interfaces gigabitethernet 1/2/1 transceiver threshold violations
        lo: low, hi: high, warn: warning
        DDDD: days, HH: hours, MM: minutes, SS: seconds

                              Time since Last Known
                Time in slot  Threshold Violation    Type(s) of Last Known
        Port    (DDDD:HH:MM:SS) (DDDD:HH:MM:SS)      Threshold Violation
        ------- -------------- ---------------------- ----------------------
        Gi1/2/1 0000:00:03:40   0000:00:00:30         Tx bias high warning
                                                       50.5 mA >  40.0 mA
                                0000:00:00:30         Tx power low alarm
                                                      -17.0 dBm <  -0.5 dBm
Router#
```

The following example shows how to display violations for the transceiver on a specific interface:

```
Router# show interfaces gigabitethernet1/2/1 transceiver threshold violations
        Rx: Receive, Tx: Transmit.
        DDDD: days, HH: hours, MM: minutes, SS: seconds

                              Time since Last Known
                Time in slot  Threshold Violation    Type(s) of Last Known
        Port    (DDDD:HH:MM:SS) (DDDD:HH:MM:SS)      Threshold Violation(s)
        ------- -------------- ---------------------- ----------------------
        Gi1/2/1 0000:00:03:40   0000:00:00:30         Tx bias high warning
                                                       50.5 mA >  40.0 mA
                                0000:00:00:30         Tx power low alarm
                                                      -17.0 dBm <  -0.5 dBm
Router#
```

show interfaces trunk (virtual switch)

To display the interface-trunk information, use the **show interfaces trunk** command in user EXEC or privileged EXEC mode.

show interfaces trunk [**module** *number* | **switch** *switch* | **vlan** *vlan*]

Syntax Description

module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for valid values.
switch *switch*	(Optional) Specifies the switch number.
vlan *vlan*	(Optional) Limits the display of switch port information to the specified VLAN. Range: 1 to 4094.

Command Default

This command has no default settings.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.2(33)SH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If you do not specify a keyword, only information for trunking ports is displayed.

The **module** *number* keyword and argument designate the module number and limit the display to interfaces on the module. Valid values depend on the chassis that is used. For example, if you have a 13-slot chassis, valid values for the module number are from 1 to 13.

Examples

This example shows how to display the interface-trunk information :

```
Router# show interfaces trunk

Port            Mode          Encapsulation  Status       Native vlan
Gi1/2/47        on            802.1q         trunking     1
Gi1/8/1         on            802.1q         trunking     1
Te2/3/6         on            802.1q         trunking     1
Po3             on            802.1q         trunking     1
Po6             on            802.1q         trunking     1
Po17            on            802.1q         trunking     1

Port            Vlans allowed on trunk
Gi1/2/47        41
Gi1/8/1         41
Te2/3/6         1-4094
```

```
Po3                     3
Po6                     1-40,42-4094
Po17                    1-4094

Port                    Vlans allowed and active in management domain
Gi1/2/47                41
Gi1/8/1                 41
Te2/3/6                 1-12,14-49,51-59,61-1001,4092-4094
Po3                     3
Po6                     1-12,14-40,42-49,51-59,61-1001,4092-4094
Po17                    1-12,14-49,51-59,61-1001,4092-4094

Port                    Vlans in spanning tree forwarding state and not pruned
Gi1/2/47                41
Gi1/8/1                 none
Te2/3/6                 1-12,14-49,51-59,61-1001,4092-4094
Po3                     none
Po6                     5-9,14-32,34-40,42-49,51-59,61

Router#
```

This example shows how to display the interface-trunk information for VLAN 1:

```
Router# show interfaces trunk vlan 1

Port            Mode            Encapsulation   Status          Native vlan
Gi1/2/47        on              802.1q          trunking        1
Gi1/8/1         on              802.1q          trunking        1
Te2/3/6         on              802.1q          trunking        1
Po3             on              802.1q          trunking        1
Po6             on              802.1q          trunking        1
Po17            on              802.1q          trunking        1

Port            Vlans allowed on trunk
Gi1/2/47        41
Gi1/8/1         41
Te2/3/6         1-4094
Po3             3
Po6             1-40,42-4094
Po17            1-4094

Port            Vlans allowed and active in management domain
Gi1/2/47        41
Gi1/8/1         41
Te2/3/6         1-12,14-49,51-59,61-1001,4092-4094
Po3             3
Po6             1-12,14-40,42-49,51-59,61-1001,4092-4094
Po17            1-12,14-49,51-59,61-1001,4092-4094

Port            Vlans in spanning tree forwarding state and not pruned
Gi1/2/47        41
Gi1/8/1         none
Te2/3/6         1-12,14-49,51-59,61-1001,4092-4094
Po3             none
Po6             Po6             5-9,14-32,34-40,42-49,51-59,61
Router#
```

Related Commands

Command	Description
show interfaces (virtual switch)	Displays the status and statistics for the interfaces in the chassis.

show interfaces unidirectional (virtual switch)

To display the operational state of an interface with a receive-only transceiver, use the **show interfaces unidirectional** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **unidirectiona**l

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If you do not specify an interface, the information for all interfaces is displayed.

Examples

The following example shows how to display the operational state of an interface with a receive-only transceiver:

```
Router# show interfaces gigabitethernet 1/5/2 unidirectional
Unidirectional configuration mode: send only
Unidirectional operational mode: receive only
CDP neighbour unidirectional configuration mode: off
Router#
```

Related Commands

Command	Description
show interfaces status (virtual switch)	Displays the interface status or a list of interfaces in an error-disabled state on LAN ports only.
unidirectional	Configures the software-based unidirectional Ethernet (UDE).

show interfaces vlan mapping (virtual switch)

To display the status of a VLAN mapping on a port, use the **show interfaces vlan mapping** command in EXEC mode.

show interfaces [*interface switch-num*/*mod*/*port*] **vlan mapping**

Syntax Description

interface	(Optional) Interface type.
switch-num	Switch number; valid values are 1 and 2
/mod	Module number.
/port	Port number.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   If you do not specify an interface, the information for all interfaces is displayed.

Examples   The following example shows how to list all of the VLAN mappings that are configured on a port and indicate whether such mappings are enabled or disabled on the port:

```
Router# show interfaces gigabitethernet 1/5/2 vlan mapping
State: enabled
Original VLAN Translated VLAN
------------- --------------
  1649          755
Router#
```

Related Commands

Command	Description
show vlan mapping	Registers a mapping of an 802.1Q VLAN to an Inter-Switch Link (ISL) VLAN.
switchport vlan mapping enable	Enables VLAN mapping per switch port.

show ip cache flow (virtual switch)

To display a summary of the NetFlow cache-flow entries, use the **show ip cache flow** command in EXEC mode.

show ip cache flow [**aggregation** *type*] [**switch** *num* **module** *num*]

Syntax Description		
	aggregation *type*	(Optional) Displays the configuration of a particular aggregation cache; see the "Usage Guidelines" section for valid values.
	switch *num*	(Optional) Specifies the switch number; valid values are 1 and 2.
	module *num*	Specifies the module number.

Command Default This command has no default settings.

Command Modes EXEC (>)

Command History	Release	Modification
	12.2(33)SXH1	Support for this command was introduced.
	12.2(50)SY	Support for this command was introduced.
	15.0(1)SY	Support for this command was introduced.

Usage Guidelines If you do not specify switch number, the information for all interfaces is displayed.

Valid values for **aggregation** *type* are as follows:

- **as**—AS aggregation cache
- **as-tos**—AS TOS aggregation cache
- **bgp-nexthop-tos**—BGP next hop TOS aggregation cache
- **destination-prefix**—Destination Prefix aggregation cache
- **destination-prefix-tos**—Destination Prefix TOS aggregation cache
- **mp**—Monitor Prefixes aggregation cache
- **prefix**—Source/Destination Prefix aggregation cache
- **prefix-port**—Source/Destination Prefix port aggregation cache
- **prefix-tos**—Source/Destination Prefix TOS aggregation cache
- **protocol-port**—Protocol and port aggregation cache
- **protocol-port-tos**—Protocol, port, TOS aggregation cache
- **source-prefix**—Source Prefix aggregation cache
- **source-prefix-tos**—Source Prefix TOS aggregation cache

Examples   The following example shows how to display a summary of the NetFlow cache-flow entries:

```
Router# show ip cache flow
--------------------------------------------------------------------------------

Displaying software-switched flow entries on the MSFC in Module 37:

IP packet size distribution (0 total packets):
   1-32   64   96  128  160  192  224  256  288  320  352  384  416  448  480
   .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000

    512  544  576 1024 1536 2048 2560 3072 3584 4096 4608
   .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000

IP Flow Switching Cache, 0 bytes
  0 active, 0 inactive, 0 added
  0 ager polls, 0 flow alloc failures
  Active flows timeout in 30 minutes
  Inactive flows timeout in 15 seconds
  last clearing of statistics never
Protocol         Total    Flows   Packets Bytes  Packets Active(Sec) Idle(Sec)
--------         Flows     /Sec     /Flow  /Pkt     /Sec     /Flow     /Flow

SrcIf          SrcIPaddress   DstIf        DstIPaddress   Pr SrcP DstP  Pkts

--------------------------------------------------------------------------------

Displaying hardware-switched flow entries in the DFC in Module 19:

 SrcIf          SrcIPaddress   DstIf         DstIPaddress   Pr SrcP Dsts




Displaying hardware-switched flow entries in the DFC in Module 21:

 SrcIf          SrcIPaddress   DstIf         DstIPaddress   Pr SrcP Dsts

 --            0.0.0.0        ---           0.0.0.0        00 0000 000




Displaying hardware-switched flow entries in the DFC in Module 37:

 SrcIf          SrcIPaddress   DstIf         DstIPaddress   Pr SrcP Dsts

 --            0.0.0.0        ---           0.0.0.0        00 0000 000
Router#
```

Table 5 describes the fields in the flow-switching cache lines of the output.

Table 5   show ip cache flow Command Output Fields

Field	Description
IP packet size distribution	Two lines below this banner that show the percentage distribution of packets by size range. In this display, 55.4% of the packets fall in the size range of 33 to 64 bytes.
bytes	Number of bytes of memory that the NetFlow cache uses.
active	Number of active flows in the NetFlow cache at the time this command was entered.

Table 5   *show ip cache flow Command Output Fields (continued)*

Field	Description
inactive	Number of flow buffers that are allocated in the NetFlow cache but are not currently assigned to a specific flow at the time this command was entered.
added	Number of flows that were created since the start of the summary period.
ager polls	Number of times that the NetFlow code looked at the cache to expire entries (used by Cisco for diagnostics only).
flow alloc failures	Number of times that the NetFlow code tried to allocate a flow but could not.
Exporting flows to	IP address and UDP port number of the workstation to which flows are exported.
Exporting using source interface	Interface type that is used as the source IP address.
Version 5 flow records, peer-as	Exported packets that use version 5 format and the export statistics that include the peer AS for the source and destination. The number of records stored in the datagram is between 1 and 30 for version 5.
Active flows timeout in	Timeout period for active flows in the NetFlow cache.
flows exported in udp datagrams	Total number of flows that are exported and the total number of UDP datagrams that are used to export the flows to the workstation.
failed	Number of flows that could not be exported by the router because of output interface limitations.
last clearing of statistics	Standard time output (hh:mm:ss) since the **clear ip flow stats** command was executed. This time output changes to hours and days after the time exceeds 24 hours.

Table 6 describes the fields that are shown in the example.

Table 6   *show ip cache flow Command Output Fields—NetFlow Activity by Protocol*

Field	Description
Protocol	IP protocol and the well-known port number as described in RFC 1340.
Total Flows	Number of flows for this protocol since the last time that the statistics were cleared.
Flows/Sec	Average number of flows for this protocol seen per second; equal to total flows/number of seconds for this summary period.
Packets/Flow	Average number of packets observed for the flows seen for this protocol. Equal to total packets for this protocol/number of flows for this protocol for this summary period.
Bytes/Pkt	Average number of bytes observed for the packets seen for this protocol. Equal to total bytes for this protocol/total number of packets for this protocol for this summary period.
Packets/Sec	Average number of packets for this protocol per second. Equal to total packets for this protocol/total number of seconds for this summary period.

Table 6   show ip cache flow Command Output Fields—NetFlow Activity by Protocol (continued)

Field	Description
Active(Sec)/Flow	Sum of all the seconds from the first packet to the last packet of an expired flow (for example, TCP FIN, time-out, and so forth) in seconds/total flows for this protocol for this summary period.
Idle(Sec)/Flow	Sum of all the seconds from the last packet seen in each nonexpired flow for this protocol until the time this command was entered in seconds/total flows for this summary period.

Table 7 describes the fields that are shown in the example.

Table 7   show ip cache flow Command Output Fields—Current Flow

Field	Description
SrcIf	Internal port name for the source interface.
SrcIPaddress	Source-IP address for this flow.
DstIf	Router internal port name for the destination interface.
DstIPaddress	Destination-IP address for this flow.
Pr	IP protocol; for example, 6=TCP, 17=UDP, …. as defined in RFC 1340.
SrcP	Source port address, TCP/UDP "well known" port number, as defined in RFC 1340.
DstP	Destination-port address, TCP/UDP "well known" port number, as defined in RFC 1340.
Pkts	Number of packets observed for this flow.
B/Pkt	Average observed number of bytes per packet for this flow.
Active	Number of seconds between first and last packet of a flow.

Related Commands

Command	Description
ip flow-aggregation cache	Creates a flow-aggregation cache and enters the aggregation cache configuration mode.
ip-flow-cache entries	Changes the number of entries that are maintained in the NetFlow cache.
clear ip flow stats	Clears the NetFlow-switching statistics.

show ip cache verbose flow (virtual switch)

To display a detailed summary of NetFlow statistics, use the **show ip cache verbose flow** command in privileged EXEC mode.

show ip cache verbose flow [**aggregation** *type*] [**switch** *num* **module** *num*]

Syntax Description	

aggregation *type*	(Optional) Displays the configuration of a particular aggregation cache; see the "Usage Guidelines" section for valid values.
switch *num*	(Optional) Specifies the switch number; valid values are 1 and 2.
module *num*	Specifies the module number.

Command Default   This command has no default settings.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   If you do not specify switch number, the information for all interfaces is displayed.

Valid values for **aggregation** *type* are as follows:

- **as**—AS aggregation cache
- **as-tos**—AS TOS aggregation cache
- **bgp-nexthop-tos**—BGP nexthop TOS aggregation cache
- **destination-prefix**—Destination Prefix aggregation cache
- **destination-prefix-tos**—Destination Prefix TOS aggregation cache
- **mp**—Monitor Prefixes aggregation cache
- **prefix**—Source/Destination Prefix aggregation cache
- **prefix-port**—Source/Destination Prefix port aggregation cache
- **prefix-tos**—Source/Destination Prefix TOS aggregation cache
- **protocol-port**—Protocol and port aggregation cache
- **protocol-port-tos**—Protocol, port, TOS aggregation cache
- **source-prefix**—Source Prefix aggregation cache
- **source-prefix-tos**—Source Prefix TOS aggregation cache

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Use the **show ip cache verbose flow** command to display the flow record fields in the NetFlow cache in addition to the fields that are displayed with the **show ip cache flow** command. The values in the additional fields that are shown depend on the NetFlow features that are enabled and the flags that are set in the flow.

Note   The flags and the fields displayed vary from flow to flow.

When you configure the MPLS-aware NetFlow feature, you can use the **show ip cache verbose flow** command to display both the IP and MPLS portions of the MPLS flows in the NetFlow cache on a router module. To display only the IP portion of the flow record in the NetFlow cache when MPLS-aware NetFlow is configured, use the **show ip cache flow** command.

Examples   The following example shows how to display a detailed summary of NetFlow statistics:

```
Router# show ip cache verbose flow
-------------------------------------------------------------------------------

Displaying software-switched flow entries on the MSFC in Module 37:

IP packet size distribution (0 total packets):
   1-32   64   96  128  160  192  224  256  288  320  352  384  416  448  480
   .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000

    512  544  576 1024 1536 2048 2560 3072 3584 4096 4608
   .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000

IP Flow Switching Cache, 4456704 bytes
  0 active, 65536 inactive, 0 added
  0 ager polls, 0 flow alloc failures
  Active flows timeout in 30 minutes
  Inactive flows timeout in 15 seconds
IP Sub Flow Cache, 533192 bytes
  0 active, 16384 inactive, 0 added, 0 added to flow
  0 alloc failures, 0 force free
  1 chunk, 1 chunk added
  last clearing of statistics never
Protocol         Total    Flows   Packets Bytes  Packets Active(Sec) Idle(Sec)
--------         Flows    /Sec     /Flow /Pkt     /Sec     /Flow     /Flow

SrcIf          SrcIPaddress    DstIf        DstIPaddress    Pr TOS Flgs  Pkts
Port Msk AS                    Port Msk AS  NextHop                B/Pk  Active


-------------------------------------------------------------------------------

Router#
```

Table 8 describes the fields shown in the NetFlow cache lines of the display.

Table 8   show ip cache verbose flow Field Descriptions in the NetFlow Cache Display

Field	Description
bytes	Number of bytes of memory that are used by the NetFlow cache.
active	Number of active flows in the NetFlow cache at the time this command was entered.

Table 8   show ip cache verbose flow Field Descriptions in the NetFlow Cache Display (continued)

Field	Description
inactive	Number of flow buffers that are allocated in the NetFlow cache but that are not assigned to a specific flow at the time this command is entered.
added	Number of flows that were created since the start of the summary period.
ager polls	Number of times that the NetFlow code caused entries to expire (used by Cisco for diagnostics only).
flow alloc failures	Number of times that the NetFlow code tried to allocate a flow but could not.
last clearing of statistics	Standard time output (hh:mm:ss) since the **clear ip flow stats** privileged EXEC command was last executed. This time output changes to hours and days after the time exceeds 24 hours.

Table 9 describes the fields shown in the activity by the protocol lines of the display.

Table 9   show ip cache verbose flow Field Descriptions in Activity By Protocol Display

Field	Description
Protocol	IP protocol and the "well-known" port number. (Refer to http://www.iana.org, *Protocol Assignment Number Services*, for the latest RFC values.) **Note** Only a small subset of all protocols is displayed.
Total Flows	Number of flows for this protocol since the last time statistics were cleared.
Flows/Sec	Average number of flows for this protocol per second; equal to the total flows divided by the number of seconds for this summary period.
Packets/Flow	Average number of packets for the flows for this protocol; equal to the total packets for this protocol divided by the number of flows for this protocol for this summary period.
Bytes/Pkt	Average number of bytes for the packets for this protocol; equal to the total bytes for this protocol divided by the total number of packets for this protocol for this summary period.
Packets/Sec	Average number of packets for this protocol per second; equal to the total packets for this protocol divided by the total number of seconds for this summary period.
Active(Sec)/Flow	Number of seconds from the first packet to the last packet of an expired flow (for example, TCP connection close request [FIN], timeout, and so on) divided by the total flows for this protocol for this summary period.
Idle(Sec)/Flow	Number of seconds observed from the last packet in each nonexpired flow for this protocol until the time at which this command was entered divided by the total flows for this protocol for this summary period.

Table 10 describes the fields in the NetFlow record lines of the display.

Table 10   show ip cache verbose flow Field Descriptions in NetFlow Record Display

Field	Description
SrcIf	Interface on which the packet was received.
Port Msk AS	Source port number (displayed in hexadecimal format), IP address mask, and autonomous system number. This field is always set to 0 in MPLS flows.
SrcIPaddress	IP address of the device that transmitted the packet.
DstIf	Interface from where the packet was transmitted.
Port Msk AS	Destination port number (displayed in hexadecimal format), IP address mask, and autonomous system. This field is always set to 0 in MPLS flows.
DstIPaddress	IP address of the destination device.
NextHop	BGP next-hop address. This field is always set to 0 in the MPLS flows.
Pr	IP protocol "well-known" port number, displayed in hexadecimal format. (Refer to http://www.iana.org, *Protocol Assignment Number Services*, for the latest RFC values.)
TOS	Type of service, displayed in hexadecimal format.
B/Pk	Average number of bytes that are observed for the packets seen for this protocol.
Flgs	TCP flags, shown in hexadecimal format (result of bitwise OR of TCP flags from all packets in the flow).
Pkts	Number of packets in this flow.
Active	Time the flow has been active.
FO	Fragment offset.

Related Commands

Command	Description
ip flow-cache mpls label positions	Enables MPLS-aware NetFlow.
ip route-cache flow	Enables NetFlow switching for IP routing.
show ip cache flow	Displays a summary of the NetFlow cache-flow entries.

show mac-address-table (virtual switch)

To display the information about the Media Access Control (MAC)-address table, use the **show mac-address-table** command in privileged EXEC mode.

show mac-address-table [**switch** *num* [**module** *num*]]

show mac-address-table {**address** *mac-addr*} [**all** | {**interface** *interface*/*switch-num*/*slot*/*port*} | {**switch** *num* [**module** *num*]} | {**vlan** *vlan-id*}]

show mac-address-table aging-time [**vlan** *vlan-id*]

show mac-address-table aging-type routed mac

show mac-address-table count [{**switch** *num* **module** *num*} | {**vlan** *vlan-id*}]

show mac-address-table dynamic [{**address** *mac-addr*} | {**interface** *interface*/*switch-num*/*slot*/*port*} | {**switch** *num* [**module** *num*]} | {**vlan** *vlan-id*}]

show mac-address-table interface *interface*/*switch-num*/*slot*/*port* [**all** | {**interface** *interface*/*switch-num*/*slot*/*port*} | {**switch** *num* [**module** *num*]} | {**vlan** *vlan-id*}]

show mac-address-table limit [{**interface** *interface*/*switch-num*/*slot*/*port*} | {**switch** *num* [**module** *num*]} | {**vlan** *vlan-id*}]

show mac-address-table multicast [**count** | {{**igmp-snooping** | **mld-snooping**} [**count**]} | {**user** [**count**]} | {**vlan** *vlan-id*}]

show mac-address-table notification {**change** [**interface** *interface*/*switch-num*/*slot*/*port*] | **mac-move**}

show mac-address-table static [{**address** *mac-addr*} | {**interface** *interface*/*switch-num*/*slot*/*port*} | {**switch** *num* [**module** *num*]} | {**vlan** *vlan-id*}]

show mac-address-table synchronize statistics

show mac-address-table vlan *vlan-id* [**all** | {**switch** *num* [**module** *num*]}]

Syntax Description		
switch *num*	(Optional) Specifies the number of the switch; valid values are 1 and 2.	
module *num*	(Optional) Displays information about the MAC-address table for a specific DFC module.	
address *mac-addr*	Displays information about the MAC-address table for a specific MAC address; see the "Usage Guidelines" section for format guidelines.	
all	(Optional) Displays every instance of the specified MAC address in the forwarding table.	
interface *interface*	(Optional) Displays information about a specific interface type; possible valid values are **gigabitethernet** and **tengigabitethernet**.	
/switch-num	Switch number; valid values are 1 and 2.	
/slot	Module number.	
/port	Port number.	
vlan *vlan-id*	(Optional) Displays information for a specific VLAN only. Range: 1 to 4094.	

aging-time	Displays information about the MAC-address aging time.
aging-type	Displays the routed-MAC aging status.
count	Displays the number of entries that are currently in the MAC-address table.
dynamic	Displays information about the dynamic MAC-address table entries only.
limit	Displays MAC-usage information.
multicast	Displays information about the multicast MAC-address table entries only.
igmp-snooping	Displays the addresses learned by Internet Group Management Protocol (IGMP0 snooping.
mld-snooping	Displays the addresses learned by multicast listener discovery version 2 (MLDv2) snooping.
user	Displays the manually entered (static) addresses.
notification change	Displays the MAC notification feature parameters and history table.
notification mac-move	Displays the MAC-move notification status.
static	Displays information about the static MAC-address table entries only.
synchronize statistics	Displays information about the statistics collected on the switch processor/DFC.

Command Default This command has no default settings.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines If you do not specify a module number, the output of the **show mac-address-table** command displays information about the supervisor engine. To display information about the MAC-address table of the DFCs, you must enter the module number or the **all** keyword.

The **synchronize statistics** keywords are supported on the Supervisor Engine 720 and the Supervisor Engine 720-10GE only

The *mac-addr* is a 48-bit MAC address and the valid format is H.H.H.

The optional **module** *num* keyword and argument are supported only on Distributed Forwarding Card (DFC) modules. The **module** *num* keyword and argument designate the module number.

Valid values for *mac-group-address* are from 1 to 9.

The **count** keyword displays the number of multicast entries.

The **multicast** keyword displays the multicast MAC addresses (groups) in a VLAN or displays all statically installed or IGMP snooping-learned entries in the Layer 2 table.

The dynamic entries that are displayed in the Learn field are always set to Yes.

The **show mac-address-table limit** command output displays the following information:

- The current number of MAC addresses.
- The maximum number of MAC entries that are allowed.
- The percentage of usage.

The **show mac-address-table synchronize statistics** command output displays the following information:

- Number of messages processed at each time interval.
- Number of active entries sent for synchronization.
- Number of entries updated, created, ignored, or failed.

Examples

Note In a distributed EARL switch, the asterisk (*) indicates a MAC address that is learned on a port that is associated with this EARL.

The following example shows how to display MAC-address table information about the supervisor engine:

```
Router# show mac-address-table
Legend: * - primary entry
        age - seconds since last seen
        n/a - not available

  vlan    mac address     type     learn    age            ports
------+---------------+--------+-----+---------+------------------------
*  ---  0000.0000.aaaa   static  No         -    Switch
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
Router#
```

The following example shows how to display MAC-address table information for a specific MAC address:

```
Router# show mac-address-table address 0012.44d8.2800
Legend: * - primary entry
        age - seconds since last seen
        n/a - not available

  vlan   mac address      type    learn   age          ports
------+---------------+--------+-----+----------+-------------------------
switch 1 Module 3:
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
Supervisor switch 1 Module 6
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
switch 2 Module 2:
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
Supervisor switch 2 Module 5
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
*  ---  0012.44d8.2800   static  No         -    Router
Router#
```

The following example shows how to display the currently configured aging time for all VLANs:

```
Router# show mac-address-table aging-time
Vlan    Aging Time
----    ----------
*100      300
200     1000

Router#
```

The following example shows how to display the routed-MAC aging status:

```
Router# show mac-address-table aging-type routed-mac
 Routed MAC aging : enabled
Router#
```

The following example shows how to display the entry count for a specific slot:

```
Router# show mac-address-table count switch 1 module 3
MAC Entries for switch 1 module 3 :
Dynamic Address Count:              0
Static Address (User-defined) Count:  4
Total MAC Addresses In Use:          4
Total MAC Addresses Available:       98304
Router#
```

The following example shows how to display the dynamic MAC-address entries on a specific VLAN:

```
Router# show mac-address-table dynamic vlan 1
Legend: * - primary entry
age - seconds since last seen
n/a - not applicable
vlan     mac address      type    learn   age          ports
------+---------------+--------+-----+----------+-------------------------
* 1   0009.12e9.adc0   static  No    -          Router
Router#
```

The following example shows how to display the information about the MAC-address table for a specific interface:

```
Router# show mac-address-table interface gigabitethernet 1/6/45
Legend: * - primary entry
        age - seconds since last seen
        n/a - not available

  vlan    mac address     type    learn    age              ports
------+---------------+--------+-----+----------+-------------------------
*  45   00e0.f74c.842d  dynamic  Yes          5   Gi1/6/45
Router#
```

Note A leading asterisk (*) indicates entries from a MAC address that was learned from a packet coming from an outside device to a specific module.

The following example shows how to display the MAC notification parameters and history table for a specific interface:

```
Router# show mac-address-table notification change interface gigabitethernet 1/5/3
MAC Notification Feature is Disabled on the switch
Interface                MAC Added Trap MAC Removed Trap
--------------------     -------------- ----------------
GigabitEthernet1/5/3     Disabled       Disabled
Router#
```

The following example shows how to display the MAC-move notification status:

```
Router# show mac-address-table notification mac-move
MAC Move Notification: Enabled
Router#
```

The following example shows how to display all the static MAC-address entries:

```
Router# show mac-address-table static
Codes: * - primary entry

  vlan    mac address     type    learn qos           ports
------+---------------+--------+-----+---+-------------------------
*  ---  0001.6441.60ca    static  No    --  Router

Router#
```

The following example shows how to display the statistics for the synchronization feature:

```
Router# show mac-address-table synchronize statistics

MAC Entry Out-of-band Synchronization Feature Statistics:
---------------------------------------------------------

    Switch [1] Module [3]
    ---------------------

    Module Status:
Statistics collected from Switch/Module            :  1/3
Number of L2 asics in this module                  :  1

    Global Status:
Status of feature enabled on the switch            :  on
Default activity time                              :  160
Configured current activity time                   :  160
```

```
        Statistics from ASIC 0 when last activity timer expired:
        Age value in seconds from age byte register       : 0x0
        Current activity interval start time for seconds   : 0xE0
        Current activity interval end time for seconds     : 0x0
        Current inactive interval start time for seconds   : 0xC0
        Current inactive interval end time for seconds     : 0xE0
        Age value in minutes from age byte register       : 0xEA
        Current activity interval start time for minutes   : 0xE7
        Current activity interval end time for minutes     : 0xEA
        Current inactive interval start time for minutes   : 0xE4
        Current inactive interval end time for minutes     : 0xE7
        Age value in hours from age byte register         : 0x10
        Current activity interval start time for hours     : 0xF
        Current activity interval end time for hours       : 0x10
        Current inactive interval start time for hours     : 0xF
        Current inactive interval end time for hours       : 0xF
        Age value in days from age byte register          : 0x0
        Current activity interval start time for days      : 0xFF
        Current activity interval end time for days        : 0x0
        Current inactive interval start time for days      : 0xFF
        Current inactive interval end time for days        : 0xFF
        Number of active entries read                     : 0
        Number of entries ignored with update to age byte  : 0
        Number of entries updated with age byte           : 0
        Number of entries created new                     : 0


        Switch [1] Module [6]
        ----------------------


        Module Status:
        Statistics collected from Switch/Module           : 1/6
        Number of L2 asics in this module                 : 1

        Global Status:
        Status of feature enabled on the switch           : on
        Default activity time                             : 160
        Configured current activity time                  : 160

        Statistics from ASIC 0 when last activity timer expired:
        Age value in seconds from age byte register       : 0x20
        Current activity interval start time for seconds   : 0x0
        Current activity interval end time for seconds     : 0x20
        Current inactive interval start time for seconds   : 0xE0
        Current inactive interval end time for seconds     : 0x0
        Age value in minutes from age byte register       : 0xED
        Current activity interval start time for minutes   : 0xEA
        Current activity interval end time for minutes     : 0xED
        Current inactive interval start time for minutes   : 0xE7
        Current inactive interval end time for minutes     : 0xEA
        Age value in hours from age byte register         : 0x10
        Current activity interval start time for hours     : 0xF
        Current activity interval end time for hours       : 0x10
        Current inactive interval start time for hours     : 0xF
        Current inactive interval end time for hours       : 0xF
        Age value in days from age byte register          : 0x0
        Current activity interval start time for days      : 0xFF
        Current activity interval end time for days        : 0x0
        Current inactive interval start time for days      : 0xFF
        Current inactive interval end time for days        : 0xFF
        Number of active entries read                     : 0
        Number of entries ignored with update to age byte  : 0
        Number of entries updated with age byte           : 0
        Number of entries created new                     : 0
```

```
    Switch [2] Module [2]
    ----------------------

    Module Status:
Statistics collected from Switch/Module         :  2/2
Number of L2 asics in this module               :  1

    Global Status:
Status of feature enabled on the switch         :  on
Default activity time                           :  160
Configured current activity time                :  160

    Statistics from ASIC 0 when last activity timer expired:
Age value in seconds from age byte register     :  0x0
Current activity interval start time for seconds  :  0xE0
Current activity interval end time for seconds    :  0x0
Current inactive interval start time for seconds  :  0xC0
Current inactive interval end time for seconds    :  0xE0
Age value in minutes from age byte register     :  0x15
Current activity interval start time for minutes  :  0x12
Current activity interval end time for minutes    :  0x15
Current inactive interval start time for minutes  :  0xF
Current inactive interval end time for minutes    :  0x12
Age value in hours from age byte register       :  0x11
Current activity interval start time for hours    :  0x10
Current activity interval end time for hours      :  0x11
Current inactive interval start time for hours    :  0x10
Current inactive interval end time for hours      :  0x10
Age value in days from age byte register        :  0x0
Current activity interval start time for days     :  0xFF
Current activity interval end time for days       :  0x0
Current inactive interval start time for days     :  0xFF
Current inactive interval end time for days       :  0xFF
Number of active entries read                   :  0
Number of entries ignored with update to age byte :  0
Number of entries updated with age byte         :  0
Number of entries created new                   :  0


    Switch [2] Module [5]
    ----------------------

    Module Status:
Statistics collected from Switch/Module         :  2/5
Number of L2 asics in this module               :  1

    Global Status:
Status of feature enabled on the switch         :  on
Default activity time                           :  160
Configured current activity time                :  160

    Statistics from ASIC 0 when last activity timer expired:
Age value in seconds from age byte register     :  0xE0
Current activity interval start time for seconds  :  0xC0
Current activity interval end time for seconds    :  0xE0
Current inactive interval start time for seconds  :  0xA0
Current inactive interval end time for seconds    :  0xC0
Age value in minutes from age byte register     :  0x12
Current activity interval start time for minutes  :  0xF
Current activity interval end time for minutes    :  0x12
Current inactive interval start time for minutes  :  0xC
Current inactive interval end time for minutes    :  0xF
```

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```
Age value in hours from age byte register           :  0x11
Current activity interval start time for hours       :  0x10
Current activity interval end time for hours         :  0x11
Current inactive interval start time for hours       :  0x10
Current inactive interval end time for hours         :  0x10
Age value in days from age byte register             :  0x0
Current activity interval start time for days        :  0xFF
Current activity interval end time for days          :  0x0
Current inactive interval start time for days        :  0xFF
Current inactive interval end time for days          :  0xFF
Number of active entries read                        :  0
Number of entries ignored with update to age byte    :  0
Number of entries updated with age byte              :  0
Number of entries created new                        :  0
Router#
```

The following example shows how to display the information about the MAC-address table for a specific VLAN:

```
Router# show mac-address-table vlan 100
vlan   mac address      type     protocol  qos               ports
-----+---------------+--------+---------+---+------------------------------
 100  0050.3e8d.6400   static   assigned  -- Router
100   0050.3e8d.6400   static        ipx  -- Router
 100  0050.3e8d.6400   static      other  -- Router
 100  0100.0cdd.dddd   static      other  -- Gi1/5/9,Router,Switch
 100  00d0.5870.a4ff   dynamic        ip  -- Gi1/5/9
 100  00e0.4fac.b400   dynamic        ip  -- Gi1/5/9
 100  0100.5e00.0001   static         ip  -- Gi1/5/9,Switch
 100  0050.3e8d.6400   static         ip  -- Router
Router#
```

The following example shows how to display the information about the MAC-address table for MLDv2 snooping:

```
Router# show mac-address-table multicast mld-snooping
vlan mac address type learn qos ports
-----+---------------+--------+-----+---+------------------------------
--- 3333.0000.0001 static Yes - Switch,Stby-Switch
--- 3333.0000.000d static Yes - Gi1/2/1,Gi1/4/1,Router,Switch
--- 3333.0000.0016 static Yes - Switch,Stby-Switch
Router#
```

Related Commands

Command	Description
mac-address-table aging-time	Configures the aging time for entries in the Layer 2 table.
mac-address-table learning (virtual switch)	Configures the aging time for entries in the Layer 2 table.
mac-address-table limit	Enables MAC limiting.
mac-address-table notification mac-move	Enables MAC-move notification.
mac-address-table static	Adds static entries to the MAC-address table or configures a static MAC address with IGMP snooping disabled for that address.
mac-address-table synchronize	Synchronizes the Layer 2 MAC address table entries across the Policy Feature Card (PFC) and all the DFCs.

show mac-address-table learning (virtual switch)

To display the MAC-address learning state, use the **show mac-address-table learning** command in EXEC mode.

> **show mac-address-table learning** [{**interface** *interface*/*switch-num*/*slot*/*port*} | {**switch** *num* [**module** *num*]} | {**vlan** *vlan-id*}]

Syntax Description		
interface *interface*	(Optional) Displays information about a specific interface type.	
/*switch-num*	Switch number; valid values are 1 and 2.	
/*slot*	Module number.	
/*port*	Port number.	
switch *num*	(Optional) Specifies the number of the switch; valid values are 1 and 2.	
module *num*	(Optional) Displays information for the specified module number.	
vlan *vlan-id*	(Optional) Displays information for a specific VLAN only. Range: 1 to 4094.	

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History	Release	Modification
	12.2(33)SXH1	Support for this command was introduced.
	12.2(50)SY	Support for this command was introduced.
	15.0(1)SY	Support for this command was introduced.

Usage Guidelines   The **module** *num* keyword and argument can be used to specify supervisor engines or DFCs only.

The **interface** *interface*/*switch-num*/*slot*/*port* keyword and arguments can be used on routed interfaces only. The **interface** *interface*/*switch-num*/*slot*/*port* keyword and arguments cannot be used to configure learning on switch-port interfaces.

If you specify the **vlan** *vlan-id*, the state of the MAC-address learning of the specified VLAN, including router interfaces, on all modules, is displayed.

If you specify the **vlan** *vlan-id* and the **module** *num*, the state of the MAC-address learning of a specified VLAN on a specified module is displayed.

If you specify the interface, the state of the MAC-address learning of the specified interface on all modules is displayed.

If you enter the **show mac-address-table learning** command with no arguments or keywords, the status of MAC learning on all the existing VLANs on all the supervisor engines or DFCs configured on a Catalyst 6500 series switch is displayed.

Examples   The following example shows how to display the MAC-address learning status on all the existing VLANs on all the supervisor engines or DFCs configured on a Catalyst 6500 series switch:

```
Router# show mac-address-table learning
Flag : Switch/Module
VLAN / Int     1/3   1/6
----------     -----------
1              yes   yes
10             yes   yes
13             yes   yes
14             yes   yes
19             yes   yes
.
.
.
1019            no    no
Te1/6/4         no    no
Te1/6/5         no    no
Gi1/1/1         no    no
Gi1/5/27        no    no
Gi1/5/47        no    no

Router#
```

Table 11 describes the fields that are shown in the example.

Table 11   show mac-address-table learning Field Descriptions

Field	Description
VLAN/Interface[1]	VLAN ID or interface type, module, and port number.
Mod#	Module number of a supervisor engine or DFC.
yes	MAC-address learning is enabled.
no	MAC-address learning is disabled.

1. The interfaces displayed are routed interfaces that have internal VLANs assigned to them.

The following example shows how to display the status of MAC-address learning on all the existing VLANs on a single supervisor engine or a DFC:

```
Router# show mac-address-table learning interface gigabitethernet 1/5/3

Flag : Switch/Module

Interface    1/3   1/6
---------    -----------
Gi1/5/3      no    no
Router#
```

The following example shows how to display the status of MAC-address learning for a specific VLAN on a specific switch:

```
Router# show mac-address-table learning vlan 100 switch 1

Flag : Switch/Module

VLAN    1/3   1/6
----    -----------
100     yes   yes
Router
```

The following example shows how to display the status of MAC-address learning for a specific VLAN on a specific supervisor engine or DFC:

```
Router# show mac-address-table learning vlan 100 module 7

VLAN    Mod7
----    -----
100     yes
Router
```

The following example shows how to display the status of MAC-address learning for a specific supervisor engine or DFC:

```
Router# show mac-address-table learning interface gigabitethernet 1/5/3
Flag : Switch/Module

Interface    1/3   1/6
---------    -----------
Gi1/5/3       no    no
Router
```

The following example shows how to display the status of MAC-address learning for a specific interface on a specific supervisor engine or DFC:

```
Router# show mac-address-table learning interface gigabitethernet 1/5/3 switch 1 module 3

Flag : Switch/Module

Interface    1/3
---------    ------
Gi1/5/3       no
Router
```

Related Commands	Command	Description
	mac-address-table learning	Enables MAC-address learning.

show mls cef switch (virtual switch)

To display the Multilayer Switching (MLS)-hardware Layer 3-switching table entries, use the **show mls cef** command in EXEC mode.

> **show mls cef switch** *num* [**module** *num*]

Syntax Description

num	Specifies the number of the switch; valid values are 1 and 2.
module *num*	(Optional) Displays information for the specified module number.

Command Default   The default display is the global CEF table.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.

Usage Guidelines   The **...** indicates that there is additional information.

The MLS-hardware Layer 3 switching applies to IP traffic only.

Use the **show mls cef vrf** command to display the VRF CEF table entries.

You can enter this command on the supervisor engine or switch consoles. Enter the **remote login (virtual switch)** command to session into the supervisor engine to enter the commands.

Examples   The following example shows how to display the MLS-hardware Layer 3-switching table entries:

```
Router# show mls cef switch 1

Codes: decap - Decapsulation, + - Push Label
Index  Prefix              Adjacency
64     127.0.0.51/32       punt
65     127.0.0.0/32        punt
66     127.255.255.255/32  punt
67     1.1.1.100/32        punt
.
.
.
3201   1.1.1.0/24          punt
3202   2.2.2.0/24          punt
134400 200.0.0.0/8         punt
134432 0.0.0.0/0           drop
524256 0.0.0.0/0           drop
Router#
```

Table 12 describes the fields in the examples.

Table 12   show mls cef switch Command Output Fields

Field	Description
Index	MLS-hardware Layer 3-switching table entry index; the maximum is 256,000 entries.
Prefix	Entry prefix address/mask.
Adjacency	Adjacency types are as follows: • drop—Packets matching the prefix entry are dropped. • punt—Packets are redirected to an MSFC for further processing. • *mac-address*—Packets matching the prefix are forwarded to this specific next hop or the final destination host if directly attached.

Related Commands	Command	Description
	show mls cef vrf (virtual switch)	Displays information about the VPN routing and forwarding instance CEF table for a specific VRF name.

show mls cef vrf (virtual switch)

To display information about the VPN routing and forwarding instance (VRF) Cisco Express Forwarding (CEF) table for a specific VRF name, use the **show mls cef vrf** command in EXEC mode.

show mls cef vrf *instance-name* [*prefix*] [**detail** [**switch** *num* [**module** *num*]] [**internal**] [**lookup**] [**rpf** [*ip-address*] [**summary**] [**switch** *num* [**module** *num*]]

Syntax Description		
instance-name	VPN routing/forwarding instance name. Range: 0 to 4095.	
prefix	(Optional) Prefix of the entry to display.	
detail	(Optional) Displays the hardware-entry details.	
switch *num*	(Optional) Specifies the number of the switch; valid values are 1 and 2.	
module *num*	(Optional) Displays information for the specified module number.	
internal	(Optional) Displays internal CEF entry information.	
lookup *ip-address*	(Optional) Displays the longest prefix-match lookup entry for the specified address.	
rpf *ip-address*	(Optional) Displays the reverse path forwarding (RPF) check information for the (optional) specified IP address.	
summary	(Optional) Displays a summary of VRF CEF table information.	

Command Default This command has no default settings.

Command Modes EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.

Usage Guidelines The **show mls cef switch (virtual switch)** command displays the CEF entries in the default VRF. To display specific (nondefault) VRF entries, use the **show mls cef** [**ip**] **vrf** *vrf-name* command.

Examples The following example shows how to display information about the VPN routing and forwarding instance CEF table for a specific VRF name:

```
Router# show mls cef vrf vpn-1

Codes: decap - Decapsulation, + - Push Label
Index Prefix Adjacency
64 0.0.0.0/32 receive
65 255.255.255.255/32 receive
280 7.50.27.1/32 receive
281 7.50.27.0/32 receive
282 7.50.27.255/32 receive
298 2.1.1.1/32 receive
```

```
299 2.1.1.0/32 receive
300 2.1.1.255/32 receive
656 2.1.99.1/32 receive
Router#
```

Table 13 describes the fields in the examples.

Table 13   show mls cef vrf Command Output Fields

Field	Description
Index	MLS-hardware Layer 3-switching table entry index; the maximum is 256,000 entries.
Prefix	Entry prefix address/mask.
Adjacency	Adjacency types are as follows: • drop—Packets matching the prefix entry are dropped. • punt—Packets are redirected to an MSFC for further processing. • receive—Packets matching the prefix entry are received. • *mac-address*—Packets matching the prefix are forwarded to this specific next hop or the final destination host if directly attached.

Related Commands	Command	Description
	show mls cef switch (virtual switch)	Displays the IP entries in the MLS-hardware Layer 3-switching table.

show mls ip multicast (virtual switch)

To display the MLS IP information, use the **show mls ip multicast** command in EXEC mode.

show mls ip multicast [{**capability** [**module** *num*]} | **connected** | **group**} {{*hostname* | *ip-address*} [*ip-mask*]} | {**interface** *interface*/*switch-num*/*slot*/*port*} | {**module** *number*} | **mdt** | {**source** {*hostname* | *ip-address*}} | **statistics** | **summary**]

show mls ip multicast consistency-check [**mroute-mlsm** | {**rp-sp** [**log** [**clear**] | **statistics**]}]

Syntax Description

capability	Displays information about the multicast-replication capabilities.
module *num*	(Optional) Specifies the module number.
connected	(Optional) Displays the installed interface or mask entries.
group	(Optional) Displays the entries for a specific multicast-group address.
hostname	Group IP hostname.
ip-address	Group IP address.
ip-mask	(Optional) IP mask for group IP address.
interface *interface*	(Optional) Displays information about a specific interface type.
/switch-num	Switch number; valid values are 1 and 2.
/slot	Module number.
/port	Port number.
mdt	(Optional) Displays hardware-accelerated multicast distribution tree (MDT) information.
source *hostname*	(Optional) Displays the entries for a specific source address.
source *ip-address*	(Optional) Displays the entries for a specific source IP address.
statistics	(Optional) Displays the statistics from multicast entries.
summary	(Optional) Displays a summary of statistics from multicast entries.
consistency-check	Displays consistency-checker information.
mroute-mlsm	(Optional) Displays multicast route (mroute)/multilayer switching for multicast (MLSM) consistency-checker information.
rp-sp	(Optional) Displays route processor/switch processor consistency-checker information.
log	(Optional) Displays a log of mismatches that have been detected and corrected.
clear	(Optional) Clears the mismatches log.
statistics	(Optional) Displays the statistics of prefixes checked.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History	Release	Modification
	12.2(33)SXH1	Support for this command was introduced.

Usage Guidelines   When you view the output, note that a colon (:) is used to separate the fields.

Examples   The following example shows how to display general MLS IP-multicast information:

```
Router# show mls ip multicast
Multicast hardware switched flows:
(*, 224.1.1.1) Incoming interface: Vlan0, Packets switched: 0
Hardware switched outgoing interfaces: Vlan202
RPF-MFD installed
Total hardware switched flows : 1
Router#
```

The following example shows how to display a summary of MLS information:

```
Router# show mls ip multicast summary
1 MMLS entries using 168 bytes of memory
Number of partial hardware-switched flows: 0
Number of complete hardware-switched flows: 1
Directly connected subnet entry install is enabled
Aggregation of routed oif is enabled
Hardware shortcuts for mvpn mroutes supported
Egress Mode of replication is enabled
Maximum route support is enabled
Router#
```

The following example shows how to display MLS information on a specific interface:

```
Router# show mls ip multicast interface gigabitethernet 1/5/9
DstIP          SrcIP          Dst i/f:DstMAC       Pkts        Bytes
----------------------------------------------------------------------
SrcDstPorts    SrcDstEncap Age    LastSeen
---------------------------------------
172.20.52.37    0.0.0.0            100: 00d0.5870.a4ff 1           129
Gi1/5/9,----- ARPA,ARPA   107   06:10:02
172.20.52.36    0.0.0.0            100 : 0050.7312.0cff 50          6403
Gi1/5/9,----- ARPA,ARPA   107   06:10:04
 Number of Entries Found = 2
Router#
```

The following example shows how to display information about the multicast-replication capabilities:

```
Router# show mls ip multicast capability
Current mode of replication is Ingress
auto replication mode detection is ON

 Slot           Multicast replication capability
   2                    Egress
   5                    Egress
   6                    Egress
   8                    Ingress
   9                    Ingress
Router#
```

The following example shows how to display information about the mroute consistency-checker log:

```
Router# show mls ip multicast consistency-check mroute-mlsm
MMLS Consistancy checker of mroute-scan type is enabled
Inter scan period = 2 sec
Number of entry scanned = 20
Settle time = 60 sec
Storage for 1000 events (40000 bytes)
Mroute entry missed for a Shortcut : 0
Mroute entry was uneligible for a Shortcut : 0
Mroute entry rpf i/f mismatched with Shortcut : 0
Mroute oif in hw and Shortcut oif in sw : 0
Mroute oif in sw and Shortcut oif in sw : 0
Mroute oif in sw and Shortcut oif in hw : 0
Mroute #oif mismatched with Shortcut #oif : 0
.
.
.
<Output is truncated>
```

The following example shows how to display a log of mismatches that have been detected and corrected:

```
Router# show mls ip multicast consistency-check rp-sp log
MLSM RP<->SP Consistency Checker Mismatch log for Table 0:
size 512 current-index 0

0 total used entries in log
Router#
```

Related Commands	Command	Description
	mls ip multicast (interface configuration command)	Enables MLS IP shortcuts on the interface.

show mls ip multicast bidir (virtual switch)

To display the bidirectional (Bidir) hardware-switched entries, use the **show mls ip multicast bidir** command in EXEC mode.

show mls ip multicast bidir [{**group** {{*hostname* | *ip-address*} [*ip-mask*]}} | {**interface** *interface*/*switch-num*/*slot*/*port*}} | {**source** {*hostname* | *ip-address*}}]

Syntax Description

group	(Optional) Displays the entries for a specific multicast-group address.
hostname	Group IP hostname.
ip-address	Group IP address.
ip-mask	(Optional) IP mask for group IP address.
interface *interface*	(Optional) Displays information about a specific interface type.
/*switch-num*	Switch number; valid values are 1 and 2.
/*slot*	Module number.
/*port*	Port number.
source *hostname*	(Optional) Displays the entries for a specific source address.
source *ip-address*	(Optional) Displays the entries for a specific source IP address.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.

Examples

The following example shows how to display the Bidir hardware-switched entries:

```
Router# show mls ip multicast bidir
Multicast hardware switched flows:
(*, 226.1.4.0) Incoming interface: Vlan51, Packets switched: 0
Hardware switched outgoing interfaces: Vlan51 Vlan30
RPF-MFD installed
(*, 227.1.4.0) Incoming interface: Gi2/1, Packets switched: 0
Hardware switched outgoing interfaces: Gi2/1 Vlan30
RPF-MFD installed
Router#
```

Related Commands

Command	Description
mls ip multicast bidir gm-scan-interval	Sets the RPF scan interval for the Bidir rendezvous point.

Cisco IOS Virtual Switch Command Reference

show mls netflow ip switch (virtual switch)

To display information about the hardware NetFlow IP entries, use the **show mls netflow ip switch** command in EXEC mode.

show mls netflow ip switch switch *num* [**module** *num*]

Syntax Description

num	Number of the switch; valid values are 1 and 2.
module *num*	(Optional) Displays information for the specified module number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.

Usage Guidelines

When you view the output, note that a colon (:) is used to separate the fields.

Examples

The following example shows how to display information about any MLS NetFlow IP entries:

```
Router# show mls netflow ip switch 1 module 3
Displaying Netflow entries in EARL in module 1/3
No Entries
Displaying Netflow entries in Active Supervisor EARL in module 1/6
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f          :AdjPtr
------------------------------------------------------------------------------
Pkts       Bytes       Age   LastSeen  Attributes
--------------------------------------------------------
0.0.0.0        0.0.0.0        0   :0      :0          --              :0x0

359        16514       501   12:52:09  L3 - Dynamic

Router#
```

Related Commands

Command	Description
clear mls netflow	Clears the MLS NetFlow-shortcut entries.
ip flow-aggregation cache	Creates a flow-aggregation cache and enters the aggregation cache configuration mode.
show ip cache flow	Displays a summary of the NetFlow cache-flow entries.

show mmls fast-redirect

To display information about fast-redirect optimization on Multicast Multilayer Switching (MMLS), use the switch processor **show mmls fast-redirect** command in privileged EXEC mode.

> **show mmls** [**verbose**] **fast-redirect**

Syntax Description

verbose	(Optional) Displays more detailed information.

Defaults This command has no default settings.

Command Modes Privileged EXEC mode (#)

Command History

Release	Modification
12.2(33)SXI4	Support for this command was introduced on the Supervisor Engine 720.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Examples This example shows how to display information about Layer 2 multichassis EtherChannels with fast-redirect optimazation enabled:

```
Router# remote command switch show mmls fast-redirect
Fast-Redirect is set on following Port-Channel(s):
Port Channel    Active    Vlan Count
Po40            NO        0
Po49            YES       5

Fast-Redirect is ON for the following interfaces:
vlan    Port-Channel    interface       link-status
47      Po49            Gi1/2/10        up
47      Po49            Gi2/2/10        down (ignored)
48      Po49            Gi1/2/10        up
48      Po49            Gi1/2/10        down (ignored)

Router#
```

Related Commands

Command	Description
mls ip multicast egress fast-redirect	Enables fast-redirect optimization on any Layer 2 multichassis EtherChannel.

Cisco IOS Virtual Switch Command Reference

show module switch (virtual switch)

To display the module status and information, use the **show module** command in EXEC mode.

show module switch [**all** | *switch-num* [**slot** *num* | **version**] | **all** | **version**]

Syntax Description

switch-num	Number of the switch; valid values are 1 and 2.
slot *num*	(Optional) Displays information for the specified slot number.
all	(Optional) Displays the information for all modules.
version	(Optional) Displays the version information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

In the Mod Sub-Module fields, the **show module** command displays the supervisor engine number but appends the uplink daughter card's module type and information.

Examples

The following example shows how to display information for all modules on a switch:

```
Router# show module 6
Mod Ports Card Type Model Serial No.
--- ----- --------------------------------------- ------------------ -----------
5 5 Supervisor Engine 720 10GE (Active) VS-S720-10G SAD1205069Y
6 5 Supervisor Engine 720 10GE (RPR-Warm) VS-S720-10G SAD1205065B
Mod MAC addresses Hw Fw Sw Status
--- ---------------------------------- ------ ------------ ------------ -------
5 001e.4aaa.ee70 to 001e.4aaa.ee77 2.0 8.5(2) 12.2(2009050 Ok
6 001e.4aaa.ed58 to 001e.4aaa.ed5f 2.0 8.5(2) 12.2(2009042 Ok
Mod Sub-Module Model Serial Hw Status
---- --------------------------- ------------------ ----------- ------- -------
5 Policy Feature Card 3 VS-F6K-PFC3C SAD120504EB 1.0 Ok
5 MSFC3 Daughterboard VS-F6K-MSFC3 SAD120301PL 1.0 Ok
6 Policy Feature Card 3 VS-F6K-PFC3C SAD1203057R 1.0 Ok
Mod Online Diag Status
---- ------------------
5 Pass
6 Pass
Router#
```

The following example shows how to display information for a specific module:

```
Router# show module switch 1 slot 3
Switch Number:    1   Role:   Virtual Switch Active
--------------------  ----------------------------
Mod Ports Card Type                                 Model             Serial No.
-- ----- ------------------------------------- ----------------- -----------
 3   8  CEF720 8 port 10GE with DFC                WS-X6708-10GE     SAD1013073J

Mod MAC addresses                      Hw     Fw           Sw           Status
-- -------------------------------- ------ ----------- ------------ -------
 3  0030.f275.9afa to 0030.f275.9b01  0.508 12.2(18r)S1  12.2(2007062 Ok

Mod  Sub-Module                     Model              Serial      Hw     Status
--- ------------------------- ----------------- ----------- ------- -------
 3  Distributed Forwarding Card WS-F6700-DFC3CXL   SAD101303XN 0.402  Ok

Mod  Online Diag Status
--- ------------------
 3  Bypass

Mod Online Diag Status
--- ------------------
  5 Not Available
Router#
```

The following example shows how to display version information:

```
Router# show module switch 1 version
Mod  Port Model             Serial #     Versions
---- ---- ----------------- ----------- -------------------------------------
 Switch Number:    1   Role:   Virtual Switch Active
--------------------  ----------------------------
  1   48  WS-X6148-GE-TX    SAD08250ABL Hw : 6.1
                                        Fw : 7.2(1)
                                        Sw : 8.6(0.22)SXH2
  3   8   WS-X6708-10GE     SAD1013073J Hw : 0.508
                                        Fw : 12.2(18r)S1
                                        Sw : 12.2(20070628:210705)
                                        Sw1: 8.7(0.22)FW37
          WS-F6700-DFC3CXL  SAD101303XN Hw : 0.402
  4   4   WS-X6708A-10GE    SAD103001YC Hw : 0.102
                                        Fw : unknown
                                        Sw : unknown
  5   48  WS-X6748A-GE-TX   SAD09260ASR Hw : 0.252
                                        Fw : 12.2(18r)S1
                                        Sw : 12.2(20070628:210705)
                                        Sw1: 8.7(0.22)FW37
  6   5   WS-S720-10G       SAD1047079X Hw : 0.423
                                        Fw : 8.4(2
                                        Sw : 12.2(20070628:210705)
                                        Sw1: 8.7(0.22)FW37
          WS-F6K-MSFC3      SAD104607US Hw : 0.100
                                        Fw : 12.2(17r)S4
                                        Sw : 12.2(20070628:210705)
          WS-F6K-PFC3CXL    SAD104704UM Hw : 0.203
Router#
```

show pagp dual-active (virtual switch)

To display dual-active detection information, use the **show pagp dual-active** command in EXEC mode.

> **show pagp** [*group-number*] **dual-active**

Syntax Description

group-number	(Optional) Channel-group number. Range: 1 to 282 with a maximum of 64 values.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

The *group-number* values from 257 to 282 are not supported.

Examples

The following example shows how to display dual-active detection information:

```
Router# show pagp dual-active
PAgP dual-active detection enabled: Yes
PAgP dual-active version: 1.1

Channel group 1
Dual-Active trusted group: Yes

Channel group 2
Dual-Active trusted group: Yes

Channel group 3 dual-active detect capability w/nbrs
Dual-Active trusted group: No
          Dual-Active      Partner                Partner    Partner
Port      Detect Capable   Name                   Port       Version
Fa1/2/33  No               None                   None       N/A
Router#
```

The following example shows how to display dual-active detection information for a specific port channel:

```
Router# show pagp dual-active
PAgP dual-active detection enabled: Yes
PAgP dual-active version: 1.1

Channel group 3 dual-active detect capability w/nbrs Dual-Active trusted group: No
          Dual-Active      Partner                Partner    Partner
```

```
Port     Detect Capable  Name                 Port     Version
Fa1/2/33  No              None                None     N/A

Channel group 4
Dual-Active trusted group: Yes
No interfaces configured in the channel group

Channel group 5
Dual-Active trusted group: Yes
Channel group 5 is not participating in PAGP

Channel group 10 dual-active detect capability w/nbrs Dual-Active trusted group: Yes
         Dual-Active     Partner              Partner  Partner
Port     Detect Capable  Name                 Port     Version
Gi1/6/1  Yes             mr-rogers-nbr        Gi1/5/1  1.1
Gi2/5/1  Yes             mr-rogers-nbr        Gi1/5/2  1.1

Channel group 11 dual-active detect capability w/nbrs Dual-Active trusted group: No
         Dual-Active     Partner              Partner  Partner
Port     Detect Capable  Name                 Port     Version
Gi1/6/2  Yes             mr-rogers-nbr        Gi1/3/1  1.1
Gi2/5/2  Yes             mr-rogers-nbr        Gi1/3/2  1.1

Channel group 12 dual-active detect capability w/nbrs Dual-Active trusted group: Yes
         Dual-Active     Partner              Partner  Partner
Port     Detect Capable  Name                 Port     Version
Fa1/2/13  Yes            mr-rogers-nbr        Fa1/2/13 1.1
Fa1/2/14  Yes            mr-rogers-nbr        Fa1/2/14 1.1
Gi2/1/15  Yes            mr-rogers-nbr        Fa1/2/15 1.1
Gi2/1/16  Yes            mr-rogers-nbr        Fa1/2/16 1.1
Router#
```

The following example shows how to display dual-active detection information for a specific port channel:

```
Router# show pagp dual-active
PAgP dual-active detection enabled: Yes
PAgP dual-active version: 1.1

Channel group 3 dual-active detect capability w/nbrs
Dual-Active trusted group: No
         Dual-Active     Partner              Partner  Partner
Port     Detect Capable  Name                 Port     Version
Fa1/2/33  No             None                None     N/A
Router#
```

Related Commands	Command	Description
	dual-active detection (virtual switch)	Enables and configures dual-active detection.

show platform qos (virtual switch)

To display quality of service (QoS) information, use the **show platform qos** command in privileged EXEC mode.

> **show platform qos** [**switch** *num* **module** *num*] | *protocol* [**switch** [*num*] |
>   **module** [*num*]]

Syntax Description

switch *num*	(Optional) Displays the QoS information for a specific switch.
module *num*	(Optional) Displays QoS information for a specific module.
protocol	(Optional) Displays QoS information for a specific protocol. Valid protocols are **ip**, **ipv6**, **mpls**, **mac**, and **arp**.

Command Default   No default behavior or values.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Examples   The following example shows how to display QoS information for switch 2 module 5:

```
Router# show platform qos switch 2 module 5
QoS is enabled globally
  Port QoS is disabled globally
  QoS serial policing mode enabled globally
   Distributed Policing is Strict enabled
   Secondary PUPs are enabled

  QoS is vlan-based on the following interfaces:
    Gi1/3/1 Fa1/5/48
  QoS 10g-only mode supported: Yes [Current mode: Off]

No forwarding engine in switch [2], module [5]
Router#
```

The following example shows how to display QoS information for IPv6:

```
Router# show platform qos ipv6
QoS Summary [IPv6]: (* - shared aggregates, Mod - switch module, Sid - Switch I
d, E - service instance)
                   (^ - class-copp keyword)

       Int  Sid Mod Dir  Class-map DSCP  Agg   Trust Fl      AgForward      Ag
Policed
                                         Id          Id

-------------------------------------------------------------------------------

       All  1  8   -    Default   0    0*    No   0        2537312
    0
       All  1  9   -    Default   0    0*    No   0        8470896
    0
       All  2  1   -    Default   0    0*    No   0              0
    0
       All  2  6   -    Default   0    0*    No   0        5630256
    0
Router#
```

The following example shows how to display QoS information for IPv6 on switch 1:

```
Router# show platform qos ipv6 switch 1
QoS Summary [IPv6]: (* - shared aggregates, Mod - switch module, Sid - Switch I
d, E - service instance)
                   (^ - class-copp keyword)

       Int  Sid Mod Dir  Class-map DSCP  Agg   Trust Fl      AgForward      Ag
Policed
                                         Id          Id

-------------------------------------------------------------------------------

       All  1  8   -    Default   0    0*    No   0        2545727
    0
       All  1  9   -    Default   0    0*    No   0        8499792
    0
Router#
```

The following example shows how to display QoS information for IPv6 on switch 1 module 5:

```
Router# show platform qos ipv6 switch 1 module 5
QoS Summary [IPv6]: (* - shared aggregates, Mod - switch module, Sid - Switch Id, E -
service instance)
                   (^ - class-copp keyword)

       Int  Sid Mod Dir  Class-map DSCP  Agg   Trust Fl      AgForward      AgPoliced
                                         Id          Id
-------------------------------------------------------------------------------
      All  1  8   -    Default   0    0*    No   0
Router#
```

show platform qos protocol (virtual switch)

To display quality of service (QoS) information, use the **show platform qos protocol** command in privileged EXEC mode.

show platform qos protocol [**switch** [*num*] [**module** [*slot*]]

Syntax Description	**switch** *num*	(Optional) Displays the QoS information for a specific switch.
	module *slot*	(Optional) Displays QoS information for a specific module.

Command Default None.

Command Modes Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Examples The following example shows how to display all QoS protocol information:

```
Router# show platform qos protocol
Modes: P - police, M - marking, * - passthrough
 Module: All - all EARL slots;    Dir: I&O - In & Out

 Proto Mode Sid Mod Dir AgId Prec       Cir     Burst    AgForward     AgPoliced
-------------------------------------------------------------------------------
   BGP   P   1   8  In 16383    -      64000     2000            0             0
   BGP   P   1   8 Out 16382    -      64000     2000            0             0
   BGP   P   1   9  In 16383    -      64000     2000            0             0
   BGP   P   1   9 Out 16382    -      64000     2000            0             0
   BGP   P   2   1  In 16383    -      64000     2000            0             0
   BGP   P   2   1 Out 16382    -      64000     2000            0             0
   BGP   P   2   6  In 16383    -      64000     2000            0             0
   BGP   P   2   6 Out 16382    -      64000     2000            0             0
   RIP   * All All I&O    -     -         -        -            -             -
 EIGRP   P   1   8  In 16381    -     320000    10000            0             0
 EIGRP   P   1   8 Out 16380    -     320000    10000            0             0
 EIGRP   P   1   9  In 16381    -     320000    10000            0             0
 EIGRP   P   1   9 Out 16380    -     320000    10000            0             0
 EIGRP   P   2   1  In 16381    -     320000    10000            0             0
 EIGRP   P   2   1 Out 16380    -     320000    10000            0             0
 EIGRP   P   2   6  In 16381    -     320000    10000            0             0
 EIGRP   P   2   6 Out 16380    -     320000    10000            0             0
  ISIS   M All All  In    -     6         -        -            -             -
OSPFv3   P   1   8  In 16379    -     640000    20000            0             0
OSPFv3   P   1   8 Out 16378    -     640000    20000            0             0
OSPFv3   P   1   9  In 16379    -     640000    20000            0             0
OSPFv3   P   1   9 Out 16378    -     640000    20000            0             0
OSPFv3   P   2   1  In 16379    -     640000    20000            0             0
```

```
OSPFv3    P   2   1 Out 16378    -        640000   20000            0              0
OSPFv3    P   2   6  In 16379    -        640000   20000            0              0
OSPFv3    P   2   6 Out 16378    -        640000   20000            0              0
 WLCCP    M All All  In    -     4          -        -              -              -
  GRE     * All All I&O    -     -          -        -              -              -
GRE v6    * All All I&O    -     -          -        -              -
-Router#
```

The following example shows how to display QoS information for switch 1:

```
Router# show platform qos protocol switch 1
Modes: P - police, M - marking, * - passthrough
 Module: All - all EARL slots;   Dir: I&O - In & Out

 Proto Mode Sid Mod Dir AgId Prec        Cir    Burst    AgForward      AgPoliced
 -------------------------------------------------------------------------------
   BGP    P   1   8  In 16383    -        64000    2000            0              0
   BGP    P   1   8 Out 16382    -        64000    2000            0              0
   BGP    P   1   9  In 16383    -        64000    2000            0              0
   BGP    P   1   9 Out 16382    -        64000    2000            0              0
   RIP    * All All I&O    -     -          -        -              -              -
 EIGRP    P   1   8  In 16381    -       320000   10000            0              0
 EIGRP    P   1   8 Out 16380    -       320000   10000            0              0
 EIGRP    P   1   9  In 16381    -       320000   10000            0              0
 EIGRP    P   1   9 Out 16380    -       320000   10000            0              0
  ISIS    M All All  In    -     6          -        -              -              -
OSPFv3    P   1   8  In 16379    -       640000   20000            0              0
OSPFv3    P   1   8 Out 16378    -       640000   20000            0              0
OSPFv3    P   1   9  In 16379    -       640000   20000            0              0
OSPFv3    P   1   9 Out 16378    -       640000   20000            0              0
 WLCCP    M All All  In    -     4          -        -              -              -
  GRE     * All All I&O    -     -          -        -              -              -
GRE v6    * All All I&O    -     -          -        -              -
-Router#
```

The following example shows how to display QoS information for switch 1 module 5:

```
Router# show platform qos protocol switch 1 module 5
Modes: P - police, M - marking, * - passthrough
 Module: All - all EARL slots;   Dir: I&O - In & Out

 Proto Mode Sid Mod Dir AgId Prec        Cir    Burst    AgForward      AgPoliced
 -------------------------------------------------------------------------------
   BGP    P   1   8  In 16383    -        64000    2000            0              0
   BGP    P   1   8 Out 16382    -        64000    2000            0              0
   RIP    * All All I&O    -     -          -        -              -              -
 EIGRP    P   1   8  In 16381    -       320000   10000            0              0
 EIGRP    P   1   8 Out 16380    -       320000   10000            0              0
  ISIS    M All All  In    -     6          -        -              -              -
OSPFv3    P   1   8  In 16379    -       640000   20000            0              0
OSPFv3    P   1   8 Out 16378    -       640000   20000            0              0
 WLCCP    M All All  In    -     4          -        -              -              -
  GRE     * All All I&O    -     -          -        -              -              -
GRE v6    * All All I&O    -     -          -        -              -
-Router#
```

show platform software qos agid (virtual switch)

To display software quality of service (QoS) aggregate ID database information, use the **show platform software qos agid** command in privileged EXEC mode.

show platform software qos agid [**switch** [*num*] | **module** [*num*]]

Syntax Description

switch *num*	(Optional) Displays the QoS information for a specific switch.
module *num*	(Optional) Displays QoS information for a specific module.

Command Default   None.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Examples   The following example shows how to display all QoS aggregate ID information:

```
Router# show platform software qos agid
sid mod agid shr_id    leak_rate burst  use drop plc_base  start-agid cfgid dp_id label
-------------------------------------------------------------------------------------
  1   8 4095      0        0 kbps     0   1   no      0          0 1023    1 [0]
  1   8 16378     0      640 kbps 20000   2  yes      0          0    3    1 [0]
  1   8 16379     0      640 kbps 20000   2  yes      0          0    3    0 [0]
  1   8 16380     0      320 kbps 10000   2  yes      0          0    2    1 [0]
  1   8 16381     0      320 kbps 10000   2  yes      0          0    2    0 [0]
  1   8 16382     0       64 kbps  2000   2  yes      0          0    1    1 [0]
1   9 4095        0      0 kbps     0   1   no      0          0 1023    1 [0]
  1   9 16378     0      640 kbps 20000   2  yes      0          0    3    1 [0]
  1   9 16379     0      640 kbps 20000   2  yes      0          0    3    0 [0]
  1   9 16380     0      320 kbps 10000   2  yes      0          0    2    1 [0]
  1   9 16381     0      320 kbps 10000   2  yes      0          0    2    0 [0]
  1   9 16382     0       64 kbps  2000   2  yes      0          0    1    1 [0]
  1   9 16383     0       64 kbps  2000   2  yes      0          0    1    0 [0]]
  2   1 4095      0        0 kbps     0   1   no      0          0 1023    1 [0]
  2   1 16378     0      640 kbps 20000   2  yes      0          0    3    1 [0]
  2   1 16379     0      640 kbps 20000   2  yes      0          0    3    0 [0]
  2   1 16380     0      320 kbps 10000   2  yes      0          0    2    1 [0]
  2   1 16381     0      320 kbps 10000   2  yes      0          0    2    0 [0]
  2   1 16382     0       64 kbps  2000   2  yes      0          0    1    1 [0]
  2   1 16383     0       64 kbps  2000   2  yes      0          0    1    0 [0]]]
  2   6 4095      0        0 kbps     0   1   no      0          0 1023    1 [0]
  2   6 16378     0      640 kbps 20000   2  yes      0          0    3    1 [0]
  2   6 16379     0      640 kbps 20000   2  yes      0          0    3    0 [0]
  2   6 16380     0      320 kbps 10000   2  yes      0          0    2    1 [0]
  2   6 16381     0      320 kbps 10000   2  yes      0          0    2    0 [0]
  2   6 16382     0       64 kbps  2000   2  yes      0          0    1    1 [0]
```

```
   2   6 16383      0       64 kbps  2000   2 yes        0          0    1    0 [0]
Router#
```

show platform software qos flid (virtual switch)

To display software flow ID database quality of service (QoS) information, use the **show platform software qos flid** command in privileged EXEC mode.

show platform software qos flid [**switch** [*num*] | **module** [*num*]]

Syntax Description

switch *num*	(Optional) Displays the QoS information for a specific switch.
module *num*	(Optional) Displays QoS information for a specific module.

Command Default   None.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Examples   The following example shows how to display all QoS flow ID information:

```
Router# show platform software qos flid
sid slot flid     leak_rate burst drop percent param labels
---------------------------------------------------------------
  2    1    1      1024 kbps 10000  yes     0%     0 [18]
Router#
```

show platform software qos port-data (virtual switch)

To display port-data quality of service (QoS) information, use the **show platform software qos port-data** command in privileged EXEC mode.

> **show platform software qos port-data** *switch | slot | port*

Syntax Description		
	switch	Displays QoS port data information for a switch.
	slot	Displays QoS port data information for a slot.
	port	Displays QoS port data information for a port.

Command Default None.

Command Modes Privileged EXEC (#)

Command History	Release	Modification
	12.2(50)SY	Support for this command was introduced.
	15.0(1)SY	Support for this command was introduced.

Examples The following example shows how to display QoS port data information for switch 1 module 5 port 15:

```
Router# show platform software qos port-data 1 5 15
-------------------------------------------------------------------------------
* Type: Tx[2q2t] Rx[1q4t]  [0] Coil
* Per-Port: [COS] Default COS[0] force[0] [VLAN based]
-------------------------------------------------------------------------------
* COSMAP(C[Q/T]) TX: 0[2/1] 1[2/1] 2[2/1] 3[2/1] 4[2/1] 5[2/1] 6[2/1] 7[2/1]
                 RX: 0[1/3] 1[1/3] 2[1/3] 3[1/3] 4[1/3] 5[1/3] 6[1/3] 7[1/3]
-------------------------------------------------------------------------------
* WRR bandwidth:       [240 65024]
* TX queue limit(size): [6144 49152]
* WRED queue[1]:       failed (0xAA)
      queue[2]:        failed (0xAA)
-------------------------------------------------------------------------------
* TX drop thr queue[1]: type[2 QOS_SCP_2_THR] dropThr[4096 4096]
              queue[2]: type[2 QOS_SCP_2_THR] dropThr[47104 47104]
* RX drop threshold:    type[4 QOS_SCP_4_THR] dropThr[4096 4096 4096 4096]
Router#
```

show power switch (virtual switch)

To display information about the power status, use the **show power switch** command in EXEC mode.

show power switch {**all** | *num*}

Syntax Description

all	Displays the power status for all switches.
num	Displays the power status for a specific switch.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   Regardless of the type of supervisor engine you are using, the Catalyst 6500 series switch allocates power to the second supervisor engine slot in anticipation of a redundant supervisor engine configuration. You cannot turn off this function.

If you do not install a second supervisor engine, we recommend that you put the highest power-consuming module into the second supervisor engine slot to get the maximum power utilization.

The Inline power field in the **show power** output displays the inline power that is consumed by the modules. For example, The following example shows that module 9 has consumed 0.300 A of inline power:

```
Inline power   #    current
module         9    0.300A
```

Examples   This command shows how to display the system-power status for a switch:

```
Router# show power switch 1
Switch Number: 1
system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total =     1153.32 Watts (27.46 Amps @ 42V)
system power used =      1038.24 Watts (24.72 Amps @ 42V)
system power available = 115.08 Watts ( 2.74 Amps @ 42V)
                         Power-Capacity PS-Fan Output Oper
PS   Type               Watts   A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1    WS-CAC-2500W       1153.32 27.46  OK     OK     on
2    none
                         Pwr-Requested  Pwr-Allocated  Admin Oper
Slot Card-Type          Watts   A @42V Watts   A @42V State State
```

```
---- ------------------ ------- ------ ------- ------ ----- -----
1    WS-X6148-GE-TX      103.74  2.47   103.74  2.47   on    on
3    WS-X6708-10GE       473.76 11.28   473.76 11.28   on    on
4    WS-X6708A-10GE      375.06  8.93    -       -      on    off (not supported)
5    WS-X6748A-GE-TX     240.24  5.72   240.24  5.72   on    on
6    WS-S720-10G         220.50  5.25   220.50  5.25   on    on
Router>
```

The following example shows how to display the power status for all switches:

```
Router# show power switch all
Switch Number: 1
system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total =     1153.32 Watts (27.46 Amps @ 42V)
system power used =      1038.24 Watts (24.72 Amps @ 42V)
system power available = 115.08 Watts ( 2.74 Amps @ 42V)
                         Power-Capacity PS-Fan Output Oper
PS    Type               Watts    A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1    WS-CAC-2500W        1153.32 27.46  OK     OK     on
2    none
                         Pwr-Requested  Pwr-Allocated  Admin Oper
Slot Card-Type           Watts    A @42V Watts    A @42V State State
---- ------------------ ------- ------ ------- ------ ----- -----
1    WS-X6148-GE-TX      103.74  2.47   103.74  2.47   on    on
3    WS-X6708-10GE       473.76 11.28   473.76 11.28   on    on
4    WS-X6708A-10GE      375.06  8.93    -       -      on    off (not supported)
5    WS-X6748A-GE-TX     240.24  5.72   240.24  5.72   on    on
6    WS-S720-10G         220.50  5.25   220.50  5.25   on    on
Switch Number: 2
system power redundancy mode = redundant
system power redundancy operationally = non-redundant
system power total =     0 Watt
system power used =      0 Watt
system power available = 0 Watt
                         Power-Capacity PS-Fan Output Oper
PS    Type               Watts    A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1    none
2    none
                         Pwr-Requested  Pwr-Allocated  Admin Oper
Slot Card-Type           Watts    A @42V Watts    A @42V State State
---- ------------------ ------- ------ ------- ------ ----- -----
                         Inline         Inline         Inline          Inline
                         Pwr-Requested  Pwr-Allocated  Local-Pwr-Pool  Power
Slot Card-Type           Watts    A @42V Watts    A @42V Watts    A @42V Status
---- ------------------ ------- ------ ------- ------ ------- ------ ----------

Router#
```

	Command	Description
Related Commands	**power enable**	Turns on power for the modules.
	power redundancy-mode	Sets the power-supply redundancy mode.

Cisco IOS Virtual Switch Command Reference ■

show running-config switch (virtual switch)

To display the status and configuration of the switch, use the **show running-config switch** command in EXEC mode.

> **show running-config switch** *num* [**module** *num*]

Syntax Description

num	Number of the switch; valid values are 1 and 2.
module *num*	(Optional) Displays information for the specified module number.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   In some cases, you might see a difference in the duplex mode that is displayed between the **show interfaces (virtual switch)** command and the **show running-config switch (virtual switch)** command. In this case, the duplex mode that is displayed in the **show interfaces (virtual switch)** command is the actual duplex mode that the interface is running. The **show interfaces (virtual switch)** command shows the operating mode for an interface, while the **show running-config switch (virtual switch)** command shows the configured mode for an interface.

The **show running-config switch (virtual switch)** command output for an interface might display the duplex mode but no configuration for the speed. This output indicates that the interface speed is configured as auto and that the duplex mode shown becomes the operational setting once the speed is configured to something other than auto. With this configuration, it is possible that the operating duplex mode for that interface does not match the duplex mode that is shown with the **show running-config switch (virtual switch)** command.

Examples   The following example shows how to display the module and status configuration for all modules on a switch:

```
Router# show running-config switch 1
Building configuration...

Current configuration : 8183 bytes
!
interface GigabitEthernet1/1/1
 no switchport
 no ip address
 speed 1000
```

```
!
interface GigabitEthernet1/1/2
 no switchport
 no ip address
 shutdown
!
interface GigabitEthernet1/1/3
 no switchport
 no ip address
 shutdown
!
interface GigabitEthernet1/1/4
 no switchport
 no ip address
 shutdown
.
.
.
```

show switch virtual (virtual switch)

To display configuration and status information for a virtual switching system (VSS), use the **show switch virtual** command in EXEC mode.

show switch virtual [**dual-active** {**bfd** | **pagp** | **fast-hello** | **summary**} | **link** [**counters** | **detail** | **port-channel** | **ports**] | **redundancy** | **role** | **slot-map**]

Syntax Description

detail	(Optional) Displays detailed virtual switch information.
dual-active	(Optional) Displays virtual switch dual-active information.
bfd	Specifies a summary of dual-active bfd information.
pagp	Specifies a summary of dual-active PAgP information
fast-hello	Specifies a summary of dual-active fast-hello information,
summary	Specifies a summary of dual-active configuration information,
link	(Optional) Displays the virtual switch link information.
counters	(Optional) Displays VSL counter information
port-channel	(Optional) Displays VSL port channel information.
ports	(Optional) Displays VSL port information.
redundancy	(Optional) Displays the VSS redundancy status.
role	(Optional) Displays the VSS role information.
slot-map	(Optional) Displays the VSS slot map table.

Command Default This command has no default settings.

Command Modes EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(33)SXI	Support for the **fast-hello** keyword was introduced.
12.2(50)SY	Support for this command was introduced. The interface must not be in use for fast hello dual-active detection.
15.0(1)SY	Support for this command was introduced. The interface must not be in use for fast hello dual-active detection.
15.1(1)SY	Support for local and peer switches added.

Usage Guidelines Use this command to display configuration and status information for a VSS.

The **show switch virtual link detail** command displays the output of the **show switch virtual link** commands and the **show vslp lmp internal** commands. In the output, the entry "show int" is displayed for all the VSL members.

The **show switch virtual dual-active pagp** command displays dual-active trust mode status.

Examples   The following example shows how to display configuration and status information for the VSS:

- In virtual switch mode without skipping config-register:

```
Router# show switch virtual

Switch mode : Virtual Switch
Virtual switch domain number : 1
Local switch number : 2
Local switch operational role: Virtual Switch Active
Peer switch number : 1
Peer switch operational role : Virtual Switch Standby
Router#
```

- In virtual switch mode with skipping config-register but not yet rebooted:

```
Router# show switch virtual

Switch mode : Virtual Switch
Virtual switch domain number : 1
Local switch number : 2
Local switch operational role: Virtual Switch Active
Peer switch number : 1
Peer switch operational role : Virtual Switch Standby
Warning: Config-register set or will be set to skip configuration 0x2142 in the next
reload.
Change config-register; otherwise, switch will be boot in Standalone mode with some
default config.
Router#
```

- In standalone mode without skipping config-register:

```
Router# show switch virtual
Switch Mode : Standalone
 Not in Virtual Switch mode due to:
   Domain ID is not configured
Router#
```

- In standalone mode with skipping config-register:

```
Router# show switch virtual
Switch Mode : Standalone
 Not in Virtual Switch mode due to:
   Domain ID is not configured
   Warning: config-register is set to skip parse 0x2142 in RP or SP
Use [show boot] on RP/SP to verify.
Router#
```

The following example shows how to display the virtual switch priority for local and peer switches:

```
Router# show switch virtual
Switch mode                : Virtual Switch
Virtual switch domain number : 100
Local switch number        : 1
Local switch operational role: Virtual Switch Active
Peer switch number         : 2
Peer switch operational role : Virtual Switch Standby
Router#
```

The following example shows how to display the virtual switch link information:

```
Router# show switch virtual link
VSL Status              : UP
VSL Uptime              : 4 hours, 26 minutes
VSL SCP Ping            : Pass (or Fail)   OK (or Not OK)
```

```
VSL ICC (Ping)          : Pass (or Fail)
VSL Control Link        : Te1/3/1
Router#
```

The following example shows how to display the virtual switch link counter information:

```
Router# show switch virtual link counters
Port              InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Po10              66340451        190415          15637         112069
Te1/3/1           66981250        194528          15770         112072
Po20              42116619         92926          16406         128593
Te2/2/1           42117401         92932          16406         128593

Port              OutOctets   OutUcastPkts   OutMcastPkts   OutBcastPkts
Po10              39030669        112680         105482              0
Te1/3/1           42133252        129182         108824              0
Po20              66948309        112069         210227              0
Te2/2/1           66957613        112070         210233              0

Port      Align-Err    FCS-Err    Xmit-Err    Rcv-Err UnderSize OutDiscards
Te1/3/1   0            0          0           0          0        0
Po10      0            0          0           0          0        0
Te1/3/1   0            0          0           0          0        0
Po20      0            0          0           0          0        0
Te2/3/1   0            0          0           0          0        0
Router#
```

The following example shows how to display the virtual switch link port-channel information:

```
Router# show switch virtual link port-channel

VSL Port Channel Information

Flags:  D - down       P - bundled in port-channel
        I - stand-alone s - suspended
        H - Hot-standby (LACP only)
        R - Layer3      S - Layer2
        U - in use      N - not in use, no aggregation
        f - failed to allocate aggregator

        M - not in use, no aggregation due to minimum links not met
        m - not in use, port not aggregated due to minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
```

This example shows how to display information for BFD dual-active detection:

```
Router# show switch virtual dual-active bfd
Bfd dual-active detection enabled: Yes
Bfd dual-active interface pairs configured:
  interface1 Gi1/9/48 interface2 Gi2/1/48

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-------------------------------------------
10     Po10(RU)         -        Te1/3/1(P)
20     Po20(RU)         -        Te2/2/1(P)
Router#
```

The following example shows how to display the virtual switch link port information:

```
Router# show switch virtual link port

VSL Link Info        : Configured: 3   Operational: 1
```

```
                          Peer           Peer    Peer
        Interface  State  MAC            Switch  Interface
        -----------------------------------------------------------------------
        Gi1/3/1    link_down   -               -       -
        Gi1/5/4    operational 0013.5fcb.1480  2       Gi1/6/4
        Gi1/5/5    link_down   -               -       -

                   Last operational        Current packet      Last Diag   Time since
        Interface  Failure state           State               Result      Last Diag
        ------------------------------------------------------------------------------
        Gi1/1/1    No failure              Hello bidir         Never ran   7M:51S
        Gi1/1/2    No failure              No failure          Never ran   7M:51S


                             Hello Tx (T4) ms        Hello Rx (T5*) ms
        Interface  State     Cfg    Cur    Rem      Cfg     Cur     Rem
        -------------------------------------------------------------------
        Te1/1/1    operational 500    500    404      5000    5000    4916
        Te1/1/2    link_down   500    -      -        500000  -       -
        Te1/3/3    link_down   500    -      -        500000  -       -
        Te1/3/4    operational 500    500    404      500000  500000  499916
        *T5 = min_rx * multiplier
        Router#
```

The following example shows how to display redundancy status information for each switch in the virtual switch:

```
Router# show switch virtual redundancy
My Switch Id = 1
Peer Switch Id = 2
Last switchover reason = user forced
Configured Redundancy Mode = sso
Operating Redundancy Mode = sso
Switch 1 Slot 5 Processor Information :
-----------------------------------------------
Current Software state = ACTIVE
Uptime in current state = 9 hours, 32 minutes
Image Version = Cisco IOS Software, s72033_rp Software
(s72033_rp-ADVENTERPRISEK9_WAN_DBG-VM), Version 12.2(SIERRA_INTEG_090405) INTERIM SOFTWARE
Synced to V122_32_8_11, 12.2(32.8.11)SR on rainier, Weekly 12.2(32.8.11)SX261
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 06-Apr-09 02:54 by kchristi
BOOT = disk0:mz_good_image,12;
CONFIG_FILE =
BOOTLDR =
Configuration register = 0x2
Fabric State = ACTIVE
Control Plane State = ACTIVE
Switch 1 Slot 6 Processor Information :
-----------------------------------------------
Current Software state = RPR-Warm
Uptime in current state = 4 days, 17 hours, 36 minutes
Image Version =
BOOT = disk0:mz-rbh,12;
CONFIG_FILE =
BOOTLDR =
Configuration register = 0x2
Fabric State = RPR-Warm
Control Plane State = RPR-Warm
Switch 2 Slot 5 Processor Information :
-----------------------------------------------
Current Software state = STANDBY HOT (switchover target)
Uptime in current state = 9 hours, 24 minutes
```

```
Image Version = Cisco IOS Software, s72033_rp Software
(s72033_rp-ADVENTERPRISEK9_WAN_DBG-VM), Version 12.2(SIERRA_INTEG_090405) INTERIM SOFTWARE
Synced to V122_32_8_11, 12.2(32.8.11)SR on rainier, Weekly 12.2(32.8.11)SX261
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 06-Apr-09 02:54 by kchristi
BOOT = disk0:mz_good_image,12;
CONFIG_FILE =
BOOTLDR =
Configuration register = 0x2
Fabric State = ACTIVE
Control Plane State = STANDBY
Switch 2 Slot 6 Processor Information :
-----------------------------------------------
Current Software state = RPR-Warm
Uptime in current state = 4 days, 17 hours, 36 minutes
Image Version =
BOOT = disk0:mz-rbh,12;
CONFIG_FILE =
BOOTLDR =
Configuration register = 0x2
Fabric State = RPR-Warm
Control Plane State = RPR-Warm
Router#
```

The following example shows how to display role and configuration and status information for each switch in the virtual switch:

```
Router# show switch virtual role

Switch   Switch   Status  Preempt  Priority  Role     Session ID
         Number                                       Local Remote
-----------------------------------------------------------------
Local    1        UP      TRUE     200       ACTIVE   0     0
Remote   2        UP      FALSE    100       STANDBY  9272  271


In dual-active recovery mode: No

Valid flag can be moved to detail
SID
```

The following example shows how to display the virtual switch slot map table:

```
Router# show switch virtual slot-map
Virtual Slot to Remote Switch/Physical Slot Mapping Table:

Virtual    Remote /    Physical   Module
Slot No    Switch No   Slot No    Uptime
---------+-----------+---------+----------
  17         1           1         03:04:51
  18         1           2         03:04:50
  19         1           3         03:00:25
  20         1           4         03:04:53
  21         1           5         03:04:59
  22         1           0         -
  23         1           0         -
  24         1           0         -
  25         1           0         -
  26         1           0         -
  27         1           0         -
  28         1           0         -
  29         1           0         -
  30         1           0         -
  31         1           0         -
```

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```
32          1              0          -
33          2              1          02:59:25
34          2              2          02:59:23
35          2              3          02:59:23
36          2              4          02:59:27
37          2              5          03:03:17
38          1              0          -
39          1              0          -
40          1              0          -
41          1              0          -
42          1              0          -
43          1              0          -
44          1              0          -
45          1              0          -
46          1              0          -
47          1              0          -
48          1              0          -
49          1              0          -
Router#
```

The following example shows how to display virtual switch priority for local and peer switches:

```
Router# show switch virtual
Switch mode                 : Virtual Switch
Virtual switch domain number : 100
Local switch number         : 1
Local switch operational role: Virtual Switch Active
Peer switch number          : 2
Peer switch operational role : Virtual Switch Standby
Router#
```

Related Commands	Command	Description
	dual-active detection (virtual switch)	Enables and configures dual-active detection.
	switch (virtual switch)	Configures the VSS domain number and enter the virtual switch domain configuration submode.

show tcam counts (virtual switch)

To display the TCAM statistics, use the **show tcam counts** command in EXEC mode.

show tcam counts [{**arp** | **detail** | **ip** | **mpls** | **other**} [**switch** *num* [**module** *num*]] | **switch** *num* [**module** *num*]]

Syntax Description

arp	(Optional) Displays TCAM statistics for Address Resolution Protocol (ARP).
detail	(Optional) Displays detailed information.
ip	(Optional) Displays TCAM statistics for IP protocol.
mpls	(Optional) Displays TCAM statistics for Multiprotocol Label Switching (MPLS) protocol.
other	(Optional) Displays TCAM statistics for protocols other than ARP, IP, or MPLS.
switch *num*	(Optional) Displays TCAM statistics for the specified switch; valid values are 1 and 2.
module *num*	(Optional) Displays information for the specified module number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

The display includes information about the per-bank TCAM utilization for the ACL/QoS TCAM.

Examples

The following example shows how to display the TCAM statistics for the ARP protocol:

```
Router# show tcam counts arp
          Used      Free      Reserved
          ----      ----      --------

ACL_TCAM
--------
  Masks:    3      4019          72
Entries:    5     32717         576

QOS_TCAM
--------
  Masks:    1      4074          18
Entries:    2     32746         144
Router#
```

The following example shows how to display TCAM statistics for protocols other than ARP, IP, or MPLS:

```
Router# show tcam counts other
          Used        Free       Reserved
          ----        ----       --------


ACL_TCAM
--------
  Masks:     3        4019            72
Entries:     6       32717           576


QOS_TCAM
--------
  Masks:     1        4074            18
Entries:     2       32746           144
```

The following example shows how to display TCAM statistics for a specific switch:

```
Router# show tcam counts switch 1
          Used        Free      Percent Used      Reserved
          ----        ----      ------------      --------
 Labels:(in)  4       4092           0
 Labels:(eg)  2       4094           0


ACL_TCAM
--------
  Masks:    77        4019           1                72
Entries:    51       32717           0               576


QOS_TCAM
--------
  Masks:    22        4074           0                18
Entries:    22       32746           0               144


    LOU:     0         128           0
  ANDOR:     0          16           0
  ORAND:     0          16           0
    ADJ:     3        2045           0
Router#
```

Table 14 describes the fields that are shown in the example.

Table 14   show tcam counts Command Output Fields

Field	Description
Labels Used	Number of labels that are used (maximum of 512).
Labels Free	Number of free labels remaining.
Labels Percent Used	Percentage of labels that are used.
Masks Used	Number of masks that are used (maximum of 4096).
Masks Free	Number of free labels remaining.
Masks Percent Used	Percentage of masks that are used.
Entries Used	Number of labels that are used (maximum of 32767).
Entries Free	Number of free labels that are remaining.
Entries Percent Used	Percentage of entries that are used.

show tcam interface (virtual switch)

To display information about the interface-based Ternary Content Addressable Memory (TCAM), use the **show tcam interface** command in EXEC mode.

> **show tcam interface** *interface*/*switch-num*/*slot*/*port* {**acl** {**in** | **out**}} | {**qos** {**type1** | **type2**}} *type* [**all** | **detail** | **switch** *num* [**module** *num*]

Syntax Description

interface *interface*	Displays information about a specific interface type.
/*switch-num*	Switch number; valid values are 1 and 2.
/*slot*	Module number.
/*port*	Port number.
acl in	(Optional) Displays the access-control list (ACL)-based incoming packets.
acl out	(Optional) Displays the ACL-based outgoing packets.
qos type1	(Optional) Displays the quality of service (QoS)-based Type 1 packets.
qos type2	(Optional) Displays the QoS-based Type 2 packets.
type	Protocol type to display; valid values are **arp**, **ipv6**, **mpls**, and **other**.
all	(Optional) Displays all forwarding engines.
detail	(Optional) Displays detailed information.
switch *num*	(Optional) Specifies the switch number.
module *num*	(Optional) Specifies the module number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Use the **clear mls acl counters** command to clear the TCAM ACL match counters.

The match counts display is supported in PFC3BXL or PFC3B mode only.

The **all** keyword enables you to view the interface access control entry (ACE) counters for each module.

Examples   The following example shows how to display interface-based TCAM information:

```
Router# show tcam interface gigabitethernet 1/5/3 acl in ip
deny ip any any
permit ip 20.20.0.0 0.0.255.255 22.22.0.0 0.0.255.255
redirect ip 20.21.0.0 0.0.255.255 22.23.0.0 0.0.255.255
permit tcp 24.24.0.0 0.0.255.255 30.30.0.0 0.0.255.255
Fragments (1 match)
permit tcp 25.25.0.0 0.0.255.255 31.31.0.0 0.0.255.255
fragments
permit tcp 25.25.0.0 0.0.255.255 range 30000 30020 31.31.0.0
0.0.255.255 range 10000 10010 (102 matches)
permit tcp 24.24.0.0 0.0.255.255 eq 9000 30.30.0.0 0.0.255.255
eq telnet
deny ip any any
deny ip any any
Router#
```

The following example shows how to display detailed TCAM information:

```
Router# show tcam interface gigabitethernet 1/5/3 acl in ip detail

--------------------------------------------------------------------------------
-----------------------------------
DPort - Destination Port   SPort - Source Port       TCP-F - U -URG
 Pro   - Protocol
I     - Inverted LOU      TOS   - TOS Value          - A -ACK
 rtr   - Router
MRFM  - M -MPLS Packet     TN    - T -Tcp Control     - P -PSH
 COD   - C -Bank Care Flag
      - R -Recirc. Flag        - N -Non-cachable     - R -RST
      - I -OrdIndep. Flag
      - F -Fragment Flag   CAP   - Capture Flag       - S -SYN
      - D -Dynamic Flag
      - M -More Fragments  F-P   - FlowMask-Prior.    - F -FIN
 T     - V(Value)/M(Mask)/R(Result)
X     - XTAG              (*)   - Bank Priority
--------------------------------------------------------------------------------
-----------------------------------


Interface: 1018   label: 1   lookup_type: 0
protocol: IP   packet-type: 0

+-+-----+--------------+--------------+--------------+--------------+-------
+---+----+-+---+--+---+---+
|T|Index| Dest Ip Addr | Source Ip Addr|    DPort     |    SPort     | TCP-F
|Pro|MRFM|X|TOS|TN|COD|F-P|
+-+-----+--------------+--------------+--------------+--------------+-------
+---+----+-+---+--+---+---+
 V 18396      0.0.0.0       0.0.0.0       P=0           P=0        ------
   0 ---- 0   0 -- --- 0-0
 M 18404      0.0.0.0       0.0.0.0          0             0
   0 ---- 0   0
 R rslt: L3_DENY_RESULT              rtr_rslt: L3_DENY_RESULT


 V 36828      0.0.0.0       0.0.0.0       P=0           P=0        ------
   0 ---- 0   0 -- --- 0-0
 M 36836      0.0.0.0       0.0.0.0          0             0
   0 ---- 0   0
 R rslt: L3_DENY_RESULT (*)          rtr_rslt: L3_DENY_RESULT (*)
Router#
```

Related Commands	Command	Description
	clear mls acl counters	Clears the MLS ACL counters.

show vslp (virtual switch)

To display Virtual Switch Link Protocol (VSLP) instance information, use the **show vslp** command in EXEC mode.

show vslp {**lmp** | **rrp** [*type*]} | {**instances** | **lmp** [*type*] | **packet** [**counters**] | **rrp** [*type*]}

Syntax Description

lmp	Specifies the Link Maintenance Protocol (LMP) information.
rrp	Specifies the Role Resolution Protocol (RRP) information.
type	Type of information; see the "Usage Guidelines" section for valid values.
instances	Displays the VSLP instance mappings.
packet	Displays the VSLP packet information.
counters	(Optional) Displays the VSLP packet counter information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.
15.1(1)SY	Support for this command was introduced. Removed *instance-number* argument.

Usage Guidelines

The valid values for the *type* argument are as follows:

- **counters**—Displays counter information.
- **detail**—Displays detailed information.
- **fsm**—Displays Finite State Machine (FSM) information.
- **neighbors**—Displays neighbor information (supported with the **lmp** keyword only).
- **status**—Displays status information.
- **summary**—Displays a summary of information.
- **timer**—Displays Tx and Rx hello timer values.

The timers already displayed in the **show vslp lmp timers** output are shown in the output of the **show vslp lmp summary** command.

The output of the **show vslp rrp detail** command includes the information from the following commands:

- **show vslp rrp summary**

- **show vslp rrp counters**

- **show vslp rrp fsm**

Examples   The following example shows how to display a summary of LMP information for a specific VSLP instance.

```
Router# show vslp 2 lmp summary
  LMP summary

    Link info:        Configured: 2        Operational: 0

                          Peer Peer            Peer  Peer   Timer(s) running
Port   Flag State         Flag MAC             Swtch Port   (Time remaining)
-------------------------------------------------------------------------------
 4/1   v    link_down     -    -               -     -
 4/2   v    link_down     -    -               -     -
Router#
```

The following example shows how to displays the VSLP instance mappings.

```
Router# show vslp instances
VSLP instance mappings:

Instance Num  Name                               Switch Num   Flag
----------------------------------------------------------------------
2             VSL                                2            0x00000001
Router#
```

The following example shows how to display LMP neighbor information:

```
Router# show vslp 2 lmp neighbors

  LMP neighbors

    Peer Group info:       # Groups: 0
Router#
```

The following example shows how to display a summary of LMP information:

```
Router# show vslp lmp summary

Instance #1:

LMP summary
Link info:        Configured: 3        Operational: 1

                      Peer Peer          Peer  Peer       Timer(s) running
 Interface Flag State Flag MAC           Switch Interface  (Time remaining)
-------------------------------------------------------------------------------
Gi1/3/1   v    link_down     -    -               -     -
Gi1/5/4   vf   operational   vf   0013.5fcb.1480  2     Gi1/6/4   T4(240ms) T5(2.22s)
Gi1/5/5   v    link_down     -    -               -     -

Flags:  V - valid       f -> B - bidirectional
```

The following examples shows how to display the LMP Tx and Rx hello timer values:

```
Router# show vslp lmp timer
Instance #1:

  LMP hello timer
                          Hello Tx (T4) ms        Hello Rx (T5*) ms
Interface   State       Cfg    Cur    Rem       Cfg      Cur    Rem
--------------------------------------------------------------------
Gi1/9/1     link_down   1000   -      -         500000   -      -
Gi1/9/3     link_down   1000   -      -         500000   -      -
Gi1/9/5     link_down   1000   -      -         500000   -      -

Router#
```

The following example shows how to display VSLP packet information:

```
Router# show vslp packet
VSLP packet counters
  Transmitted:
    total       = 1543
    error       = 0
    err_cksum   = 0
    eobc        = 0
    ibc         = 0
    eobc[LMP]   = 0
    eobc[RRP]   = 0
    eobc[PING]  = 0
  Received:
    total       = 1564
    error       = 0
    err_cksum   = 0
    eobc        = 1564
    ibc         = 0
    total[LMP]  = 0
    total[RRP]  = 0
    total[PING] = 0
    eobc[LMP]   = 1559
    eobc[RRP]   = 5
    eobc[PING]  = 0

Router#
```

The following example shows how to display VSLP packet counter information:

```
Router# show vslp packet counters
VSLP packet counters
  Transmitted:
    total       = 28738
    error       = 0
    err_cksum   = 0
    eobc              = 28738
      eobc[LMP]   = 28701
      eobc[RRP]   = 17
      eobc[PING]  = 20
    ibc               = 0
      ibc[LMP]      = 0
      ibc[RRP]      = 0
      ibc[PING]     = 0
  Received:
    total       = 28590
    error       = 0
    err_cksum   = 0
    eobc              = 28590
      eobc[LMP]   = 28552
```

```
        eobc[RRP]   = 18
        eobc[PING]  = 20
    ibc             = 0
        ibc[LMP]    = 0
        ibc[RRP]    = 0
        ibc[PING]   = 0
Router#
```

The following example shows how to display a summary of RRP information:

```
Router# show vslp rrp summary
RRP information for Instance 1
------------------------------

Valid  Flags  Peer      Preferred  Reserved
              Count     Peer       Peer
------------------------------------------------
TRUE    V      1          1          1

Switch   Peer  Switch   Status  Preempt  Priority  Role    Local  Remote
         Group Number                                      SID    SID
----------------------------------------------------------------------
Local    0     1        UP      TRUE     200       ACTIVE   0      0
Remote   1     2        UP      FALSE    100       STANDBY  9272   271

Flags:  V - valid
```

standby port

To defer the activation of a port on the standby chassis during standby recovery, use the **standby port** virtual switching system (VSS) mode command. To disable port deferral activation, use the **no** form of this command.

standby port {**bringup** *num duration* | **delay** *seconds*}

Syntax Description

bringup	Configures the number of ports to be activated per cycle and the waiting time between cycles. Note: You must configure the standby port delay time before you can configure the standby port bringup time.
num	Number of ports to be activated per cycle. Range: 1 to 100. Default: 1.
duration	Period of time in seconds between cycles. Range: 1 to 10. Default: 1.
delay *seconds*	Specifies the period in seconds before port activation is performed. Range: 30 to 3600. Default: 0.

Command Default

Port deferral activation is disabled if **standby port delay** is not configured. If port deferral activation is enabled, the default number of ports activated in one cycle is one and the duration of the cycle is one second.

Command Modes

Virtual switch configuration submode (config-vs-domain)

Command History

Release	Modification
12.2(33)SXH2	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Note   We recommend that enter you this command under TAC supervision.

Note   You must configure the **standby port delay** command before you can configure the **standby port bringup** command.

If the you configure the standby port bringup without configuring the standby port delay, a message is displayed asking you to configure the standby port delay first and then the standby port bringup. If you remove the standby port delay configuration, the standby port bringup is automatically removed.

In default configuration, all ports are activated simultaneously when a failed chassis is restarted as the standby chassis. You can enter the **standby port** command to defer the activation of ports that are not virtual switch link (VSL) ports and then activate the ports in groups over a period of time.

You can enter the **standby port** command to defer the activation of ports that are not virtual switch link (VSL) ports and then activate the ports in groups over a period of time. This can help in reducing traffic loss on the standby ports and alleviate the high CPU utilization on the active switch and route processors during system initialization of the standby chassis.

Examples   The following example shows how to configure the period in seconds before port activation is performed:

```
Router(config)# switch virtual domain 22
Router (config-vs-domain)# standby port delay 400
Router (config-vs-domain)#
```

The following example shows how to configure the bringup delay for a port's activation during a standby recovery:

```
Router(config)# switch virtual domain 22
Router (config-vs-domain)# standby port bringup 2 30
Router (config-vs-domain)#
```

Related Commands

Command	Description
switch virtual domain	Assigns a switch number and enters virtual switch domain configuration submode.

switch (virtual switch)

To assign a switch number, use the **switch** command in virtual switch domain configuration submode.

switch *num* [**location** *string* | **preempt** *delay* | **priority** *priority*]

Syntax Description

num	Switch number; valid values are 1 or 2.
location	Location of the virtual switch file.
string	Name of the virtual switch file in the chassis.
preempt	(Optional) Enables preemption.
delay	Delay in minutes before the standby chassis takes over as the active chassis. Range: 5 to 20. Default: 5.
priority *priority-value*	(Optional) Specifies a priority number to determine the standby chassis that will become the new active chassis if the active chassis fails. Range: 1 (lowest priority) to 255 (highest priority).

Command Default

Switch 1 and Switch 2 *priority-value* settings are 100.

Command Modes

Virtual switch domain configuration submode (config-vs-domain)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced
12.2(33)SXI02	Support for the command was introduced. The keyword **preempty** *delay* is not available on this release.
12.2(33)SXJ	Support for the command was introduced. The keyword **preempty** *delay* is not available on this release.
12.2(50)SY	Support for this command was introduced. The keyword **preempty** *delay* is not available on this release.
15.0(1)SY	Support for this command was introduced.The keyword **preempty** *delay* has been removed from this release and all future releases.
15.1(1)SY	Support for **location** *string* keyword was introduced.

Usage Guidelines

You must set the virtual domain name and the switch number prior to converting the chassis into a virtual switch. You cannot configure the switch number after the chassis is in virtual switch mode.

When you bring up the virtual switch, the role resolution logic validates that the chassis numbers are different in the two chassis.

When you configure **preempt**, the switch with the highest priority assumes the active role during role negotiation.

The **preempt** keyword is not support in any of the SY releases.

Examples
The following example shows how to assign a switch number, configure the virtual switch domain, and save the switch virtual domain name:

```
Router1(config)# switch virtual domain 100
Router1(config-vs-domain)# switch 1 priority 20
Router1(config-vs-domain)# switch 1 preempt 12
Router1(config-vs-domain)# switch 1 location standby
Router1(config-vs-domain)#
```

Related Commands

Command	Description
switch virtual domain (virtual switch)	Configures the virtual switch domain number and enter the virtual switch domain configuration submode.

switch accept mode virtual (virtual switch)

To select the switch mode, use the **switch accept mode virtual** command in privileged EXEC mode.

switch accept mode virtual

Syntax Description

This command has no arguments or keywords.

Command Default

This command has no default settings.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced
12.2(50)SY	Updated output for auto-configuring the standby VSL.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

For the VSS to operate correctly, the active chassis needs the configuration information for the other end of the VSL link. The **switch accept mode virtual** command automatically copies the VSL link configuration from the standby chassis onto the active chassis. The updated configuration is automatically saved to the startup configuration file on the active and standby chassis.

The **switch accept mode virtual** command performs this action only the first time that the chassis come up as a VSS.

Note The standby chassis must be in hot standby state for the **switch accept mode virtual** command to execute successfully.

There are no **no** forms of this command.

Examples

The following example shows how to configure a device in the distribution layer as a standalone switch that has a switch number of 1 in Cisco IOS Release 12.2(33)SXI4 or earlier:

```
Router1# switch accept mode virtual
switch virtual domain 1
 switch 2 preempt
 switch 2 priority 120
power redundancy-mode combined switch 2
no power enable switch 2 module 2
interface Port-channel20
 switch virtual link 2
 no shutdown
interface TenGigabitEthernet2/1/1
 channel-group 20 mode on
 no shutdown
```

```
interface TenGigabitEthernet2/1/2
 channel-group 20 mode on
 no shutdown
interface TenGigabitEthernet2/1/3
 channel-group 20 mode on
 no shutdown
interface TenGigabitEthernet2/1/4
 channel-group 20 mode on
 no shutdown
interface TenGigabitEthernet2/1/5
 channel-group 20 mode on
 shutdown
interface TenGigabitEthernet2/1/6
 channel-group 20 mode on
 no shutdown
interface TenGigabitEthernet2/1/7
 channel-group 20 mode on
 no shutdown
interface TenGigabitEthernet2/1/8
 channel-group 20 mode on
 shutdown

This command will populate the above VSL configuration from
the standby switch into the running configuration.
The startup configuration will also be updated with the
new merged configuration if merging is successful.
Do you want to proceed? [yes/no]: yes
Merging the standby VSL configuration...

%Power admin state updated
Building configuration...
[OK]
Router#
```

The following example shows how to configure a device in the distribution layer as a standalone switch that has a switch number of 1 in Cisco IOS Release 12.2(50)SY or later:

```
Router# switch accept mode virtual
This command is no longer required since standby VSL configuration merge is done
automatically.
Router#
```

switch convert mode (virtual switch)

To select the switch mode, use the **switch convert mode** command in privileged EXEC mode.

switch convert mode {**stand-alone** | **virtual**}

Syntax Description

stand-alone	Specifies standalone mode.
virtual	Specifies virtual switch mode.

Command Default

The standalone mode is the default mode.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

You must reboot both switches when you convert a switch to virtual switch mode.

In a VSS, the interface naming convention includes the switch number. For example, you must use switch/module/port to specify a port on a switching module. The switch convert mode virtual command converts the configuration file to use the VSS naming convention, and saves a backup copy of the file in the RP bootflash.

Note After you confirm the command (by entering **yes** at the prompt), the switch converts the configuration file and restarts both chassis. After the restart, the chassis is in virtual switch mode. From this point on, you must specify interfaces with three identifiers (*switch*/*module*/*port*).

There are no **no** forms of this command. You have to specify **stand-alone** or **virtual** mode.

You can enter the **switch convert mode virtual** command only after the standby switch is fully operational (in hot standby mode). If you enter the command before the standby switch is fully operational, a message is displayed telling you to try again later.

Note If you have configured your config-register with a value that would skip file parsing during the bootup process, your change to either a standalone or virtual switch will not take place until you reconfigure your config-register. The config-register must be allowed to parse files in order to ensure the conversion from either a standalone or virtual switch.

Examples   The following example shows how to configure a device in the distribution layer as a standalone switch that has a switch number of 1:

```
Router1# switch convert mode virtual
This command will convert all interface names to naming convention "interface-type
chassis-number/slot/port", save the running config to startup-config and reload the
switch.
Do you want proceed? [yes/no]: yes
Converting interface names
Building Configuration...
[OK]
Saving converted configuration to bootflash: ...
Destination filename [startup-config.converted_vs-20070723-235834]?
```

switch read switch_num

To read the switch processor (SP) ROMMON variable, use the **switch read switch_num** command in EXEC mode.

switch read switch_num {**local** | **peer**}

Syntax Description

local	Specifies to read the active SP ROMMON switch number.
peer	Specifies to read the standby SP ROMMON switch number

Defaults

This command has no default settings.

Command Modes

EXEC mode

Command History

Release	Modification
12.2(33)SXI	Support for this command was introduced on the Supervisor Engine 720.
12.2(33)SXI4	Added support for **local** and **peer** keywords in standalone and VSS mode.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

The **switch read switch_num** command is available in both standalone and VSS modes.

In a standalone setting, use the **switch read switch_num** command to read the value of the active or standby SP ROMMON.

In VSS mode, use the **switch read switch_num** command to read the value of the active or standby switch supervisor engines SP ROMMON. In a system with four supervisor engines, the in-chassis active (ICA) and in-chassis standby (ICS) should already have the same switch number.

Examples

This example shows how to read the active SP ROMMON:

```
Router# switch read switch local
```

Related Commands

Command	Description
switch set switch	Sets the SP ROMMON variable.

switch set switch_num

To set the Switch Processor (SP) ROMMON variable, use the **switch set switch_num** command in EXEC mode.

switch set switch_num {*switch_num*} {**local** | **peer**}

Syntax Description

switch_num	Specifies the switch to be set to SP ROMMON.
local	Specifies the active SP ROMMON switch number.
peer	Specifies the standby SP ROMMON switch number

Defaults

This command has no default settings.

Command Modes

EXEC mode

Command History

Release	Modification
12.2(33)SXI	Support for this command was introduced on the Supervisor Engine 720.
12.2(33)SXI4	Added support for **local** and **peer** keywords in standalone and VSS mode.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

The **switch set switch_num** command is only available in standalone mode. Because the **switch set switch_num** command is available only while the switch is in standalone mode, both the local and peer supervisor engines SP ROMMON switch numbers should be set to the same value.

The **switch set switch_num** command sets or changes the SP ROMMON switch number. Currently, you can set the number to 1 or 2.

The **switch set switch_num** command is used only as part of the shortcut process to bring up VSS by reusing a saved and matched VSS configuration without going through the actual standalone-to-VSS conversion process. We usually recommend that you follow the official supported VSS conversion process.

Examples

This example shows how to set the active SP ROMMON to 2:

```
Router# switch set switch_num 2 local
```

Related Commands

Command	Description
switch read switch_num	Reads the SP ROMMON variable.

Cisco IOS Virtual Switch Command Reference

switch virtual domain (virtual switch)

To configure the virtual switch domain number and enter the virtual switch domain configuration submode, use the **switch virtual domain** command in global configuration mode.

> **switch virtual domain** *number*

Syntax Description

number	Virtual switch domain number. Range: 1 to 255.

Command Default

No virtual switch domain number is configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

When you enter the **switch virtual domain** command, you enter the virtual switch domain configuration submode, and the prompt changes to Router1(config-vs-domain)#. Within the virtual switch domain configuration submode, the following commands are available:

- **default**—Sets a command to its defaults
- **exit**—Exits the virtual-switch-domain-mode and returns to the global configuration mode.
- **no**—Negates a command or set its defaults
- **switch** *num*—Assigns the switch number. See the **switch (virtual switch)** command for additional information.

You must configure the same virtual switch domain number on both chassis of the virtual switch. The virtual switch domain is a number between 1 and 255, and must be unique for each virtual switch in your network.

Note The domain identification takes effect only after you enter the **switch convert mode virtual** command.

Note The switch number is not stored in the startup or running configuration, because both chassis use the same configuration file (but must not have the same switch number).

Examples   The following example shows how to configure the virtual switch number and virtual switch domain on two switches:

```
Router1(config)# switch virtual domain 100
Router1(config-vs-domain)# switch 1
Router1(config-vs-domain)# exit
Router2(config)# switch virtual domain 100
Router2(config-vs-domain)# switch 2
Router2(config-vs-domain)# exit
```

Related Commands

Command	Description
switch (virtual switch)	Assigns a switch number and enters virtual switch domain configuration submode.

switch virtual in-chassis standby switch

To enable the supervisor engine, use the **switch virtual in-chassis standby swtich** command in EXEC mode.

switch virtual in-chassis standby switch {*switch-id*} {**enable** | **disable**}

Syntax Description

switch *switch-id*	Specifies the supervisor engine to be disabled or enabled.
enable	Specifies inchassis standby is enabled.
disable	Specifies inchassis standby is disabled.

Defaults

This command has no default settings.

Command Modes

EXEC mode

Command History

Release	Modification
12.2(33)SXI4	Support for this command was introduced on the Supervisor Engine 720.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

Use this command only with an ISSU system that has four supervisor engines installed: two in each chassis. Use this command only after a particular ICS has been disabled, and you need to reenable the ICS.

This command ensures that the ICS can participate in the ISSU cycle. However, you still need to boot up the ICS manually from ROMMON with the desired image. After you enter this command, a message is displayedthat indicates that you need to manually boot up from ROMMON.

Examples

This example shows how to enable a supervisor engine with the switch ID of 3:

```
Router# switch virtual in-chassis standby switch 3 enable
```

This example shows how to disable a supervisor engine with the switch ID of 3:

```
Router# switch virtual inc-hassis standby switch 3 disable
```

Related Commands

Command	Description
switch virtual in-chassis standby bootup version mismatch-check	Checks the version of your ISSU in-chassis active (ICA) supervisor engines.

switch virtual in-chassis standby bootup version mismatch version-check

To check the versions on your ISSU in-chassis standby active (ICA) supervisor engines, use the **switch virtual in-chassis standby bootup version mismatch version-check** command in EXEC mode. To disable version checks, use the no form of this command.

switch virtual in-chassis standby standby bootup version mismatch version check

no switch virtual in-chassis standby standby bootup version mismatch version check

Defaults

Version mismatch checks occur by default.

Command Modes

EXEC mode (#)

Command History

Release	Modification
12.2(33)SXI4	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

If a version mismatch occurs your ICA is dropped to ROMMON mode.

Examples

This example shows how to disable version mismatch checks on your ICA:

```
Router# no switch virtual in-chassis standby bootup version mismatch version-check
Router#
```

Related Commands

Command	Description
switch virtual in-chassis standby switch	Disables the ICS.

Cisco IOS Virtual Switch Command Reference

switch virtual link (virtual switch)

To associate a switch to an interface, use the **switch virtual link** command in interface configuration mode.

switch virtual link *switch-number*

Syntax Description

switch-number	Switch number; valid values are 1 and 2.

Command Default

The interfaces are not associated by default.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines

The virtual switch link (VSL) is configured with a unique port channel on each chassis. You must add the VSL physical ports to the port channel. The VSL channel group must contain a minimum of two ports.

Examples

The following example shows how to associate switch 2 to a port channel:

```
Router-2(config)# interface port-channel 20
Router-2(config-if)# switch virtual link 2
Router-2(config-if)#
```

vslp interval (virtual switch)

To configure the virtual switch link protocol (VSLP) hello packet interval, use the **vslp interval** command in interface configuration mode. To return to the default settings, use the **no** form of this command.

vslp interval *interval* **min_rx** *min-interval* **multiplier** *factor*

no vslp interval

Syntax Description	*interval*	Hello packet interval in milliseconds between the transmission of hello packets. Range: 300 to 5000.
	min_rx *min-interval*	Specifies the minimum interval in milliseconds for received hello packets. Range: 300 to 10000.
	multiplier *factor*	Specifies a factor in which, if no hello packets are received, the link is flagged as non operational. Range: 3 to 50.

Command Default   The interfaces are not associated by default.

Command Modes   Interface configuration (config-if)

Command History

Release	Modification
12.2(33)SXH1	Support for this command was introduced.
12.2(50)SY	Support for this command was introduced.
15.0(1)SY	Support for this command was introduced.

Usage Guidelines   When you specify a factor, the formula is if no hello packets are received in (min_rx * multiplier) milliseconds, the link is flagged as non-operational.

Examples   The following example shows how to configure the virtual switch link protocol (VSLP) hello packet interval:

```
Router-2(config-if)# vslp interval 400 min_rx 500
Router-2(config-if)#
```

Cisco IOS Virtual Switch Command Reference