show mls cef

To display the MLS-hardware Layer 3-switching table entries, use the **show mls cef** command.

show mls cef [**ip**] [*prefix* [*mask-length* | **load-info**]] [**detail**] [**module** *number*]

show mls cef [**ip**] [{**lookup** ...} | {**multicast** ...} | {**rpf** ...} | {**vpn** ...} | {**vrf** ...}]

show mls cef [{**adjacency** ...} | {**block** *block-number* [**entries**]} | {**config-register** *reg-address*} | {**diags** [**detail**]} | {**entry** *index* [**detail**]} | {**exact-route** ...} | {**hardware** [**module** *number*]} | {**inconsistency** ...} | {**lookup** ...} | {**masks** [*type*] [**module** *number*]} | {**rpf** ...} | {**statistics** ...} | {**summary** [**module** *number*]} | {**tunnel fragment**} | {**used-blocks** [*type*] [**module** *number*]} | {**vpn** ...} | {**vrf** ...}]

show mls cef [{**eom** ...} | {**ip** ...} | {**ipv6** ...} | {**mpls** ...}]

Syntax Description

ip	(Optional) Displays IPv6 unicast entries in the MLS-hardware Layer 3-switching table; see the "Usage Guidelines" section for additional information.
prefix	(Optional) Entry prefix in the format A.B.C.D.
mask-length	(Optional) Mask length; valid values are from 0 to 32.
load-info	(Optional) Displays output with a hash value next to each adjacency.
detail	(Optional) Displays detailed hardware information. See the "Usage Guidelines" section for important information.
module *number*	(Optional) Displays information about the entries for a specific module.
lookup ...	(Optional) Displays IP entries in the MLS-hardware Layer 3-switching table for the specified destination IP address. See the **show mls cef lookup** command.
multicast ...	(Optional) Displays IP entries in the MLS-hardware Layer 3-switching table in the compact CEF table display format; see the **show mls cef ip multicast** command.
rpf ...	(Optional) Displays information about the RPF hardware in the MLS-hardware Layer 3-switching table; see the **show mls cef rpf** command.
vpn ...	(Optional) Displays information about the VPN ID CEF table. See the "Usage Guidelines" section for important information.
vrf ...	(Optional) Displays information about the CEF table for the specified VRF name.
adjacency ...	(Optional) Displays information about the MLS-hardware Layer 3-switching adjacency node; see the **show mls cef adjacency** command.
block *block-number*	(Optional) Displays information about the mask-block utilization for a specific block; valid values are from 0 to 4294967295. See the "Usage Guidelines" section for important information.
entries	(Optional) Displays the mask-block utilization entries. See the "Usage Guidelines" section for important information.
config-register *reg-address*	(Optional) Displays information about the hardware configuration register for a specific register. See the "Usage Guidelines" section for important information.
diags	(Optional) Displays information about the diagnostic entry. See the "Usage Guidelines" section for important information.

entry *index*	(Optional) Specifies the specified prefix entry index to display; valid values are from 0 to 4294967295. See the "Usage Guidelines" section for important information.
exact-route ...	(Optional) Displays information about hardware load sharing; see the **show mls cef exact-route** command.
hardware	(Optional) Displays a summary of the hardware information. See the "Usage Guidelines" section for important information.
inconsistency ...	(Optional) Displays information about the consistency checker; see the **show mls cef inconsistency** command.
masks ...	(Optional) Displays information about the mask. See the "Usage Guidelines" section for important information.
statistics ...	(Optional) Displays the number of switched packets and bytes; see the **show mls cef statistics** command.
tunnel fragment	(Optional) Displays the operational status of tunnel fragmentation.
summary ...	(Optional) Displays a summary of rates in the hardware for each protocol; see the **show mls cef summary** command.
used-blocks	(Optional) Displays a list of used blocks; see the "Usage Guidelines" section for important information.
eom ...	Displays information about the EoM protocol; this keyword is not supported.
ip ...	Displays information about the IP protocol; see the "Usage Guidelines" section for additional information.
ipv6 ...	Displays information about the IPv6 protocol.
mpls ...	Displays information about MPLS; see the **show mls cef mpls** command.

Command Default

If you do not specify a protocol, the default display is for IP and the global CEF table.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

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

The following options are for expert users only and are not documented:

- **load-info**
- **detail**
- **block** *block-number* [**entries**]
- **config-register** *reg-address*}
- **diags** [**detail**]
- **entry** *index* [**detail**]
- **hardware** [**module** *number*]
- **masks** [*type*]
- **used-blocks** [*type*]
- **vpn**

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

Use the **show mls cef** [**ip**] **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** command to session into the supervisor engine to enter the commands.

The **show mls cef** command offers three levels of options as follows:

- Protocol-independent options—The following keywords are not protocol specific:
  - **adjacency**
  - **exact-route**
  - **inconsistency**
  - **module**
  - **rpf**
  - **statistics**
  - **summary**
  - **used-blocks**
  - **vpn**
  - **vrf**
- Protocol-dependent keywords—The following keywords specify a protocol:
  - **eom**
  - **ip**
  - **ipv6**
  - **mpls**
- Default keywords—The following keywords display identical output for both the **show mls cef** and **show mls cef ip** commands:
  - *prefix*
  - **lookup**

- **multicast**—This keyword is not supported on systems configured with a Supervisor Engine 720.
- **module**
- **rpf**
- **vpn**
- **vrf**

Examples

This example shows how the **show mls cef** and **show mls cef ip** commands are identical:

```
Router# show mls cef

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
68     1.1.1.0/32          punt
69     1.1.1.255/32        punt
70     2.2.2.100/32        punt
71     2.2.2.0/32          punt
72     2.2.2.255/32        punt
73     2.2.2.5/32          Gi5/2,          0000.c005.0205
74     0.0.0.0/32          punt
75     255.255.255.255/32  punt
76     200.1.22.22/32      punt
77     200.0.0.0/32        punt
78     200.255.255.255/32  punt
79     200.1.1.153/32      Vl30,           0050.808b.8200
81     200.1.1.91/32       Vl30,           0004.4eef.8800
82     200.1.1.100/32      Vl30,           00d0.bb02.0400
83     200.12.223.3/32     Vl30,           00d0.061b.7000
84     200.2.5.3/32        Vl30,           00d0.061d.200a
85     200.1.1.101/32      Vl30,           0007.ecfc.e40a
86     200.0.100.1/32      Vl30,           0050.2a8d.700a
87     200.1.1.104/32      Vl30,           0050.0f2d.ac00
88     223.255.254.226/32  Vl30,           0050.2a8d.700a
89     2.2.2.7/32          Gi5/2,          0000.c005.0207
90     1.1.1.5/32          Gi5/1,          0000.0101.0105
3200   224.0.0.0/24        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#
```

This example shows how to display all the MLS-hardware Layer 3-switching table IP entries:

```
Router# show mls cef ip

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
68     1.1.1.0/32          punt
69     1.1.1.255/32        punt
```

```
70      2.2.2.100/32         punt
71      2.2.2.0/32           punt
72      2.2.2.255/32         punt
73      2.2.2.5/32           Gi5/2,          0000.c005.0205
74      0.0.0.0/32           punt
75      255.255.255.255/32   punt
76      200.1.22.22/32       punt
77      200.0.0.0/32         punt
78      200.255.255.255/32   punt
79      200.1.1.153/32       Vl30,           0050.808b.8200
81      200.1.1.91/32        Vl30,           0004.4eef.8800
82      200.1.1.100/32       Vl30,           00d0.bb02.0400
83      200.12.223.3/32      Vl30,           00d0.061b.7000
84      200.2.5.3/32         Vl30,           00d0.061d.200a
85      200.1.1.101/32       Vl30,           0007.ecfc.e40a
86      200.0.100.1/32       Vl30,           0050.2a8d.700a
87      200.1.1.104/32       Vl30,           0050.0f2d.ac00
88      223.255.254.226/32   Vl30,           0050.2a8d.700a
89      2.2.2.7/32           Gi5/2,          0000.c005.0207
90      1.1.1.5/32           Gi5/1,          0000.0101.0105
3200    224.0.0.0/24         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 2-80 describes the fields in the examples.

Table 2-80 show mls cef 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 PISA for further processing. • *mac-address*—Packets matching the prefix are forwarded to this specific next hop or the final destination host if directly attached.

This example shows how to display the operational status of tunnel fragmentation:

```
Router# show mls cef tunnel fragment
Tunnel Fragmentation:       Enabled
Router#
```

Related Commands

Command	Description
show mls cef summary	Displays the number of routes in the MLS-hardware Layer 3-switching table for all the protocols.

show mls cef adjacency

To display information about the MLS-hardware Layer 3-switching adjacency node, use the **show mls cef adjacency** command.

show mls cef adjacency [**all** | **decap-tunnel** | {**encap-tunnel** *ip-src-addr*} | {**entry** *index* [**to** *end-range*]} | {**flags** *lower-flag upper-flag*} | **mac-address** *number* | **mac-rewrite** | **macv4** | {**mpls** [*label*]} | **multicast** | **nat** | **recirculation** | **special** | **tcp** | **usage**] [**detail**] [**module** *number*]

Syntax Description

all	(Optional) Displays all application-allocated entries.
decap-tunnel	(Optional) Displays the decapsulated tunneled-packet information.
encap-tunnel *ip-src-addr*	(Optional) Displays the encapsulated tunnel-adjacency entry that matches the specified address.
entry *index*	(Optional) Displays the adjacency-entry information for the specified index; valid values are from 0 to 1048575.
to *end-range*	(Optional) Specifies the index range to display adjacency-entry information; valid values are from 0 to 1048575.
flags	(Optional) Displays information about the specified bit flags. See the "Usage Guidelines" section for additional information.
lower-flag	Lower 32-bits flag values to display; valid values are 0 to FFFFFFFF.
upper-flag	Upper 32-bits flag values to display; valid values are 0 to FFFFFFFF.
mac-address *number*	(Optional) Displays information about the matched MAC-address adjacency for the specified 48-bit hardware address in the H.H.H format.
mac-rewrite	(Optional) Displays information about the MAC-rewrite adjacency.
macv4	(Optional) Displays information about the MACv4 adjacency.
mpls	(Optional) Displays information about the MPLS adjacency.
label	(Optional) MPLS label to display adjacency-entry information; valid values are from 0 to 1048575.
multicast	(Optional) Displays information about the multicast adjacency.
nat	(Optional) Displays information about the NAT adjacency.
recirculation	(Optional) Displays information about the recirculated-adjacency entry.
special	(Optional) Displays information about the special adjacencies.
tcp	(Optional) Displays information about the TCP-application adjacency.
usage	(Optional) Displays information about the adjacency usage.
detail	(Optional) Displays hardware-entry details.
module *number*	(Optional) Displays information about the adjacency node for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **decap-tunnel** and **endcap-tunnel** keywords are used to display the tunnel nodes. The encapsulator node is considered the tunnel-entry point and the decapsulator node is considered the tunnel-exit point. There may be multiple source-destination pairs using the same tunnel between the encapsulator and decapsulator.

The **decap-tunnel** and **endcap-tunnel** keywords are not supported on Catalyst 6500 series switches that are configured with a Supervisor Engine 720.

The **flags** keyword applies to all adjacency formats (for example, mac-rewrite, mpls, and multicast) and indicates the bits that are set in the adjacency for the specific adjacency.

The **module** *number* keyword and argument designate the module and port number. Valid values depend on the chassis and module used. For example, if you have a 48-port 10/100BASE-T Ethernet module 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.

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

MLS-hardware Layer 3-switching adjacency statistics are updated every 60 seconds.

You can display hardware-switched IP-directed broadcast information by entering the **show mls cef adjacency mac-address** *number* **detail** command.

For each MLS-hardware Layer 3-switching FIB entry, MLS-hardware Layer 3 switching stores Layer 2 information from the PISA for adjacent nodes in the MLS-hardware Layer 3-switching adjacency table. Adjacent nodes are directly connected at Layer 2. To forward traffic, MLS-hardware Layer 3 switching selects a route from a MLS-hardware Layer 3-switching FIB entry, which points to a MLS-hardware Layer 3-switching adjacency entry, and uses the Layer 2 header for the adjacent node in the adjacency table entry to rewrite the packet during Layer 3 switching. MLS-hardware Layer 3 switching supports one million adjacency-table entries.

Examples

This example shows how to display information for all adjacency nodes:

```
Router# show mls cef adjacency all

Index: 5        smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0

Index: 32773    smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0
<Output is truncated>
```

This example shows how to display the adjacency-entry information for a specific index:

```
Router# show mls cef adjacency entry 132

Index: 132      smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0
```

This example shows how to display the adjacency-entry information for a range of indexes:

```
Router# show mls cef adjacency entry 132 to 134

Index: 132      smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0

Index: 133      smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0

Index: 134      smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0
Router#
```

This example shows how to display recirculation-adjacency information:

```
Router# show mls cef adjacency recirculation detail
Index: 6        smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 65535, vlan: 0, dindex: 0x0, ccc = 110,
                format: RECIR, l3rw_vld: 1
Router#
```

This example shows how to display specific bit flags:

```
Router# show mls cef adjacency flags 8408 0

STAT_REQUIRED NO_STAT CAP1 IQO UTTL UTOS
Router#
```

This example shows how to display adjacency-node information for a specific MAC address:

```
Router# show mls cef adjacency mac-address 00e0.f74c.842d

Index: 133138   smac: 00d0.061d.200a, dmac: 00e0.f74c.842d
                mtu: 1518, vlan: 45, dindex: 0x0, l3rw_vld: 1
                packets: 0, bytes: 0

Index: 133144   smac: 00d0.061d.200a, dmac: 00e0.f74c.842d
                mtu: 1518, vlan: 45, dindex: 0x0, l3rw_vld: 1
                packets: 0, bytes: 0
Router#
```

This example shows how to display the MAC-rewrite adjacency information:

```
Router# show mls cef adjacency mac-rewrite

Index: 133132   smac: 0000.0000.0000, dmac: 0000.0000.0000
                mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
                packets: 0, bytes: 0

Index: 133133   smac: 000a.421f.3000, dmac: 0050.2a8d.700a
                mtu: 1518, vlan: 1, dindex: 0x0, l3rw_vld: 1
                packets: 0, bytes: 0
```

```
Index: 133134  smac: 000a.421f.3000, dmac: 0000.7201.0001
               mtu: 1518, vlan: 72, dindex: 0x0, l3rw_vld: 1
               packets: 0, bytes: 0

Index: 133135  smac: 000a.421f.3000, dmac: 0000.7301.0001
               mtu: 1518, vlan: 73, dindex: 0x0, l3rw_vld: 1
               packets: 0, bytes: 0
<Output is truncated>
```

This example shows how to display information about the MPLS adjacency:

```
Router# show mls cef adjacency mpls detail
Index: 32768 smac: 0000.0000.0000, dmac: 0000.0000.0000
mtu: 1514, vlan: 0, dindex: 0x7FFA, l3rw_vld: 1
format: MPLS, flags: 0x1000408600
label0: 0, exp: 0, ovr: 0
label1: 0, exp: 0, ovr: 0
label2: 0, exp: 0, ovr: 0
op: POP
packets: 0, bytes: 0
Router#
```

This example shows how to display information about the multicast adjacency:

```
Router# show mls cef adjacency multicast detail
Index: 22 smac: 0000.0000.0000, dmac: 0000.0000.0000
mtu: 0, vlan: 0, dindex: 0x0, l3rw_vld: 0
format: MULTICAST, flags: 0x800
met2: 0, met3: 0
packets: 2232, bytes: 180684
Router#
```

This example shows how to display information about the NAT adjacency:

```
Router# show mls cef adjacency nat detail
Index: 200 mtu: 1522, vlan: 1063, dindex: 0x7FFA, l3rw_vld: 1
format: NAT, flags: 0x8600
ip_sa: 2.2.2.2, src_port: 100
ip_da: 3.3.3.3, dst_port: 300
delta_seq: 0, delta_ack: 0
packets: 0, bytes: 0
Router#
```

This example shows how to display information about the special adjacency:

```
Router# show mls cef adjacency special

Index: 0       smac: 0000.0000.0000, dmac: 0000.0000.0000
               mtu: 9234, vlan: 0, dindex: 0x0, l3rw_vld: 0
               format: MULTICAST, flags: 0x800 (mcast_fib_fail)
               met2: 0, met3: 0
               packets: 0, bytes: 0

Index: 1       smac: 0000.0000.0000, dmac: 0000.0000.0000
               mtu: 9234, vlan: 0, dindex: 0x0, l3rw_vld: 0
               format: MULTICAST, flags: 0x800 (mcast_fib_rf_cr)
               met2: 0, met3: 0
               packets: 0, bytes: 0

<Output is truncated>
```

This example shows how to display information about the TCP adjacency:

```
Router# show mls cef adjacency tcp detail
Index: 200 smac: abcd.abcd.abcd, dmac: 0000.1000.2000
mtu: 1518, vlan: 1063, dindex: 0x0, l3rw_vld: 1
format: MAC_TCP, flags: 0x8408
delta_seq: 10, delta_ack: 0
packets: 0, bytes: 0
Router#
```

This example shows how to display information about the adjacency usage:

```
Router# show mls cef adjacency usage

Adjacency Table Size: 1048576
ACL region usage: 2
Non-stats region usage: 128
Stats region usage: 31
Total adjacency usage: 161
Router#
```

show mls cef exact-route

To display information about the hardware load sharing, use the **show mls cef exact-route** command.

show mls cef exact-route *src-ip* {*dest-ip* | *src-l4port*} [*dest-l4port* | {**module** *num*}]

show mls cef exact-route {**vrf** *instance-name*} *src-ip* {*dest-ip* | *src-l4port*} [*dest-l4port* | {**module** *num*}]

Syntax Description

src-ip	Source IP address.
dest-ip	Destination IP address.
src-l4port	Layer 4-source port number; valid values are from 0 to 65535.
dest-l4port	(Optional) Layer 4-destination port number; valid values are from 0 to 65535.
module *num*	(Optional) Module number.
vrf *instance-name*	Displays the numeric VPN routing and forwarding ID for the specified VRF instance name.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **vrf** *instance-name* keyword and argument are not supported on Catalyst 6500 series switches that are configured with a Supervisor Engine 2.

Examples

This example shows how to display the hardware load-sharing information:

```
Router# show mls cef exact-route 172.20.52.16 172.20.52.31

Interface: Gi2/1, Next Hop: 255.255.255.255, Vlan: 4073, Destination Mac: 00d0.061d.200a

Router#
```

Related Commands

Command	Description
show ip cef exact-route	Displays the exact route for a source-destination IP address pair.

show mls cef exception

To display information about the CEF exception, use the **show mls cef exception** command.

show mls cef exception {**status** [**detail**] | **priorities**}

Syntax Description

status	Displays information about the CEF-exception status.
detail	(Optional) Displays detailed hardware information; see the "Usage Guidelines" section for more information.
priorities	Displays information about the CEF-exception priority.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **detail** keyword is for expert users only and is not documented.

In the output of the **show mls cef exception status** command, the following definitions apply:

- FALSE—Indicates that the protocol is not under the exception.
- TRUE—Indicates that the protocol is under the exception.

Examples

This example shows how to display detailed information about the CEF-exception status:

```
Router# show mls cef exception status
Current IPv4 FIB exception state = FALSE
Current IPv6 FIB exception state = FALSE
Current MPLS FIB exception state = FALSE
Router#
```

This example shows how to display the FIB ERM-exception priority:

```
Router# show mls cef exception priorities
Priority Protocol
=====================
1 IPv4
2 IPv6
3 MPLS
Router#
```

Related Commands

Command	Description
mls erm priority	Assigns the priorities to define an order in which protocols attempt to recover from the exception status.

show mls cef hardware

To display the MLS-hardware Layer 3-switching table entries, use the **show mls cef hardware** command.

show mls cef hardware [**module** *number*]

Syntax Description

module *number*	(Optional) Displays the adjacency-node information for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

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

Examples

This example shows how to display all the MLS-hardware Layer 3-switching table entries:

```
Router# show mls cef hardware

 CEF TCAM v2:
  Size:
        65536 rows/device, 4 device(s), 262144 total rows
        32 entries/mask-block
        8192 total blocks (32b wide)
        1212416 s/w table memory
  Options:
        sanity check: on
        sanity interval: 301 seconds
        consistency check: on
        consistency interval: 61 seconds
        redistribution: off
            redistribution interval: 120 seconds
            redistribution threshold: 10
        compression: on
            compression interval: 31 seconds
        tcam/ssram shadowing: on
  Operation Statistics:
        Entries inserted:               0000000000000024
        Entries deleted:                0000000000000005
        Entries compressed:             0000000000000000
        Blocks inserted:                0000000000000018
        Blocks deleted:                 0000000000000004
        Blocks compressed:              0000000000000000
        Blocks shuffled:                0000000000000002
        Blocks deleted for exception:   0000000000000000
```

```
        Direct h/w modifications:       0000000000000000

  Background Task Statistics:
        Consistency Check count:        0000000000014066
        Consistency Errors:             0000000000000000
        SSRAM Consistency Errors:       0000000000000000
        Sanity Check count:             0000000000002855
        Sanity Check Errors:            0000000000000000
        Compression count:              0000000000004621

        Exception Handling status    : on
        L3 Hardware switching status : on
        Fatal Error Handling Status  : Reset
        Fatal Errors:                   0000000000000000
        Fatal Error Recovery Count:     0000000000000000

  SSRAM ECC error summary:
        Uncorrectable ecc entries    : 0
        Correctable ecc entries      : 0
        Packets dropped              : 0
        Packets software switched    : 0

FIB SSRAM Entry status
----------------------
Key: UC - Uncorrectable error, C - Correctable error
        SSRAM banks  :  Bank0    Bank1
No ECC errors reported in FIB SSRAM.
```

show mls cef inconsistency

To display consistency-checker information, use the **show mls cef inconsistency** command.

show mls cef inconsistency [**module** *num* | **now** | **records**] [**detail**] [**module** *num*]

Syntax Description

module *num*	(Optional) Displays inconsistency information for the specified module.
now	(Optional) Runs a consistency check and displays any issues.
records	(Optional) Displays the inconsistency records.
detail	(Optional) Displays hardware-entry details.
module *num*	(Optional) Displays the adjacency-node information for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

If you enter the **show mls cef inconsistency** command with no arguments, this information is displayed:

- Consistency check count
- TCAM-consistency check errors
- SSRAM-consistency check errors

Examples

This example shows how to display information about the consistency checker:

```
Router# show mls cef inconsistency
Consistency Check Count       : 81
TCAM Consistency Check Errors : 0
SSRAM Consistency Check Errors : 0
Router#
```

This example shows how to display information about the consistency checker for a specific module:

```
Router# show mls cef inconsistency module 7
Consistency Check Count       : 11033
TCAM Consistency Check Errors : 0
SSRAM Consistency Check Errors : 0
Router#
```

This example shows how to run a consistency check and display any issues:

```
Router#  show mls cef inconsistency now
Performing TCAM check now ...done
No. of FIB TCAM Consistency Check Errors  : 0
Performing SSRAM check now ...done
No. of FIB SSRAM Consistency Check Errors : 0

Router#
```

This example shows how to display the consistency records:

```
Router# show mls cef inconsistency records
Consistency Check Count       : 11044
TCAM Consistency Check Errors : 0
SSRAM Consistency Check Errors : 0

Router#
```

show mls cef ip

To display the IP entries in the MLS-hardware Layer 3-switching table, use the **show mls cef ip** command.

show mls cef ip [*prefix* [*mask-length*]] [**detail**] [**module** *number*]

show mls cef ip accounting per-prefix

show mls cef ip {**lookup** ...} | {**multicast tcam** ...} | {**rpf** ...} | {**vpn** ...} | {**vrf** ...}

Syntax Description

prefix	(Optional) Entry prefix in the format A.B.C.D.
mask-length	(Optional) Mask length; valid values are from 0 to 32.
detail	(Optional) Displays hardware-entry details.
module *number*	(Optional) Displays the entries for a specific module.
accounting per-prefix	Displays all the prefixes that are configured for the statistic collection.
lookup ...	Displays the TCAM-entry index for the specified destination IP unicast address; see the **show mls cef lookup** command.
multicast tcam ...	Displays the IP entries in the MLS-hardware Layer 3-switching table in the compact CEF table-display format; see the "Usage Guidelines" section for additional information.
rpf ...	Displays the RPF-hardware information in the MLS-hardware Layer 3-switching table; see the **show mls cef rpf** command.
vpn ...	(Optional) Displays information about the VPN ID CEF table; see the "Usage Guidelines" section for more information.
vrf ...	Displays information about the VPN-instance CEF table.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

See the **show mls cef ip multicast tcam** command for information about this command.

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

The **vpn** keyword is for expert users only and is not documented.

Information in the output of the **show mls cef ip** command is also displayed in the **show mls cef** commands.

The lookup is performed as a "longest prefix match" and displays the TCAM-entry index that applies to the specified destination IP address.

The information output is in this format: Index, Prefix, Mask, and Adjacency.

Examples

This example shows how the **show mls cef** and **show mls cef ip** commands are identical:

```
Router# show mls cef

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
68     1.1.1.0/32          punt
69     1.1.1.255/32        punt
70     2.2.2.100/32        punt
71     2.2.2.0/32          punt
72     2.2.2.255/32        punt
73     2.2.2.5/32          Gi5/2,          0000.c005.0205
74     0.0.0.0/32          punt
75     255.255.255.255/32  punt
76     200.1.22.22/32      punt
77     200.0.0.0/32        punt
78     200.255.255.255/32  punt
79     200.1.1.153/32      Vl30,           0050.808b.8200
81     200.1.1.91/32       Vl30,           0004.4eef.8800
82     200.1.1.100/32      Vl30,           00d0.bb02.0400
83     200.12.223.3/32     Vl30,           00d0.061b.7000
84     200.2.5.3/32        Vl30,           00d0.061d.200a
85     200.1.1.101/32      Vl30,           0007.ecfc.e40a
86     200.0.100.1/32      Vl30,           0050.2a8d.700a
87     200.1.1.104/32      Vl30,           0050.0f2d.ac00
88     223.255.254.226/32  Vl30,           0050.2a8d.700a
89     2.2.2.7/32          Gi5/2,          0000.c005.0207
90     1.1.1.5/32          Gi5/1,          0000.0101.0105
3200   224.0.0.0/24        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#
```

This example shows how to display all the MLS-hardware Layer 3-switching table IP entries:

```
Router# show mls cef ip

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
68     1.1.1.0/32          punt
69     1.1.1.255/32        punt
70     2.2.2.100/32        punt
71     2.2.2.0/32          punt
72     2.2.2.255/32        punt
73     2.2.2.5/32          Gi5/2,          0000.c005.0205
74     0.0.0.0/32          punt
75     255.255.255.255/32  punt
76     200.1.22.22/32      punt
77     200.0.0.0/32        punt
78     200.255.255.255/32  punt
79     200.1.1.153/32      Vl30,           0050.808b.8200
81     200.1.1.91/32       Vl30           0004.4eef.8800
82     200.1.1.100/32      Vl30           00d0.bb02.0400
83     200.12.223.3/32     Vl30           00d0.061b.7000
84     200.2.5.3/32        Vl30           00d0.061d.200a
85     200.1.1.101/32      Vl30           0007.ecfc.e40a
86     200.0.100.1/32      Vl30           0050.2a8d.700a
87     200.1.1.104/32      Vl30           0050.0f2d.ac00
88     223.255.254.226/32  Vl30           0050.2a8d.700a
89     2.2.2.7/32          Gi5/2          0000.c005.0207
90     1.1.1.5/32          Gi5/1          0000.0101.0105
3200   224.0.0.0/24        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 2-81 describes the fields shown in the examples.

Table 2-81 show mls cef ip 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 information.

This example shows how to display the detailed MLS-hardware Layer 3-switching table entries:

```
Router# show mls cef ip 127.0.0.52 detail

Codes: M - mask entry, V - value entry, A - adjacency index, P - priority bit
       D - full don't switch, m - load balancing modnumber, B - BGP Bucket sel
       V0 - Vlan 0,C0 - don't comp bit 0,V1 - Vlan 1,C1 - don't comp bit 1
       RVTEN - RPF Vlan table enable, RVTSEL - RPF Vlan table select
```

```
Format: IPV4_DA - (8 | xtag vpn pi cr recirc tos prefix)
Format: IPV4_SA - (9 | xtag vpn pi cr recirc prefix)
M(194    ): E | 1 FFF  0 0 0 0   255.255.255.255
V(194    ): 8 | 1 0    0 0 0 0   127.0.0.52         (A:133120 ,P:1,D:0,m:0 ,B:0)
Router#
```

This example shows how to display all the prefixes that are configured for the statistic collection:

```
Router# show mls cef ip accounting per-prefix
     VRF              Prefix/Mask        Packets          Bytes

A - Active, I - Inactive
Router#
```

Related Commands

Command	Description
show mls cef	Displays the MLS-hardware Layer 3-switching table entries.

show mls cef ip multicast

To display the IP entries in the multilayer switching (MLS)-hardware Layer 3-switching table on the switch processor, use the **show mls cef ip multicast** command.

show mls cef ip multicast {**bidir | grp-only | source** *source-ip*} [**detail | group** *group-id* | **vlan** *rpf-vlanid*]

show mls cef ip multicast control [**detail | prefix** *prefix* | **vlan** *rpf-vlanid*]

show mls cef ip multicast group *group-id* [**detail | vlan** *rpf-vlanid*]

show mls cef ip multicast src-grp [**detail | group** *group-ip* | **source | vlan** *rpf-vlanid*]

show mls cef ip multicast subnet [**detail | prefix** *prefix* **| vlan** *rpf-vlanid*]

show mls cef ip multicast summary [*vpn-num*]

show mls cef ip multicast tcam [*prefix* [**mask**]] [**detail**] [**module** *num*] [**vrf** *src-ip* {*src-port* | *dst-ip*} [*dst-port* | **module** *num*]]

show mls cef ip multicast {**grp-mask | vlan** *rpf-vlanid* | **vpn** *vpn-id*} [**detail**]

Syntax Description

bidir	Displays Bidir information.
grp-only	Displays hardware-entry information that is based on (*,G) shortcuts; see the "Usage Guidelines" section for additional information.
source *source-ip*	Displays hardware-entry information based on the specified source IP address.
detail	(Optional) Displays hardware-entry details.
group *group-id*	(Optional) Displays hardware-entry information that is based on the specified group IP address.
vlan *rpf-vlanid*	(Optional) Displays information for a specific RPF VLAN ID; valid values are from 0 to 4095.
control	(Optional) Displays hardware-entry information that is based on (*,G/m) entries; see the "Usage Guidelines" section for additional information.
prefix *prefix*	(Optional) Displays hardware-entry information that is based on an IP subnet prefix.
src-grp	Displays hardware-entry information that is based on (S,G) shortcuts; see the "Usage Guidelines" section for additional information.
subnet	Displays hardware-entry information that is based on (S/m,*) shortcuts; see the "Usage Guidelines" section for additional information.
summary	Displays a summary of installed-hardware shortcuts.
tcam	Displays CEF-table information in a compact format; see the "Usage Guidelines" section for additional information.
mask	(Optional) Displays hardware-entry information that is based on the specified subnet mask.
vrf *src-ip*	(Optional) Displays the numeric VRF ID for the specified source IP address.
src-port	(Optional) Layer 4 source port; valid values are from 0 to 65535.
dst-ip	(Optional) Destination IP address.

dst-port	(Optional) Layer 4 destination port; valid values are from 0 to 65535.
grp-mask	Displays hardware-entry information that is based on Bidir (*,G/m) shortcuts.
vpn *vpn-id*	Displays hardware-entry information that is based on the specified VPN ID; valid values are from 0 to 4095.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

There are two MMLS modes, ingress and egress. The output displayed differs for each mode.

The hardware-entry types are as follows:

- {S/m,*}—Interface/mask (or subnet) entries that are used to catch a directly connected source.
- {*,G/m}—Groups that are served by the route processors as group/mask.
- {G,C}—G indicates a destination MAC address, which is derived from an IP-multicast address, and C indicates the ingress VLAN.
- {S,G,C}—S indicates the source IP address, G indicates the destination IP address, which is a multicast address, and C indicates the ingress VLAN, which is usually the RPF VLAN of the flow.
- {S,G}—Multicast-routing table entry that is maintained by the software or a multicast-forwarding table entry that is created in the FIB table.
- {*,G}—Same as {S,G}, except that the source address is a wildcard.

The DF index field ranges from 1 to 4 and is an index into the acceptance (PIM route processors multiplied by the DF) table. The acceptance table is used with DF forwarding and is used to identify the set of DF interfaces for each of the four RPs in a VPN.

Examples

This example shows how to display ingress hardware-entry information that is based on Bidir (*,G/m) shortcuts:

```
Router# show mls cef ip multicast grp-mask

Multicast CEF Entries for VPN#0
Flags: R - Control, S - Subnet, B - Bidir, C - Complete, P - Partial,
       c - Central Rewrite, p - Primary Input, r - Recirculation
Source/mask         Destination/mask    RPF/DF  Flags #packets      #bytes
rwindex  Output Vlans/Info
+-------------------+-------------------+-------+-----+-------------+-------------------+--
------+-------------------------------+
*                   226.2.2.0/24        Df0    BCp   0             0                   -
Vl50 [1 oifs]
*                   225.2.2.0/24        Df1    BCp   0             0                   -
Vl51 [1 oifs]
```

```
*                 227.2.2.0/24        Df1    BCp   0            0                 -
Vl51 [1 oifs]
Found 3 entries. 3 are mfd entries
Router#
```

This example shows how to display detailed ingress hardware-entry information that is based on Bidir (*,G/m) shortcuts:

```
Router# show mls cef ip multicast grp-mask detail
(*, 226.2.2.0/24)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:0 AdjPtr:7,32775,65543,98311 FibRpfNf:0 FibRpfDf:0 FibAddr:0x100
        rwvlans:0 rwindex:0x0 adjmac:0006.d606.e240 rdt:0 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1518 rwtype:L3 met2:0x0 met3:0x5
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0005
          V E C:  50 I:0x00449

(*, 225.2.2.0/24)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:1 AdjPtr:8,32776,65544,98312 FibRpfNf:0 FibRpfDf:0 FibAddr:0x102
        rwvlans:0 rwindex:0x0 adjmac:0006.d606.e240 rdt:0 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1518 rwtype:L3 met2:0x0 met3:0x6
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0006
          V E C:  51 I:0x0044B

(*, 227.2.2.0/24)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:1 AdjPtr:19,32787,65555,98323 FibRpfNf:0 FibRpfDf:0 FibAddr:0x104
        rwvlans:0 rwindex:0x0 adjmac:0006.d606.e240 rdt:0 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1518 rwtype:L3 met2:0x0 met3:0x7
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0007
          V E C:  51 I:0x0044B

Found 3 entries. 3 are mfd entries
Router#
```

This example shows how to display ingress-Bidir information:

```
Router# show mls cef ip multicast bidir

Multicast CEF Entries for VPN#0
Flags: R - Control, S - Subnet, B - Bidir, C - Complete, P - Partial,
       c - Central Rewrite, p - Primary Input, r - Recirculation
Source/mask         Destination/mask    RPF/DF  Flags #packets      #bytes
rwindex  Output Vlans/Info
+------------------+------------------+-------+-----+-------------+------------------+--
------+--------------------------------+
*                 225.2.2.2/32        Df1    BCp   0            0                 -
Vl51,Vl30 [2 oifs]
*                 225.2.2.1/32        Df1    BCp   0            0                 -
Vl51,Vl30 [2 oifs]
Found 2 entries. 2 are mfd entries
Router#
```

This example shows how to display detailed ingress-Bidir information:

```
Router# show mls cef ip multicast bidir detail

(*, 225.2.2.2)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:1 AdjPtr:10,32778,65546,98314 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE2
```

```
        rwvlans:0 rwindex:0x0 adjmac:0006.d606.e240 rdt:0 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1518 rwtype:L3 met2:0x0 met3:0xA
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x000A
          V  C:  51 I:0x004B5 P->19A0
        - V
          V E C:  30 I:0x0049B

(*, 225.2.2.1)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:1 AdjPtr:9,32777,65545,98313 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE0
        rwvlans:0 rwindex:0x0 adjmac:0006.d606.e240 rdt:0 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1518 rwtype:L3 met2:0x0 met3:0x8
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0008
          V  C:  51 I:0x004B1 P->199C
        - V
          V E C:  30 I:0x00499

Found 2 entries. 2 are mfd entries
Router#
```

This example shows how to display egress hardware-entry information that is based on Bidir (*,G/m) shortcuts:

```
Router# show mls cef ip multicast grp-mask

Multicast CEF Entries for VPN#0
Flags: R - Control, S - Subnet, B - Bidir, C - Complete, P - Partial,
       c - Central Rewrite, p - Primary Input, r - Recirculation
Source/mask         Destination/mask    RPF/DF  Flags #packets      #bytes
rwindex  Output Vlans/Info
+------------------+------------------+-------+-----+-------------+------------------+--
------+--------------------------------+
*                 225.2.2.0/24        Df0    BCp   0            0                 -
*                   225.2.2.0/24         -      Bpr   0             0
0x4AE    Vl151 [1 oifs]
*                   225.2.2.0/24         -      Br    0             0
0x40E    Vl151 [1 oifs]
*                 226.2.2.0/24        Df1    BCp   0            0                 -
*                   226.2.2.0/24         -      Bpr   0             0
0x4AE    Vl150 [1 oifs]
*                   226.2.2.0/24         -      Br    0             0
0x40E    Vl150 [1 oifs]
*                 227.2.2.0/24        Df0    BCp   0            0                 -
*                   227.2.2.0/24         -      Bpr   0             0
0x4AE    Vl151 [1 oifs]
*                   227.2.2.0/24         -      Br    0             0
0x40E    Vl151 [1 oifs]
Found 3 entries. 3 are mfd entries
Router#
```

This example shows how to display detailed egress hardware-entry information that is based on Bidir (*,G/m) shortcuts:

```
Router# show mls cef ip multicast grp-mask detail
(*, 225.2.2.0/24)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:0 AdjPtr:7,32775,65543,98311 FibRpfNf:0 FibRpfDf:0 FibAddr:0x120
        rwvlans:0 rwindex:0x0 rdt:0 E:0 CAP1:0
        fmt:recir l3rwvld:1 DM:0 mtu:1522 rwtype:RECIR
        packets:0000000000000 bytes:000000000000000000

        PI:1 (1) CR:0 (0) Recirc:1 (1)
```

```
        AdjPtr:8,32776,65544,98312 FibRpfNf:0 FibRpfDf:0 FibAddr:0x122
        rwvlans:0 rwindex:0x4AE adjmac:0006.d606.e240 rdt:1 E:1 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x5
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0005
          V E C:  51 I:0x0044C

        PI:0 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:9,32777,65545,98313 FibRpfNf:0 FibRpfDf:0 FibAddr:0x124
        rwvlans:0 rwindex:0x40E adjmac:0006.d606.e240 rdt:1 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x5
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0005
          V E C:  51 I:0x0044C

(*, 226.2.2.0/24)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:1 AdjPtr:10,32778,65546,98314 FibRpfNf:0 FibRpfDf:0 FibAddr:0x126
        rwvlans:0 rwindex:0x0 rdt:0 E:0 CAP1:0
        fmt:recir l3rwvld:1 DM:0 mtu:1522 rwtype:RECIR
        packets:0000000000000 bytes:000000000000000000

        PI:1 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:11,32779,65547,98315 FibRpfNf:0 FibRpfDf:0 FibAddr:0x128
        rwvlans:0 rwindex:0x4AE adjmac:0006.d606.e240 rdt:1 E:1 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x1C
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x001C
          V E C:  50 I:0x00447

        PI:0 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:12,32780,65548,98316 FibRpfNf:0 FibRpfDf:0 FibAddr:0x12A
        rwvlans:0 rwindex:0x40E adjmac:0006.d606.e240 rdt:1 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x1C
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x001C
          V E C:  50 I:0x00447

(*, 227.2.2.0/24)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:0 AdjPtr:13,32781,65549,98317 FibRpfNf:0 FibRpfDf:0 FibAddr:0x12C
        rwvlans:0 rwindex:0x0 rdt:0 E:0 CAP1:0
        fmt:recir l3rwvld:1 DM:0 mtu:1522 rwtype:RECIR
        packets:0000000000000 bytes:000000000000000000

        PI:1 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:14,32782,65550,98318 FibRpfNf:0 FibRpfDf:0 FibAddr:0x12E
        rwvlans:0 rwindex:0x4AE adjmac:0006.d606.e240 rdt:1 E:1 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x1D
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x001D
          V E C:  51 I:0x0044C

        PI:0 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:15,32783,65551,98319 FibRpfNf:0 FibRpfDf:0 FibAddr:0x130
        rwvlans:0 rwindex:0x40E adjmac:0006.d606.e240 rdt:1 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x1D
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x001D
          V E C:  51 I:0x0044C

Found 3 entries. 3 are mfd entries
Router#
```

This example shows how to display egress-Bidir information:

```
Router# show mls cef ip multicast bidir

Multicast CEF Entries for VPN#0
Flags: R - Control, S - Subnet, B - Bidir, C - Complete, P - Partial,
       c - Central Rewrite, p - Primary Input, r - Recirculation
Source/mask         Destination/mask    RPF/DF  Flags #packets      #bytes
rwindex  Output Vlans/Info
+-------------------+-------------------+-------+-----+------------+------------------+--
------+-------------------------------+
*                  225.2.2.2/32        Df0    BCp   0            0                 -
*                    225.2.2.2/32         -      Bpr   0             0
0x4AE    Vl51,Vl30 [2 oifs]
*                    225.2.2.2/32         -      Br    0             0
0x40E    Vl51,Vl30 [2 oifs]
*                  225.2.2.1/32        Df0    BCp   0            0                 -
*                    225.2.2.1/32         -      Bpr   0             0
0x4AE    Vl51,Vl30 [2 oifs]
*                    225.2.2.1/32         -      Br    0             0
0x40E    Vl51,Vl30 [2 oifs]

Found 2 entries. 2 are mfd entries
Router#
```

This example shows how to display detailed egress-Bidir information:

```
Router# show mls cef ip multicast bidir detail

(*, 225.2.2.2)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:0 AdjPtr:19,32787,65555,98323 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE6
        rwvlans:0 rwindex:0x0 rdt:0 E:0 CAP1:0
        fmt:recir l3rwvld:1 DM:0 mtu:1522 rwtype:RECIR
        packets:0000000000000 bytes:000000000000000000

        PI:1 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:20,32788,65556,98324 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE8
        rwvlans:0 rwindex:0x4AE adjmac:0006.d606.e240 rdt:1 E:1 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x22
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0022
          V  C:  51 I:0x004B3 P->24
          V E C:  30 I:0x004B6

        PI:0 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:21,32789,65557,98325 FibRpfNf:0 FibRpfDf:0 FibAddr:0xEA
        rwvlans:0 rwindex:0x40E adjmac:0006.d606.e240 rdt:1 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x22
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x0022
          V  C:  51 I:0x004B3 P->24
          V E C:  30 I:0x004B6

(*, 225.2.2.1)
        PI:1 (1) CR:0 (0) Recirc:0 (1)
        DFidx:0 AdjPtr:16,32784,65552,98320 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE0
        rwvlans:0 rwindex:0x0 rdt:0 E:0 CAP1:0
        fmt:recir l3rwvld:1 DM:0 mtu:1522 rwtype:RECIR
        packets:0000000000000 bytes:000000000000000000

        PI:1 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:17,32785,65553,98321 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE2
        rwvlans:0 rwindex:0x4AE adjmac:0006.d606.e240 rdt:1 E:1 CAP1:0
```

```
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x1E
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x001E
          V  C:  51 I:0x004AF P->20
          V E C:  30 I:0x004B2

        PI:0 (1) CR:0 (0) Recirc:1 (1)
        AdjPtr:18,32786,65554,98322 FibRpfNf:0 FibRpfDf:0 FibAddr:0xE4
        rwvlans:0 rwindex:0x40E adjmac:0006.d606.e240 rdt:1 E:0 CAP1:0
        fmt:mcast l3rwvld:1 DM:0 mtu:1522 rwtype:L3 met2:0x0 met3:0x1E
        packets:0000000000000 bytes:000000000000000000
        Starting Offset: 0x001E
          V  C:  51 I:0x004AF P->20
          V E C:  30 I:0x004B2

Found 2 entries. 2 are mfd entries
Router#
```

This example shows how to display TCAM information:

```
Router# show mls cef ip multicast tcam

Index  Group              Source             RPF/DF Interface
64     224.0.1.39         0.0.0.0            NULL
66     224.0.1.40         0.0.0.0            NULL
96     224.0.0.0          0.0.0.0            NULL
Router#
```

show mls cef ipv6

To display the hardware IPv6-switching table entries, use the **show mls cef ipv6** command.

show mls cef ipv6 [*vrf-number*] [*ip-address/mask*] [**acccounting per-prefix**] [**module** *number*]

show mls cef ipv6 exact-route *src-addr* [*L4-src-port*] *dst-addr* [*L4-dst-port*]

show mls cef ipv6 multicast tcam [*v6mcast-address*] [**detail**] [**internal**]

Syntax Description

vrf-number	(Optional) VRF number; valid values are from 0 to 4095.
ip-address/mask	(Optional) Entry IPv6 address and prefix mask; see the "Usage Guidelines" section for formatting information.
acccounting per-prefix	(Optional) Displays per-prefix accounting statistics.
module *number*	(Optional) Displays the entries for a specific module.
exact-route *src-addr*	Specifies the source IP address to display the hardware load sharing results.
L4-src-port	(Optional) Layer 4-source port number; valid values are from 0 to 65535.
dst-addr	Destination IP address.
L4-dst-port	(Optional) Layer 4-destination port number; valid values are from 0 to 65535.
multicast tcam	Displays IPv6-multicast entries.
v6mcast-address	(Optional) IPv6-multicast address.
detail	(Optional) Displays detailed hardware information.
internal	(Optional) Displays internal hardware information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

You can enter this command on the supervisor engine and MLS-hardware Layer 3-switching module consoles only. Enter the **remote login** command to session into the supervisor engine to enter the commands.

When entering the *ip-address/mask* argument, use this format, X:X:X:X::X/*mask,* where valid values for *mask* are from 0 to 128.

Up to 64 IPv6 prefixes are supported.

You must enter the *L4-src-port* and *L4-dst-port* arguments when the load-sharing mode is set to full, for example, when Layer 4 ports are included in the load-sharing hashing algorithm.

Examples

This example shows how to display the hardware IPv6-switching table entries:

```
Router# show mls cef ipv6
Codes:M-MPLS encap, + - Push label
Index Prefix Adjacency
524384 BEEF:6::6/128 punt
524386 5200::6/128 punt
524388 2929::6/128 punt
524390 6363::30/128 Fa1/48 , 0000.0001.0002
524392 3FFE:1B00:1:1:0:5EFE:1B00:1/128 punt
524394 2002:2929:6:2::6/128 punt
524396 2002:2929:6:1::6/128 punt
524398 6363::6/128 punt
524416 BEEF:6::/64 drop
524418 5200::/64 punt
524420 2929::/64 punt
524422 2002:2929:6:2::/64 punt
524424 2002:2929:6:1::/64 punt
524426 6363::/64 punt
524428 3FFE:1B00:1:1::/64 Tu4 , V6 auto-tunnel
524448 FEE0::/11 punt
524480 FE80::/10 punt
524512 FF00::/8 punt
524544 ::/0 drop
Router#
```

This example shows how to display the IPv6 entries for a specific IPv6 address and mask:

```
Router# show mls cef ipv6 2001:4747::/64

Codes:R - Recirculation, I-IP encap
M-MPLS encap, + - Push label
Index Prefix Out i/f Out Label
160 2001:4747::/64 punt
Router#
```

This example shows how to display all the IPv6-FIB entries that have per-prefix statistics available:

```
Router# show mls cef ipv6 accounting per-prefix
(I) BEEF:2::/64: 0 packets, 0 bytes

A - Active, I - Inactive
Router#
```

This example shows how to display detailed hardware information:

```
Router# show mls cef ipv6 detail

Codes: M - mask entry, V - value entry, A - adjacency index, P - FIB Priority
D - FIB Don't short-cut, m - mod-num
Format: IPv6_DA - (C | xtag vpn uvo prefix)
M(128 ): F | 1 FF 1 FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
V(128 ): C | 1 0 1 2001:4747::1253 (A:12 ,P:1,D:0,m:0 )
M(160 ): F | 1 FF 1 FFFF:FFFF:FFFF:FFFF::
V(160 ): C | 1 0 1 2001:4747:: (A:11 ,P:1,D:0,m:0 )
```

```
M(224 ): F | 1 FF 1 FFE0::
V(224 ): C | 1 0 1 FEE0:: (A:11 ,P:1,D:0,m:0 )
M(256 ): F | 1 FF 1 FFC0::
V(256 ): C | 1 0 1 FE80:: (A:12 ,P:1,D:0,m:0 )
M(352 ): F | 1 FF 1 FF00::
V(352 ): C | 1 0 1 FF00:: (A:12 ,P:1,D:0,m:0 )
M(480 ): F | 1 FF 1 ::
V(480 ): C | 1 0 1 :: (A:14 ,P:1,D:0,m:0
Router#
```

Related Commands

Command	Description
mls ipv6 acl compress address unicast	Turns on the compression of IPv6 addresses.

show mls cef logging

To display the contents of the TCAM-inconsistency buffer, use the **show mls cef logging** command.

show mls cef logging [**module** *num*]

Syntax Description		
	module *num*	(Optional) Displays the entries for a specific module.

Command Default This command has no default settings.

Command Modes EXEC (>)

Command History	Release	Modification
	12.2(18)ZY	Support for this command was introduced.

Usage Guidelines The TCAM-inconsistency buffer records any inconsistency that is found in the TCAM.

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

Examples This example shows how to display the contents of the TCAM inconsistency buffer:

```
Router# show mls cef logging

PFIB_ERR:TCAM_SHADOW_CONSISTENCY_ERR:value : Index: 100
Expected: 0 -0 -0
Hardware: 5 -1020304 -0
PFIB_ERR:TCAM_SHADOW_CONSISTENCY_ERR:Mask : Index: 3
Expected: 4 -0 -0
Hardware: 6 -FFF00000-0
Router#
```

show mls cef lookup

To display the IP entries in the MLS-hardware Layer 3-switching table for the specified destination IP address, use the **show mls cef lookup** command.

show mls cef [**ip**] **lookup** *address* [**detail**] [**module** *number*]

Syntax Description

ip	(Optional) Displays IP entries in the MLS-hardware Layer 3-switching table; see the "Usage Guidelines" section for additional information.
address	IP address in the format A.B.C.D.
detail	(Optional) Displays hardware-entry details.
module *number*	(Optional) Displays the entries for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The lookup is performed as a "longest-prefix match" and displays the TCAM-entry index that applies to the specified destination IP address.

The information output is in this format: Index, Prefix, Mask, and Adjacency.

The output of the **show mls cef lookup ip** and the **show mls cef lookup** commands is identical.

Examples

This example shows how to display the longest prefix match that applies to a specific IPv4-unicast address:

```
Router# show mls cef lookup 224.0.0.0

Codes: decap - Decapsulation, + - Push Label
Index  Prefix              Adjacency
3200   224.0.0.0/24        punt
Router#
```

show mls cef maximum-routes

To view the current maximum-route system configuration, use the **show mls cef maximum-routes** command.

show mls cef maximum-routes

Syntax Description

This command has no arguments or keywords.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

When you enter the **mls cef maximum-routes** command to change the configuration, the following additional fields appear in the output of the **show mls cef maximum-routes** command:

- User configured—Shows configuration changes that you have made.
- Upon reboot—Shows the configuration after a system reboot.

These fields appear if you have not saved the change (using the **copy system:running-config nvram: startup-config** command) after entering the **mls cef maximum-routes** command. See the "Examples" section for additional information.

Examples

This example shows the display after you have entered the **mls cef maximum-routes** command, saved the change (**copy system:running-config nvram: startup-config** command), and rebooted the system:

```
Router# show mls cef maximum-routes
FIB TCAM maximum routes :
=========================
Current :-
-------
IPv4 - 1k (default)
MPLS - 239k
IPv6 + IP Multicast - 8k (default)
Router#
```

This example shows the display if you entered the **mls cef maximum-routes** command and did not save the change:

```
Router# show mls cef maximum-routes
FIB TCAM maximum routes :
=========================
Current :-
-------
IPv4 - 1k (default)
```

```
MPLS - 239k
IPv6 + IP Multicast - 8k (default)
User configured :-
---------------
IPv4 + MPLS - 192k (default)
IPv6 + IP multicast - 32k (default)
Upon reboot :-
-----------
IPv4 - 1k (default)
MPLS - 239k
IPv6 + IP multicast - 8k (default)
Router#
```

This example shows the output if you have made a configuration change and saved the change (**copy system:running-config nvram: startup-config** command):

```
Router# show mls cef maximum-routes
FIB TCAM maximum routes :
=======================
Current :-
-------
IPv4 - 1k (default)
MPLS - 239k
IPv6 + IP Multicast - 8k (default)
User configured :-
---------------
IPv4 + MPLS - 192k (default)
IPv6 + IP multicast - 32k (default)
Router#
```

Related Commands

Command	Description
copy system:running-config nvram: startup-config	Saves the configuration to NVRAM.
mls cef maximum-routes	Limits the maximum number of the routes that can be programmed in the hardware allowed per protocol.

show mls cef mpls

To display the MPLS entries in the MLS-hardware Layer 3-switching table, use the **show mls cef mpls** command.

show mls cef mpls [**detail**] [**internal**] [**labels** *value*] [**module** *number*] [**vpn** *instance*] [**vrf** *instance*]

Syntax Description

detail	(Optional) Displays hardware-entry details.
internal	(Optional) Displays internal CEF entries.
labels *value*	(Optional) Displays the entries for a specific label; valid values are from 0 to 1048575.
module *number*	(Optional) Displays the entries for a specific module.
vpn *instance*	(Optional) Displays the VPN ID MPLS table entries for a specific VPN instance; valid values are from 0 to 4095.
vrf *instance-name*	(Optional) Displays the MPLS CEF table entries for a specific VRF.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This examples shows how to display MPLS entries:

```
Router# show mls cef mpls

Codes: + - Push label, - - Pop Label          * - Swap Label
Index  Local     Label                  Out i/f
       Label      Op
Router#
```

show mls cef rpf

To display the information about the RPF hardware in the MLS-hardware Layer 3-switching table, use the **show mls cef rpf** command.

show mls cef [**ip**] **rpf** [*ip-address*] [**module** *num*]

Syntax Description

ip	(Optional) Displays IP entries in the MLS-hardware Layer 3-switching table; see the "Usage Guidelines" section for additional information.
ip-address	(Optional) IP address.
module *num*	(Optional) Displays the entries for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

If you enter the **show mls cef ip rpf** command without arguments, the RPF global mode status is displayed.

The output of the **show mls cef ip rpf** and the **show mls cef rpf** commands is identical.

Examples

This example shows how to display the status of the RPF global mode:

```
Router# show mls cef rpf

RPF global mode:        not enabled
Router#
```

This example shows how to display the RPF information for a specific IP address:

```
Router# show mls cef rpf 10.100.0.0
RPF information for prefix 10.100.0.0/24
uRPF check performed in the hardware for interfaces :
GigabitEthernet1/1
Router#
```

Related Commands

Command	Description
mls ip cef rpf multipath	Configures the RPF modes.

show mls cef statistics

To display the number of switched packets and bytes, use the **show mls cef statistics** command.

show mls cef statistics [**module** *number*]

Syntax Description

module *number*	(Optional) Displays the information for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the MLS-hardware Layer 3-switching statistics:

```
Router# show mls cef statistics

Total CEF switched packets:  0000000000000000
Total CEF switched bytes:    0000000000000000
Router#
```

show mls cef summary

To display the number of routes in the MLS-hardware Layer 3-switching table for all the protocols, use the **show mls cef summary** command.

show mls cef summary [**module** *number*]

Syntax Description

module *number*	(Optional) Displays the information for a specific module.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The number of prefixes in the MLS-hardware Layer 3-switching table indicates the individual numbers for IPv4 and IPv6 unicast, IPv4 multicast, MPLS, and EoM routes.

Examples

This example shows how to display a summary of MLS-hardware Layer 3-switching information:

```
Router# show mls cef summary
Total routes:               80385
    IPv4 unicast routes:          42
    IPv4 Multicast routes:        5
    MPLS routes:                  0
    IPv6 unicast routes:          2
    EoM routes:                   0
Router#
```

Table 2-82 describes the fields in the **show mls cef summary** command output.

Table 2-82 show mls cef summary Command Output Fields

Field	Description
Total MLS-hardware Layer 3-switching switched packets	Number of MLS-hardware Layer 3-switching packets forwarded by the MLS-hardware Layer 3-switching engine.
Total MLS-hardware Layer 3-switching switched bytes	Number of bytes forwarded by the MLS-hardware Layer 3-switching engine.
Total routes	Number of route entries.
IP unicast routes	Number of IP-unicast route entries.

Table 2-82 show mls cef summary Command Output Fields (continued)

Field	Description
IPX routes	Number of IPX route entries.
IP multicast routes	Number of IP-multicast route entries.

Related Commands

Command	Description
show mls cef	Displays the MLS-hardware Layer 3-switching table entries.

show mls cef vrf

To display information about the VPN routing and forwarding instance CEF table for a specific VRF name, use the **show mls cef vrf** command.

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

Syntax Description

instance-name	VPN routing/forwarding instance name; valid values are from 0 to 4095.
prefix	(Optional) Prefix of the entry to display.
detail	(Optional) Displays the hardware-entry details.
lookup *ip-address*	(Optional) Displays the longest prefix-match lookup entry for the specified address.
module *num*	(Optional) Displays the entries for a specific module.
rpf *ip-address*	(Optional) Displays the uRPF check information for the (optional) specified IP address.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **show mls cef ip** 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

This 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#
```

Related Commands

Command	Description
show mls cef ip	Displays the IP entries in the MLS-hardware Layer 3-switching table.

show mls df-table

To display information about the DF table, use the **show mls df-table** command.

show mls df-table *start-vlan end-vlan*

Syntax Description

start-vlan	Start of a range of VLAN IDs; valid values are from 1 to 4094.
end-vlan	End of a range of VLAN IDs; valid values are from 1 to 4094.

Command Default

This command has no default settings.

Command Modes

Switch processor—EXEC (Switch-sp#)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

In the output display, the following applies:

- 1 indicates that DF is enabled.
- 0 indicates that DF is disabled.

Examples

This example shows how to display the DF-table contents for a range of VLANs:

```
Switch-sp# show mls df-table 201 212
TYCHO FIB DF Table

vlan   df_index
       3 2 1 0
-----+----------
 201   1 1 1 1
 202   1 1 1 1
 203   1 1 1 1
 204   1 1 1 1
 205   1 1 1 1
 206   1 1 1 1
 207   1 1 1 1
 208   1 1 1 1
 209   1 1 1 1
 210   1 1 1 1
 211   1 1 1 1
 212   1 1 1 1
Switch-sp#
```

show mls ip

To display the MLS IP information, use the **show mls ip** command.

show mls ip [**any** | **destination** {*hostname* | *ip-address*} | **detail** | **flow** {**tcp** | **udp**} | {**vlan** *vlan-id*} | {**macd** *destination-mac-address*} | {**macs** *source-mac-address*} | {**module** *number*} | **source** {*hostname* | *ip-address*} | **count** | **static**]

show mls {**ipv6** | **mpls**}

Syntax Description

any	(Optional) Displays any MLS IP information.
destination *hostname*	(Optional) Displays the entries for a specific destination hostname.
destination *ip-address*	(Optional) Displays the entries for a specific destination IP address.
detail	(Optional) Specifies a detailed output.
flow	(Optional) Specifies the flow type.
tcp | **udp**	Selects the flow type.
vlan *vlan-id*	(Optional) Specifies the VLAN ID; valid values are from 1 to 4094.
macd *destination -mac-address*	(Optional) Specifies the destination MAC address.
macs *source-mac-address*	(Optional) Specifies the source MAC address.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
source *hostname*	(Optional) Displays the entries for a specific source address.
source *ip-address*	(Optional) Displays the entries for a specific source IP address.
count	(Optional) Displays the total number of MLS entries.
static	(Optional) Displays the total number of static entries.
ipv6	Displays the total number of IPv6 entries.
mpls	Displays the total number of MPLS entries.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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. This definition also applies to the **module** *number* keyword and argument.

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

Examples

This example shows how to display any MLS IP information:

```
Router# show mls ip any
Displaying Netflow entries in Supervisor Earl
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        0   : 0x0
82           3772          1329  20:46:03   L3 - Dynamic
Router#
```

This example shows how to display MLS information on a specific IP address:

```
Router# show mls ip destination 172.20.52.122
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Dst i/f:DstMAC       Pkts         Bytes
-------------------------------------------------------------------------
SrcDstPorts   SrcDstEncap Age   LastSeen
----------------------------------------
172.20.52.122   0.0.0.0         5   : 00e0.4fac.b3ff 684          103469
Fa5/9,Fa5/9 ARPA,ARPA   281   07:17:02

 Number of Entries Found = 1
Router#
```

This example shows how to display MLS information on a specific flow type:

```
Router# show mls ip flow udp
Displaying Netflow entries in Supervisor Earl
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        0   : 0x0
78           3588          1259  20:44:53   L3 - Dynamic
Router#
```

This example shows how to display detailed MLS information:

```
Router# show mls ip detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------------
Pkts         Bytes         Age   LastSeen  Attributes
-------------------------------------------------

Mask Pi R CR Xt Prio Dsc IP_EN OP_EN Pattern Rpf FIN_RDT FIN/RST
----+--+-+--+--+----+---+-----+-----+-------+---+-------+-------
Ig/acli Ig/aclo Ig/qosi Ig/qoso Fpkt Gemini MC-hit Dirty Diags
-------+-------+-------+-------+----+------+------+-----+------

    QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
```

```
-----------+------------+---------+-----------+----+--------+-------+-----------+
127.0.0.19      127.0.0.16      udp :68     :67       1009: 0x0
72           3312          1170  20:43:24   L3 - Dynamic
0    1  0  0  1  0    0    1     1     0       0     0      0
0          0       0       0      0    0       0     0     0
  0x0          0               0        0       NO   64        NO       NO
Router#
```

Related Commands

Command	Description
mls ip	Enables MLS IP for the internal router on the interface.
show mls netflow ip	Displays information about the hardware NetFlow IP.

show mls ip cef rpf-table

To display the configuration of the RPF CEF table, use the **show mls ip cef rpf-table** command.

show mls ip cef rpf-table

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the RPF CEF-table entries:

```
Router# show mls ip cef rpf-table
------------------------------------------------------------------------------
172.10.10.0/24       [0] Fa2/1, Fa2/2, Fa2/3, Fa2/4
172.10.20.0/24
172.10.30.0/24
10.10.0.0/16         [1] Gi1/1, Gi1/2
10.20.0.0/16
Router#
```

Related Commands

Command	Description
mls ip cef rpf interface-group	Defines an interface group in the RPF-VLAN table.

show mls ip multicast

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

show mls ip multicast [{**capability** [**module** *num*]} | **connected** | **group**} {{*hostname* | *ip-address*} [*ip-mask*]} | {**interface** {*interface interface-number*}} | {**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	(Optional) Specifies an interface.
interface	Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **pos**, **atm**, and **ge-wan**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
mdt	(Optional) Displays hardware-accelerated 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 mroute/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(18)ZY	Support for this command was introduced.

Usage Guidelines

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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. These valid values also apply when entering the **module** *number* keyword and argument.

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

Examples

This 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#
```

This 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#
```

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

```
Router# show mls ip multicast interface fastethernet 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
Fa5/9,----- ARPA,ARPA   107   06:10:02
172.20.52.36    0.0.0.0         100 : 0050.7312.0cff 50           6403
Fa5/9,----- ARPA,ARPA   107   06:10:04
 Number of Entries Found = 2
Router#
```

This 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#
```

This 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>
```

This 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 mode)	Enables MLS IP shortcuts on the interface.

show mls ip multicast bidir

To display the Bidir hardware-switched entries, use the **show mls ip multicast bidir** command.

show mls ip multicast bidir [{**group** {{*hostname* | *ip-address*} [*ip-mask*]}} | {**interface** {*interface interface-number*}} | {**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	(Optional) Specifies an interface.
interface	Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, and **tengigabitethernet**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
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(18)ZY	Support for this command was introduced.

Examples

This 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.

show mls ip multicast rp-mapping

To display the mappings for the PIM-Bidir group to active rendezvous points, use the **show mls ip multicast rp-mapping** command.

show mls ip multicast rp-mapping [*rp-address*] [**df-cache** | **gm-cache**]

Syntax Description

rp-address	(Optional) Rendezvous-point address.
df-cache	(Optional) Displays information on the DF list in the rendezvous-point mapping cache in the hardware.
gm-cache	(Optional) Displays information on the group/mask ranges in the rendezvous-point mapping cache in the hardware.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the mappings for the PIM group-to-active rendezvous points:

```
Router# show mls ip multicast rp-mapping
RP Address State DF-count GM-count
2.2.2.2 H 1 1
9.9.9.9 H 1 2
Router#
```

This example shows how to display information that is based on the DF list in the mapping cache of the route processor:

```
Router# show mls ip multicast rp-mapping df-cache
RP Address   State   DF    State
9.9.9.9      H       Vl30  H
Router#
```

This example shows how to display information that is based on the mapping cache of the route processor:

```
Router# show mls ip multicast rp-mapping gm-cache
State: H - Hardware Switched, I - Install Pending, D - Delete Pending,
Z - Zombie
RP Address State Group Mask State Packet/Byte-count
60.0.0.60 H 230.31.0.0 255.255.0.0 H 100/6400
Router#
```

show mls ip multicast sso

To display information about multicast high-availability SSO, use the **show mls ip multicast sso** command.

show mls ip multicast sso [**statistics**]

Syntax Description

statistics	(Optional) Displays multicast high-availability SSO statistical information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display multicast high-availability SSO information:

```
Router> show mls ip multicast sso
Multicast SSO is enabled
Multicast HA Parameters
-------------------------------------------------+------+
protocol convergence timeout                     120 secs
flow leak percent                                10
flow leak interval                               20 secs
heartquake#
```

This example shows how to display statistical information about multicast high-availability SSO:

```
Router# show mls ip multicast sso statistics

Multicast HA Statistics: ACTIVE
-------------------------------------------------+------+
CHKPT msgs sent                                  5
CHKPT msgs send failed                           0
CHKPT msgs send aborted                          0
CHKPT met add msg sent                           5
CHKPT met del msg sent                           1
CHKPT icroif msg sent                            1
MET HA met add enqueued                          5
MET HA met del enqueued                          1
ICROIF HA add enqueued                           1
ICROIF HA del enqueued                           0
CHKPT buffer failure                             0

MET HA Reconstruction Statistics
-------------------------------------------------+------+
Number of met blks reconstructed                 0
Number of normal sets reconstructed              0
Number of fixed sets reconstructed               0
Number of sets deleted                           0
```

```
Number of blks not found                          0
normal sets reconstruction failed                 0
fixed set reconstruction failed                   0

Multicast HA Statistics: STANDBY
-------------------------------------------------+------+
CHKPT msgs rcvd                                   5
CHKPT met add msg rcvd                            5
CHKPT met del msg rcvd                            1
CHKPT icroif msg rcvd                             1
CHKPT msg unknown                                 0
CHKPT buffer failure                              0
Router#
```

Related Commands

Command	Description
mls ip multicast sso	Configures the SSO parameters.

show mls ip non-static

To display information for the software-installed nonstatic entries, use the **show mls ip non-static** command.

show mls ip non-static [**count** [**module** *number*] | **detail** [**module** *number*] | **module** *number*]

Syntax Description

count	(Optional) Displays the total number of nonstatic entries.
module *number*	(Optional) Designates the module number.
detail	(Optional) Specifies a detailed per-flow output.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the software-installed nonstatic entries:

```
Router> show mls ip non-static
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
Router>
```

This example shows how to display detailed information for the software-installed nonstatic entries:

```
Router> show mls ip non-static detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
----------+-----------+---------+----------+----+-------+-------+----------+
Router>
```

This example shows how to display the total number of software-installed nonstatic entries:

```
Router> show mls ip non-static count
Displaying Netflow entries in Supervisor Earl

 Number of shortcuts = 0
Router>
```

show mls ip routes

To display the NetFlow routing entries, use the **show mls ip routes** command.

show mls ip routes [**non-static** | **static**] [**count** [**module** *number*] | **detail** [**module** *number*] | **module** *number*]

Syntax Description

non-static	(Optional) Displays the software-installed nonstatic entries.
static	(Optional) Displays the software-installed static entries.
count	(Optional) Displays the total number of NetFlow routing entries.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
detail	(Optional) Specifies a detailed per-flow output.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the software-installed nonstatic routing entries:

```
Router> show mls ip routes non-static
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
Router>
```

This example shows how to display detailed information for the software-installed nonstatic routing entries:

```
Router> show mls ip routes non-static detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------

    QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
-----------+------------+---------+-----------+----+-------+-------+----------+

Router>
```

This example shows how to display the total number of software-installed routing entries:

```
Router> show mls ip routes count
Displaying Netflow entries in Supervisor Earl

 Number of shortcuts = 0
Router>
```

Related Commands

Command	Description
show mls netflow ip sw-installed	Displays information for the software-installed IP entries.

show mls ip static

To display the information for the software-installed static IP entries, use the **show mls ip static** command.

show mls ip static [**count** [**module** *number*] | **detail** [**module** *number*] | **module** *number*]

Syntax Description

count	(Optional) Displays the total number of static entries.
module *number*	(Optional) Designates the module number.
detail	(Optional) Specifies a detailed per-flow output.

Command Default

This command has no default settings.

Command Default

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the software-installed static entries:

```
Router> show mls ip static
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
Router>
```

This example shows how to display detailed information for the software-installed static entries:

```
Router> show mls ip static detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------

    QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
-----------+------------+---------+-----------+----+-------+-------+----------+
Router>
```

This example shows how to display the total number of software-installed static entries:

```
Router> show mls ip static count
Displaying Netflow entries in Supervisor Earl

 Number of shortcuts = 0
Router>
```

show mls ip statistics

To display the statistical information for the NetFlow IP entries, use the **show mls ip statistics** command.

show mls ip statistics [**count** [**module** *number*] | **detail** [**module** *number*] | **module** *number*]

Syntax Description

count	(Optional) Displays the total number of NetFlow entries.
module *number*	(Optional) Displays the entries that are downloaded on the specified module.
detail	(Optional) Specifies a detailed per-flow output.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display statistical information for the NetFlow IP entries:

```
Router> show mls ip statistics
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
Router>
```

This example shows how to display detailed statistical information for the NetFlow IP entries:

```
Router> show mls ip statistics detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------

    QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
-----------+------------+---------+-----------+----+-------+-------+-----------+
Router>
```

show mls nde

To display information about the NDE hardware-switched flow, use the **show mls nde** command.

show mls nde

Syntax Description

This command has no arguments or keywords.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The output for Catalyst 6500 series switches includes the current NDE mode.

Examples

This example shows how to display information about the NDE hardware-switched flow on a Catalyst 6500 series switch:

```
Router# show mls nde
 Netflow Data Export enabled (Interface Mode)
 Exporting flows to 172.20.55.71 (9991)
 Exporting flows from 10.6.60.120 (59020)
 Version: 7
 Include Filter not configured
 Exclude Filter not configured
 Total Netflow Data Export Packets are:
    0 packets, 0 no packets, 0 records
Router#
```

Related Commands

Command	Description
mls nde sender	Enables MLS NDE export.
show ip flow-export	Displays the information about the hardware-switched and software-switched flows for the data export, including the main cache and all other enabled caches.
show mls netflow	Displays configuration information about the NetFlow hardware.

show mls netflow

To display configuration information about the NetFlow hardware, use the **show mls netflow** command.

show mls netflow {**aging** | **aggregation flowmask** | **creation** | **flowmask** | {**table-contention** {**detailed** | **summary**}} | **usage**}

show mls netflow [**ip** | **ipv6** | **mpls**] [**any** | **count** | **destination** {*hostname* | *ip-address*} | **detail** | **dynamic** | **flow** {**tcp** | **udp**} | **module** *number* | **nowrap** | **source** {*hostname* | *ip-address*} | **sw-installed** [**non-static** | **static**]]

Syntax Description

aging	Displays the NetFlow-aging information.
aggregation flowmask	Displays the flow mask that is set for the currrent NetFlow aggregations.
creation	Displays the configured protocol-creation filters.
flowmask	Displays the current NetFlow IP and IPX flow mask.
table-contention	Displays the NetFlow table-contention level information.
detailed	Displays detailed NetFlow table-contention level information.
summary	Displays a summary of NetFlow table-contention levels.
usage	Displays the NetFlow table-usage notification status.
ip	(Optional) Displays information about the NetFlow IP table; see the **show mls netflow ip** command.
ipv6	(Optional) Displays information about the NetFlow IPv6 table; see the **show mls netflow ipv6** command.
mpls	(Optional) Displays information about the NetFlow MPLS table.
any	(Optional) Displays detailed NetFlow table-entry information with no test wrap.
count	(Optional) Displays the total number of MLS NetFlow IP entries.
destination *hostname*	(Optional) Displays the entries for a specific destination hostname.
destination *ip-address*	(Optional) Displays the entries for a specific destination IP address.
detail	(Optional) Specifies a detailed output.
dynamic	(Optional) Displays the hardware-created dynamic entries.
flow tcp	(Optional) Displays information about the TCP flows.
flow udp	(Optional) Displays information about the UDP flows.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
nowrap	(Optional) Displays information without text wrap.
source *hostname*	(Optional) Displays the entries for a specific source address.
source *ip-address*	(Optional) Displays the entries for a specific source IP address.
sw-installed	(Optional) Displays the routing NetFlow entries; see the **show mls netflow ip sw-installed** command.

non-static	(Optional) Displays information for software-installed static IP entries; see the **show mls netflow ip sw-installed** command.
static	(Optional) Displays information for the software-installed nonstatic IP entries; see the **show mls netflow ip sw-installed** command.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **interface**, **macd**, and **macs** keywords are not supported.

If you enter the **show mls netflow ip** command with no argument, the output of the **show mls netflow ip routes** and **show mls netflow ip dynamic** commands are displayed.

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

If you enable the NetFlow table-usage notification and the NetFlow table-usage exceeds a preset percentage threshold, a warning message is displayed. You can use the **mls netflow usage notify** command to set the threshold percentage and the time interval to check the NetFlow table usage.

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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. These valid values also apply when entering the **module** *number* keyword and argument.

Examples

This example shows how to display the NetFlow-aging configuration:

```
Router# show mls netflow aging
             enable timeout  packet threshold
             ------ -------  ----------------
normal aging true       300        N/A
fast aging   true       32         100
long aging   true       900        N/A
Router#
```

This example shows how to display the configured protocol-creation filters:

```
Router# show mls netflow creation
Excluded protocols:
port protocol
-------+----------
10     tcp
8      udp/tcp
Router#
```

This example shows how to display the flow mask that is set for the currrent NetFlow aggregation:

```
Router# show mls netflow aggregation flowmask
Current flowmask set for netflow aggregation : Dest only
Minimum flowmask required for netflow aggregation schemes
---------------------+------------------+----------------
Aggregation Scheme Min. Flowmask Status
---------------------+------------------+----------------
as Intf Src Dest disabled
protocol-port Full Flow disabled
source-prefix Intf Src Dest disabled
destination-prefix Dest only enabled
prefix Intf Src Dest disabled
Router#
```

This example shows how to display detailed information about the NetFlow table-contention level:

```
Router# show mls netflow table-contention detailed
Earl in Module 2
Detailed Netflow CAM (TCAM and ICAM) Utilization
================================================
TCAM Utilization   :     0%
ICAM Utilization   :     0%
Netflow TCAM count :     0
Netflow ICAM count :     0
Router#
```

This example shows how to display a summary of the NetFlow table-contention level:

```
Router# show mls netflow table summary
Earl in Module 2
Summary of Netflow CAM Utilization (as a percentage)
====================================================
TCAM Utilization   :     0%
ICAM Utilization   :     0%
Router#
```

This example shows how to display the NetFlow table-usage notification status:

```
Router# show mls netflow usage
Netflow table usage notification enabled at 80% every 300 seconds
Netflow table utilization of module 7 is 99%
Netflow table utilization of module 10 is 24%
Router#
```

Related Commands

Command	Description
ip flow-aggregation cache	Creates a flow-aggregation cache and enters the aggregation cache configuration mode.
mls netflow usage notify	Monitors the NetFlow table usage on the switch processor.
show ip cache flow	Displays a summary of the NetFlow cache-flow entries.

show mls netflow ip

To display information about the hardware NetFlow IP, use the **show mls netflow ip** command.

show mls netflow ip any

show mls netflow ip count [**module** *number*]

show mls netflow ip destination {*hostname* | *ip-address*}[*/ip-mask*] [**count** [**module** *number*]] | **detail** | **dynamic** | **flow** {**icmp** | **tcp** | **udp**} | **module** *number* | **nowrap** | **qos** | **source** {*hostname* | *ip-address*}[*/ip-mask*] | **sw-installed** [**non-static** | **static**]

show mls netflow ip detail [**module** *number* | **nowrap** [**module** *number*]]

show mls netflow ip dynamic [**count** [**module** *number*]] [**detail**] [**module** *number*] [**nowrap** [**module** *number*]] [{**qos** [**module** *number*] [**nowrap** [**module** *number*]}]]

show mls netflow ip {**flow** {**icmp** | **tcp** | **udp**}} [**count** [**module** *number*]] | {**destination** {*hostname* | *ip-address*}[*/ip-mask*]} | **detail** | **dynamic** | **flow** {**icmp** | **tcp** | **udp**} | **module** *number* | **nowrap** | **qos** | **source** {*hostname* | *ip-address*} | **sw-installed** [**non-static** | **static**]

show mls netflow ip {module *number*}

show mls netflow ip qos [**module** *number* | **nowrap** [**module** *number*]]

show mls netflow ip source {*hostname* | *ip-address*}[*/ip-mask*] [**count** [**module** *number*]] | **detail** | **dynamic** | **flow** {**icmp** | **tcp** | **udp**} | **module** *number* | **nowrap** | **qos** | **sw-installed** [**non-static** | **static**]

Syntax Description

any	Displays detailed NetFlow table-entry information with no test wrap.
count	Displays the total number of MLS NetFlow IP entries.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
destination *hostname*	Displays the entries for a specific destination hostname.
destination *ip-address*	Displays the entries for a specific destination IP address.
/ip-mask	(Optional) IP mask for a destination IP address.
detail	(Optional) Specifies a detailed output.
dynamic	Displays the hardware-created dynamic entries; see the **show mls nde** command.
flow icmp	Displays information about the ICMP flows.
flow tcp	Displays information about the TCP flows.
flow udp	Displays information about the UDP flows.
nowrap	Displays information without text wrap.
qos	Displays QoS microflow policing information.
source *hostname*	Displays the entries for a specific source address.
source *ip-address*	Displays the entries for a specific source IP address.

sw-installed	(Optional) Displays the routing NetFlow entries; see the **show mls netflow ip sw-installed** command.
non-static	(Optional) Displays information for software-installed static IP entries; see the **show mls netflow ip sw-installed** command.
static	(Optional) Displays information for the software-installed nonstatic IP entries; see the **show mls netflow ip sw-installed** command.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

If you enter the **show mls netflow ip** command with no arguments, the output of the **show mls netflow ip sw-installed** and **show mls nde** commands are displayed.

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

Examples

This example shows how to display information about any MLS NetFlow IP:

```
Router# show mls netflow ip
Displaying Netflow entries in Supervisor Earl
DstIP SrcIP Prot:SrcPort:DstPort Src i/f:AdjPtr
------------------------------------------------------------------------------
Pkts Bytes Age LastSeen Attributes
--------------------------------------------------
12.1.1.2 11.1.1.2 tcp :3 :5 Fa5/11 :0x0
459983 21159218 6 07:45:13 L3 - Dynamic
12.1.1.2 11.1.1.3 tcp :3 :5 Fa5/11 :0x0
459984 21159264 6 07:45:13 L3 - Dynamic
Router#
```

This example shows how to display detailed NetFlow table-entry information:

```
Router# show mls netflow ip detail
Displaying Netflow entries in Supervisor Earl
DstIP SrcIP Prot:SrcPort:DstPort Src i/f:AdjPtr
------------------------------------------------------------------------
Pkts Bytes Age LastSeen Attributes
--------------------------------------------------
Mask Pi R CR Xt Prio Dsc IP_EN OP_EN Pattern Rpf FIN_RDT FIN/RST
----+--+-+--+--+----+---+-----+-----+-------+---+-------+-------
Ig/acli Ig/aclo Ig/qosi Ig/qoso Fpkt Gemini MC-hit Dirty Diags
-------+-------+-------+-------+----+------+------+-----+------
```

```
QoS Police Count Threshold Leak Drop Bucket Use-Tbl Use-Enable
-----------+------------+---------+-----------+----+-------+-------+-----------+
172.30.46.2 172.30.45.2 4 :0 :0 Gi7/1: 0x0
140063 6442898 15 01:42:52 L3 - Dynamic
1 1 0 0 1 0 0 1 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0x0 672645504 0 0 NO 31784 NO NO
Router#
```

This example shows how to display NetFlow table-entry information with no test wrap:

```
Router# show mls netflow ip nowrap
 Displaying Netflow entries in Supervisor Earl
 DstIP SrcIP Prot:SrcPort:DstPort Src i/f
 :AdjPtr Pkts Bytes Age LastSeen Attributes
 --------------------------------------------------------------------------
 -
 ------------------------------------------------------------------
 12.1.1.2 11.1.1.92 udp :63 :63 Fa5/11
 :0x0 176339 8111594 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.93 udp :63 :63 Fa5/11
 :0x0 176338 8111548 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.94 udp :63 :63 Fa5/11
 :0x0 176338 8111548 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.95 udp :63 :63 Fa5/11
 :0x0 176338 8111548 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.96 udp :63 :63 Fa5/11
 :0x0 176338 8111548 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.97 udp :63 :63 Fa5/11
 :0x0 176337 8111502 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.98 udp :63 :63 Fa5/11
 :0x0 176337 8111502 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.99 udp :63 :63 Fa5/11
 :0x0 176337 8111502 912 22:31:15 L3 - Dynamic
 12.1.1.2 11.1.1.100 udp :63 :63 Fa5/11
 :0x0 176337 8111502 912 22:31:15 L3 - Dynamic
Router#
```

This example shows how to display information about the MLS NetFlow on a specific IP address:

```
Router# show mls netflow ip destination 172.20.52.122
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
Router#
```

This example shows how to display information about the MLS NetFlow on a specific flow:

```
Router# show mls netflow ip flow udp
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
172.20.52.19    0.0.0.0         0   :0      :0        0   : 0
0            0           1407  11:01:32   L3 - Dynamic
Router#
```

This example shows how to display detailed information about the MLS NetFlow on a full-flow mask:

```
Router# show mls netflow ip detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
---------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-----------------------------------------------------

    QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
-----------+------------+---------+-----------+----+-------+-------+----------+
172.20.52.19    0.0.0.0         0   :0      :0        0   : 0
0            0           1464  11:02:31   L3 - Dynamic
  0x0          0               0        0       NO   64        NO       NO
Router#
```

This example shows how to display detailed information about a specific flow type:

```
Router# show mls netflow ip flow icmp
Displaying Netflow entries in Supervisor Earl
DstIP SrcIP Prot:SrcPort:DstPort Src i/f
:AdjPtr
>
>-------------------------------------------------------------------------------
-
-
Pkts Bytes Age LastSeen Attributes
-----------------------------------------------------
12.1.1.2 11.1.10.151 icmp:0 :0 Fa5/11
:0x0
1945 89470 1062 08:45:15 L3 - Dynamic
12.1.1.2 11.1.10.153 icmp:0 :0 Fa5/11
:0x0
1945 89470 1062 08:45:15 L3 - Dynamic
12.1.1.2 11.1.10.155 icmp:0 :0 Fa5/11
:0x0
1945 89470 1062 08:45:15 L3 - Dynamic
12.1.1.2 11.1.10.157 icmp:0 :0 Fa5/11
:0x0
1945 89470 1062 08:45:15 L3 - Dynamic
12.1.1.2 11.1.10.159 icmp:0 :0 Fa5/11
:0x0
1945 89470 1062 08:45:15 L3 - Dynamic
12.1.1.2 11.1.10.161 icmp:0 :0 Fa5/11
:0x0
1945 89470 1062 08:45:15 L3 - Dynamic
12.1.1.2 11.1.10.163 icmp:0 :0 Fa5/11
:0x0
Router#
```

This example shows how to display QoS information:

```
Router# show mls netflow ip qos
Displaying netflow qos information in Supervisor Earl
DstIP            SrcIP           Prot:SrcPort:DstPort Src i/f:AdjPtr
-------------------------------------------------------------------------
Pkts         Bytes        LastSeen   QoS   PoliceCount Threshold  Leak
-------------------------------------------------------------------------
Drop  Bucket
------------
xxx.xxxx.xxx.xxx xxx.xxx.xxx.xxx xxxx:63     :63      Fa5/11 :0x0
772357       35528422     17:59:01   xxx   xxx          xxx        xxx
xxx   xxx
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 mls netflow ip sw-installed

To display information for the software-installed IP entries, use the **show mls netflow ip sw-installed** command.

show mls netflow ip sw-installed {**non-static** | **static**} [**count** [**module** *number*] | **detail** [**module** *number*] | **module** *number*]

Syntax Description

non-static	Displays the software-installed routing entries.
static	Displays the software-installed static routing entries.
count	(Optional) Displays the total number of nonstatic entries.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
detail	(Optional) Specifies a detailed per-flow output.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the software-installed nonstatic entries:

```
Router> show mls netflow ip sw-installed non-static
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------
Router>
```

This example shows how to display detailed information for the software-installed nonstatic entries:

```
Router> show mls netflow ip sw-installed non-static detail
Displaying Netflow entries in Supervisor Earl
DstIP           SrcIP           Prot:SrcPort:DstPort  Src i/f:AdjPtr
-----------------------------------------------------------------------
Pkts         Bytes       Age   LastSeen  Attributes
-------------------------------------------------

    QoS     Police Count Threshold    Leak     Drop Bucket  Use-Tbl Use-Enable
-----------+------------+---------+-----------+----+-------+-------+----------+
Router>
```

This example shows how to display the total number of software-installed nonstatic entries:

```
Router> show mls netflow ip sw-installed non-static count
Displaying Netflow entries in Supervisor Earl

 Number of shortcuts = 0
Router>
```

show mls netflow ipv6

To display information about the hardware NetFlow IPv6 configuration, use the **show mls netflow ipv6** command.

show mls netflow ipv6 any

show mls netflow ipv6 count [**module** *number*]

show mls netflow ipv6 destination *ipv6-address*[*/ipv6-prefix*] [**count** [**module** *number*]] | **detail** | **dynamic** | **flow** {**icmp** | **tcp** | **udp**} | **module** *number* | **nowrap** | **qos** | **source** *ipv6-address*[*/ipv6-prefix*] | **sw-installed** [**non-static** | **static**]

show mls netflow ipv6 detail [**module** *number* | **nowrap** [**module** *number*]]

show mls netflow ipv6 dynamic [**count** [**module** *number*]] [**detail**] [**module** *number*] [**nowrap** [**module** *number*]] [{**qos** [**module** *number*]] [**nowrap** [**module** *number*]}]

show mls netflow ipv6 {flow {**icmp** | **tcp** | **udp**}} [**count** [**module** *number*]] | {**destination** *ipv6-address*[*/ipv6-prefix*]} | **detail** | **dynamic** | **flow** {**icmp** | **tcp** | **udp**} | **module** *number* | **nowrap** | **qos** | {**source** *ipv6-address*[*/ipv6-prefix*]} | **sw-installed** [**non-static** | **static**]]

show mls netflow ipv6 {**module** *number*}

show mls netflow ipv6 qos [**module** *number* | **nowrap** [**module** *number*]]

show mls netflow ipv6 source *ipv6-address*[*/ipv6-prefix*] [**count** [**module** *number*]] | **detail** | **dynamic** | **flow** {**icmp** | **tcp** | **udp**} | **module** *number* | **nowrap** | **qos** | **sw-installed** [**non-static** | **static**]

Syntax Description

any	Displays the NetFlow-aging information.
count	Displays the total number of MLS NetFlow IPv6 entries.
module *number*	(Optional) Displays the entries that are downloaded on the specified module; see the "Usage Guidelines" section for valid values.
destination *ipv6-address*	Displays the entries for a specific destination IPv6 address.
/ipv6-prefix	IPv6 prefix; valid values are from 0 to 128.
detail	Specifies a detailed output.
dynamic	Displays the hardware-created dynamic entries.
flow icmp | **tcp** | **udp**	Specifies the flow type.
nowrap	(Optional) Turns off text wrapping.
qos	Displays information about QoS statistics.
source *ipv6-address*	(Optional) Displays the entries for a specific source IPv6 address.
sw-installed	(Optional) Displays the routing NetFlow entries.
non-static	(Optional) Displays information about the software-installed static IPv6 entries.
static	(Optional) Displays information about the software-installed nonstatic IPv6 entries.

Command Default This command has no default settings.

Command Default EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples This example shows how to display information about the hardware NetFlow configuration:

```
Router# show mls netflow ipv6
Displaying Netflow entries in Supervisor Earl
DstIP                                   SrcIP
---------------------------------------------------------------------------
Prot:SrcPort:DstPort   Src i/f          :AdjPtr
Pkts        Bytes       Age  LastSeen   Attributes
-----------------------------------------------------------------------------------------------
50::2                                   47::2
tcp :16     :32         Vl47            :0x0
23758       1425480     4    23:48:36   L3 (IPv6) - Dynamic
50::2                                   47::3
tcp :16     :32         Vl47            :0x0
23758       1425480     4    23:48:36   L3 (IPv6) - Dynamic
50::2                                   47::4
tcp :16     :32         Vl47            :0x0
23758       1425480     4    23:48:36   L3 (IPv6) - Dynamic
50::2                                   47::5
tcp :16     :32         Vl47            :0x0
23758       1425480     4    23:48:36   L3 (IPv6) - Dynamic
50::2                                   47::6
tcp :16     :32         Vl47            :0x0
23758       1425480     4    23:48:36   L3 (IPv6) - Dynamic
Router#
```

This example shows how to display IPv6 microflow policing information:

```
Router# show mls netflow ipv6 qos
Displaying Netflow entries in Supervisor Earl
DstIP                                   SrcIP
---------------------------------------------------------------------------
Prot:SrcPort:DstPort  Src i/f          :AdjPtr    Pkts         Bytes
---------------------------------------------------------------------------
LastSeen   QoS    PoliceCount  Threshold   Leak      Drop  Bucket
-------------------------------------------------------------------
101::3                                  100::2
icmp:0      :0        --               0x0          0           0
22:22:09   0x0    0                 0         0       NO  0
101::2                                  100::2
icmp:0      :0        --               0x0          0           0
22:22:09   0x0    0                 0         0       NO  0
Router#
```

This example shows how to display IPv6 microflow policing information for a specific module:

```
Router# show mls netflow ipv6 qos module 7
Displaying Netflow entries in module 7
DstIP                                   SrcIP
---------------------------------------------------------------------------------
Prot:SrcPort:DstPort  Src i/f          :AdjPtr    Pkts         Bytes
---------------------------------------------------------------------------
LastSeen   QoS    PoliceCount  Threshold   Leak      Drop  Bucket
-------------------------------------------------------------------
101::2                                  100::2
icmp:0      :0        --               0x0          0            0
22:22:56   0x0    0                  0         0       NO  0
101::3                                  100::2
icmp:0      :0        --               0x0          0            0
22:22:56   0x0    0                  0         0       NO  0
Router#
```

This example shows the output display when you turn off text wrapping:

```
Router# show mls netflow ipv6 qos nowrap
Displaying Netflow entries in Supervisor Earl
DstIP                                   SrcIP
Prot:SrcPort:DstPort  Src i/f          :AdjPtr    Pkts         Bytes            LastSeen
QoS    PoliceCount  Threshold   Leak      Drop  Bucket
-------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------
-----------------------------------------------
101::3                                  100::2                                  icmp:0
:0       --             0x0        0          0           22:22:19   0x0    0
0         0       NO  0
101::2                                  100::2                                  icmp:0
:0       --             0x0        0          0           22:22:19   0x0    0
0         0       NO  0
Router#
```

This example shows the output display when you turn off text wrapping for a specific module:

```
Router# show mls netflow ipv6 qos nowrap module 7
Displaying Netflow entries in module 7
DstIP                                   SrcIP
Prot:SrcPort:DstPort  Src i/f          :AdjPtr    Pkts         Bytes            LastSeen
QoS    PoliceCount  Threshold   Leak      Drop  Bucket
-------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------
-----------------------------------------------
101::3                                  100::2                                  icmp:0
:0       --             0x0        0          0           22:22:38   0x0    0
0         0       NO  0
101::2                                  100::2                                  icmp:0
:0       --             0x0        0          0           22:22:38   0x0    0
0         0       NO  0
Router#
```

Related Commands

Command	Description
clear mls netflow	Clears the MLS NetFlow-shortcut entries.

show mls qos

To display MLS QoS information, use the **show mls qos** command.

show mls qos [{**arp** | **ipv6** | **ip** | **ipx** | **last** | **mac** | **maps** [*map-type*]} [{*interface interface-number*} | {**slot** *slot*} | {**null** *interface-number*} | {**port-channel** *number*} | {**vlan** *vlan-id*}]]

Syntax Description

arp	(Optional) Displays ARP information.
ipv6	(Optional) Displays IPv6 information.
ip | **ipx**	(Optional) Displays information about the MLS IP or IPX status.
last	(Optional) Displays information about the last packet-policing.
mac	(Optional) Displays information about the MAC address-based QoS status.
maps	(Optional) Displays information about the QoS mapping.
map-type	(Optional) Map type; see the "Usage Guidelines" section for valid values.
interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **ge-wan**, **pos**, and **atm**.
interface-number	(Optional) Module and port number; see the "Usage Guidelines" section for valid values.
slot *slot*	(Optional) Specifies the slot number; displays the global and per-interface QoS enabled and disabled settings and the global QoS counters.
null *interface-number*	(Optional) Specifies the null interface; the valid value is **0**.
port-channel *number*	(Optional) Specifies the channel interface; valid values are a maximum of 64 values ranging from 1 to 282.
vlan *vlan-id*	(Optional) Specifies the VLAN ID; valid values are from 1 to 4094.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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.

The **port-channel** *number* values from 257 to 282 are supported on the CSM and the FWSM only.

Valid values for *map-types* are defined as follows:

- **cos-dscp**—Specifies the ingress CoS-to-DSCP mapping to display; valid values are from 0 to 7.
- **dscp-cos**—Displays the egress DSCP-to-CoS mapping.
- **dscp-exp**—Displays the DSCP-to-EXP mapping on the MPLS domain ingress and egress; this keyword is not supported.
- **exp-dscp**—Displays the EXP-to-DSCP mapping on the MPLS domain ingress and egress; this keyword is not supported.
- **ip-prec-dscp** *value*—Specifies the ingress IP precedence-to-DSCP mapping to display; valid values are from 0 to 7.
- **policed-dscp**—Displays the policed DSCP values to marked-down DSCP values mapping.

The **dscp-exp** and **exp-dscp** options are supported on Catalyst 6500 series switches that are configured with a Supervisor Engine 720 only.

Examples

This example shows how to display information about the last logged packet:

```
Router# show mls qos last
QoS engine last packet information:
    Packet was transmitted
    Output TOS/DSCP: 0xC0/48[unchanged]   Output COS: 0[unchanged]
    Aggregate policer index: 0(none)
    Microflow policer index: 0(none)
Router#
```

This example shows how to display the QoS-map settings:

```
Router# show mls qos maps
   Policed-dscp map:
            0  1  2  3  4  5  6  7  8  9
   ---------------------------------
      00:  00 01 02 03 04 05 06 07 08 09
      10:  10 11 12 13 14 15 16 17 18 19
      20:  20 21 22 23 24 25 26 27 28 29
      30:  30 31 32 33 34 35 36 37 38 39
      40:  40 41 42 43 44 45 46 47 48 49
      50:  50 51 52 53 54 55 56 57 58 59
      60:  60 61 62 63

   Dscp-cos map:
            0  1  2  3  4  5  6  7  8  9
   ---------------------------------
      00:  00 00 00 00 00 00 00 00 01 01
      10:  01 01 01 01 01 01 02 02 02 02
      20:  02 02 02 02 03 03 03 03 03 03
      30:  03 03 04 04 04 04 04 04 04 04
      40:  05 05 05 05 05 05 05 05 06 06
      50:  06 06 06 06 06 06 07 07 07 07
      60:  07 07 07 07

   Cos-dscp map:
          cos:   0  1  2  3  4  5  6  7
       ---------------------------------
        dscp:   0  8 16 24 32 40 48 56

   IpPrecedence-dscp map:
       ipprec:   0  1  2  3  4  5  6  7
       ---------------------------------
```

```
        dscp:   0  8 16 24 32 40 48 56

Router#
```

This example shows how to verify the configuration of DSCP-mutation mapping:

```
Router# show mls qos maps | begin DSCP mutation
DSCP mutation map mutmap1:                  (dscp= d1d2)
     d1 :  d2 0  1  2  3  4  5  6  7  8  9
     ---------------------------------------
      0 :    00 01 02 03 04 05 06 07 08 09
      1 :    10 11 12 13 14 15 16 17 18 19
      2 :    20 21 22 23 24 25 26 27 28 29
      3 :    08 31 32 33 34 35 36 37 38 39
      4 :    40 41 42 43 44 45 46 47 48 49
      5 :    50 51 52 53 54 55 56 57 58 59
      6 :    60 61 62 63
<...Output Truncated...>
Router#
```

Note In the DSCP-mutation map displays, the marked-down DSCP values are shown in the body of the matrix. The first digit of the original DSCP value is in the column labeled d1, and the second digit is in the top row. In the example, DSCP 30 maps to DSCP 08.

This example shows how to display IPv6 information:

```
Router# show mls qos ipv6
QoS Summary [IPv6]:      (* - shared aggregates, Mod - switch module)

     Int Mod Dir  Class-map DSCP  Agg  Trust Fl   AgForward-By   AgPoliced-By
                                   Id         Id
-------------------------------------------------------------------------------

      All  7   -    Default    0    0*    No  0      189115356              0
Router#
```

This example shows how to display QoS information:

```
Router# show mls qos
QoS is enabled globally
Microflow policing is enabled globally
QoS ip packet dscp rewrite enabled globally

QoS is disabled on the following interfaces:
Fa6/3 Fa6/4

QoS DSCP-mutation map is enabled on the following interfaces:
Fa6/5
Vlan or Portchannel(Multi-Earl) policies supported: Yes
Egress policies supported: Yes

----- Module [5] -----
QoS global counters:
Total packets: 164
IP shortcut packets: 0
Packets dropped by policing: 0
IP packets with TOS changed by policing: 0
IP packets with COS changed by policing: 0
Non-IP packets with COS changed by policing: 0
MPLS packets with EXP changed by policing: 0
Router#
```

Related Commands

Command	Description
mls qos (global configuration mode)	Enables the QoS functionality globally.
mls qos (interface configuration mode)	Enables the QoS functionality on an interface.

show mls qos free-agram

To display the number of free aggregate RAM indexes on the switch processor, use the **show mls qos free-agram** command.

show mls qos free-agram

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default settings.

Command Default

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the number of free aggregate RAM indexes on the switch processor :

```
Router# show mls qos free-agram
Total Number of Avalable AG RAM indices : 1023

 Module [1]
 Free AGIDs : 1023

 Module [6]
 Free AGIDs : 1023

Router#
```

show mls qos maps

To display information about the QoS-map configuration and runtime-version, use the **show mls qos maps** command.

show mls qos maps [**cos-dscp** | **cos-mutation** | **dscp-cos** | **dscp-exp** | **dscp-mutation** | **exp-dscp** | **exp-mutation** | **ip-prec-dscp** | **policed-dscp**]

Syntax Description

cos-dscp	(Optional) Displays information about the CoS-to-DSCP map.
cos-mutation	(Optional) Displays information about the CoS-mutation map.
dscp-cos	(Optional) Displays information about the DSCP-to-CoS map.
dscp-exp	(Optional) Displays information about the DSCP-to-exp map.
dscp-mutation	(Optional) Displays information about the DSCP-mutation map.
exp-dscp	(Optional) Displays information about the exp-to-DSCP map.
exp-mutation	(Optional) Displays information about the exp-mutation map.
ip-prec-dscp	(Optional) Displays information about the IP precedence-to-DSCP map.
policed-dscp	(Optional) Displays information about the policed-DSCP map.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display information about the QoS-map configuration and runtime version:

```
Router# show mls qos maps
   Normal Burst Policed-dscp map:                (dscp= d1d2)
     d1 :  d2 0  1  2  3  4  5  6  7  8  9
     ------------------------------------
      0 :    00 01 02 03 04 05 06 07 08 09
      1 :    10 11 12 13 14 15 16 17 18 19
      2 :    20 21 22 23 24 25 26 27 28 29
      3 :    30 31 32 33 34 35 36 37 38 39
      4 :    40 41 42 43 44 45 46 47 48 49
      5 :    50 51 52 53 54 55 56 57 58 59
      6 :    60 61 62 63

   Maximum Burst Policed-dscp map:               (dscp= d1d2)
     d1 :  d2 0  1  2  3  4  5  6  7  8  9
     ------------------------------------
      0 :    00 01 02 03 04 05 06 07 08 09
      1 :    10 11 12 13 14 15 16 17 18 19
      2 :    20 21 22 23 24 25 26 27 28 29
      3 :    30 31 32 33 34 35 36 37 38 39
```

```
    4 :    40 41 42 43 44 45 46 47 48 49
    5 :    50 51 52 53 54 55 56 57 58 59
    6 :    60 61 62 63

  Dscp-cos map:                                     (dscp= d1d2)
    d1 :  d2 0  1  2  3  4  5  6  7  8  9
    ---------------------------------------
    0 :    00 00 00 00 00 00 00 00 01 01
    1 :    01 01 01 01 01 01 02 02 02 02
    2 :    02 02 02 02 03 03 03 03 03 03
    3 :    03 03 04 04 04 04 04 04 04 04
    4 :    05 05 05 05 05 05 05 05 06 06
    5 :    06 06 06 06 06 06 07 07 07 07
    6 :    07 07 07 07

  Cos-dscp map:
       cos:   0  1  2  3  4  5  6  7
    ----------------------------------
      dscp:   0  8 16 24 32 40 48 56

  IpPrecedence-dscp map:
    ipprec:   0  1  2  3  4  5  6  7
    ----------------------------------
      dscp:   0  8 16 24 32 40 48 56

Router#
```

This example shows how to display the configuration and runtime version of the CoS-to-CoS map:

```
Router# show mls qos maps cos-mutation
  CoS mutation map test-map:
    In-CoS :  Out-CoS
    ------------------
     0 :        0
     1 :        1
     2 :        2
     3 :        1
     4 :        1
     5 :        1
     6 :        6
     7 :        7
Router#
```

Related Commands

Command	Description
mls qos map cos-dscp	Defines the ingress CoS-to-DSCP map for trusted interfaces.
mls qos map cos-mutation	Maps a packet's CoS to a new CoS value.
mls qos map dscp-cos	Defines an egress DSCP-to-CoS map.
mls qos map dscp-mutation	Defines a named DSCP mutation map.
mls qos map ip-prec-dscp	Defines an ingress-IP precedence-to-DSCP map for trusted interfaces.
mls qos map policed-dscp	Sets the mapping of policed DSCP values to marked-down DSCP values.

show mls qos mpls

To display an interface summary for MPLS QoS classes in the policy maps, use the **show mls qos mpls** command.

show mls qos mpls [{*interface interface-number*} | {**module** *slot*}]

Syntax Description

interface	(Optional) Interface type; possible valid values are **fastethernet**, **gigabitethernet**, **tengigabitethernet**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
module *slot*	(Optional) Specifies the module slot number.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

This command is supported in PFC3BXL or PFC3B mode only.

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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.

Examples

This example shows how to display an interface summary for MPLS QoS classes in the policy maps:

```
Router# show mls qos mpls
QoS Summary [MPLS]: (* - shared aggregates, Mod - switch module)
Int Mod Dir Class-map DSCP Agg Trust Fl AgForward-By AgPoliced-By
Id Id
-------------------------------------------------------------------------------------------
----------------------------
Fa3/38 5 In exp2 0 1 dscp 0 378900 0
Fa3/41 5 In exp4 0 3 dscp 0 0 0
All 5 - Default 0 0* No 0 1191011240 0
Router#
```

Related Commands

Command	Description
mls qos exp-mutation	Attaches an egress-EXP mutation map to the interface.
mls qos map exp-dscp	Defines the ingress EXP value to the internal DSCP map.
mls qos map exp-mutation	Maps a packet's EXP to a new EXP value.

show mls qos protocol

To display protocol pass-through information, use the **show mls qos protocol** command.

show mls qos protocol [**module** *num*]

Syntax Description

module *num*	(Optional) Specifies the module number.

Command Default

This command has no default settings.

Command Default

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display protocol pass-through information:

```
Router# show mls qos protocol
RIP : Passthru mode
OSPF : Passthru mode
ND : Policing mode Cir = 32000 Burst = 1000
----- Module [5] -----
Routing protocol RIP is using AgId 0*
Routing protocol OSPF is using AgId 0*
Routing protocol ND is using AgId 1
----- Module [6] -----
Routing protocol RIP is using AgId 0*
Routing protocol OSPF is using AgId 0*
Router#
```

Related Commands

Command	Description
mls qos protocol	Defines the routing-protocol packet policing.

show mls qos statistics-export info

To display information about the MLS-statistics data-export status and configuration, use the **show mls qos statistics-export info** command.

show mls qos statistics-export info

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display information about the MLS-statistics data-export status and configuration:

```
Router# show mls qos statistics-export info
QoS Statistics Data Export Status and Configuration information
---------------------------------------------------------------
Export Status : enabled
Export Interval : 250 seconds
Export Delimiter : @
Export Destination : 172.20.52.3, UDP port 514 Facility local6, Severity debug

QoS Statistics Data Export is enabled on following ports:
---------------------------------------------------------
FastEthernet5/24

QoS Statistics Data export is enabled on following shared aggregate policers:
-----------------------------------------------------------------------------
aggr1M

QoS Statistics Data Export is enabled on following class-maps:
--------------------------------------------------------------
class3
Router#
```

Related Commands

Command	Description
mls qos statistics-export (global configuration mode)	Enables QoS-statistics data export globally.
mls qos statistics-export (interface configuration mode)	Enables per-port QoS-statistics data export.
mls qos statistics-export aggregate-policer	Enables QoS-statistics data export on the named aggregate policer.
mls qos statistics-export class-map	Enables QoS-statistics data export for a class map.
mls qos statistics-export delimiter	Sets the QoS-statistics data-export field delimiter.
mls qos statistics-export destination	Configures the QoS-statistics data-export destination host and UDP port number.
mls qos statistics-export interval	Specifies how often a port and/or aggregate-policer QoS-statistics data is read and exported.

show mls rate-limit

To display information about the MLS rate limiter, use the **show mls rate-limit** command.

show mls rate-limit [**usage**]

Syntax Description

usage	(Optional) Displays the feature that is used with the rate-limiter register.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

In the command output, the rate-limit status could be one of the following:

- On indicates a rate for that particular case has been set.
- Off indicates that the rate-limiter type has not been configured, and the packets for that case are not rate limited.
- On/Sharing indicates a particular case (not manually configured) is affected by the configuration of another rate limiter belonging to the same sharing group.
- A hyphen indicates that the multicast partial-SC rate limiter is disabled.

In the command output, the rate-limit sharing indicates the following information:

- Whether sharing is static or dynamic
- Group dynamic sharing codes

The **show mls rate-limit usage** command displays the hardware register that is used by a rate-limiter type. If the register is not used by any rate-limiter type, Free is displayed in the output. If the register is used by a rate-limiter type, Used and the rate-limiter type are displayed.

Examples

This example shows how to display information about the rate-limit status:

```
Router# show mls rate-limit
 Sharing Codes: S - static, D - dynamic
 Codes dynamic sharing: H - owner (head) of the group, g - guest of the group

   Rate Limiter Type       Status     Packets/s   Burst  Sharing
 ----------------------   ----------   ---------   -----  -------
         MCAST NON RPF    Off                -       -     -
        MCAST DFLT ADJ    On            100000     100  Not sharing
      MCAST DIRECT CON    Off                -       -     -
        ACL BRIDGED IN    Off                -       -     -
       ACL BRIDGED OUT    Off                -       -     -
```

```
          IP FEATURES   Off                -       -     -
         ACL VACL LOG   On              2000       1  Not sharing
          CEF RECEIVE   Off                -       -     -
            CEF GLEAN   Off                -       -     -
      MCAST PARTIAL SC   On            100000     100  Not sharing
        IP RPF FAILURE   On               100      10  Group:0 S
           TTL FAILURE   On              1000     100  Not sharing
 ICMP UNREAC. NO-ROUTE   On               100      10  Group:0 S
 ICMP UNREAC. ACL-DROP   On               100      10  Group:0 S
         ICMP REDIRECT   Off                -       -     -
           MTU FAILURE   On              1000     100  Not sharing
       MCAST IP OPTION   Off                -       -     -
       UCAST IP OPTION   Off                -       -     -
           LAYER_2 PDU   Off                -       -     -
            LAYER_2 PT   Off                -       -     -
       LAYER_2 PORTSEC   On             10000       1  Not sharing
             IP ERRORS   On               100      10  Group:0 S
           CAPTURE PKT   Off                -       -     -
            MCAST IGMP   Off                -       -     -
 MCAST IPv6 DIRECT CON   Off                -       -     -
 MCAST IPv6 ROUTE CNTL   Off                -       -     -
 MCAST IPv6 *G M BRIDG   Off                -       -     -
  MCAST IPv6 SG BRIDGE   Off                -       -     -
  MCAST IPv6 DFLT DROP   Off                -       -     -
 MCAST IPv6 SECOND. DR   Off                -       -     -
  MCAST IPv6 *G BRIDGE   Off                -       -     -
        MCAST IPv6 MLD   Off                -       -     -
  IP ADMIS. ON L2 PORT   Off                -       -     -
Router#
```

This example shows how to display information about the rate-limit usage:

```
Router# show mls rate-limit usage
                          Rate Limiter Type       Packets/s   Burst
                          ---------------------   ---------   -----
Layer3 Rate Limiters:
             RL# 0: Free                          -           -       -
             RL# 1: Free                          -           -       -
             RL# 2: Free                          -           -       -
             RL# 3: Used
                                  MCAST DFLT ADJ      100000     100
             RL# 4: Used
                                     MTU FAILURE        1000     100
             RL# 5: Used
                                     TTL FAILURE        1000     100
             RL# 6: Used
                                   IP RPF FAILURE         100      10
                                ICMP UNREAC. NO-ROUTE     100      10
                                ICMP UNREAC. ACL-DROP     100      10
                                       IP ERRORS          100      10
             RL# 7: Used
                                  ACL VACL LOG        2000       1
             RL# 8: Rsvd for capture                  -           -       -

Layer2 Rate Limiters:
             RL# 9: Reserved
             RL#10: Reserved
             RL#11: Free                          -           -       -
             RL#12: Used
                                LAYER_2 PORTSEC       10000       1
Router #
```

Related Commands

Command	Description
mls rate-limit layer2	Enables and sets the rate limiters for the control packets in Layer 2.
mls rate-limit multicast ipv4	Enables and sets the rate limiters for the IPv4 multicast packets.
mls rate-limit multicast ipv6	Configures the IPv6 multicast rate limiters.
mls rate-limit unicast acl	Enables and sets the ACL-bridged rate limiters.

show mls sampling

To display information about the sampled NDE status, use the **show mls sampling** command.

show mls sampling

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

Sampled NetFlow is supported on Layer 3 interfaces only.

Examples

This example shows how to display information about the sampled NDE status:

```
Router# show mls sampling
time-based sampling is enabled
1 out of every 1024 packets is being sampled.
Sampling Interval and Period is 4 millisec per 4096 millisec
Router#
```

Related Commands

Command	Description
mls netflow sampling	Enables the sampled NetFlow on an interface.
mls sampling	Enables the sampled NetFlow and specifies the sampling method.

show mls statistics

To display the MLS statistics for the IP, multicast, Layer 2 protocol, and QoS, use the **show mls statistics** command.

show mls statistics [**module** *num* | **protocol** *type*]

Syntax Description

module *num*	(Optional) Displays the MLS statistics for a specific module.
protocol *type*	(Optional) Displays MLS statistics information based on a protocol (such as Telnet, FTP, or WWW).

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The total packets switched performance displayed is the rate calculated as the average rate in a period within the last 30 seconds.

The ingress ACL denied packet count is displayed in the Total packets L3 Switched field and in the Total packets dropped by ACL field.

The RPF failed packet count is displayed in the Total packets L3 Switched field.

If the IP multicast source sends traffic to any multicast group that does not have an (*,G) entry present in the mroute table, the **show mls statistics** command displays these packets as incrementing in the Total Mcast Packets Switched/Routed field. These packets are dropped in the hardware because there are no receivers for that group and no entry in the mroute table.

Examples

This example shows how to display the MLS statistics for all modules:

```
Router# show mls statistics

Statistics for Earl in Module 2

L2 Forwarding Engine
  Total packets Switched               : 20273@ 22552 pps

L3 Forwarding Engine
  Total Packets Bridged                : 20273
  Total Packets FIB Switched           : 7864
  Total Packets ACL Routed             : 0
  Total Packets Netflow Switched       : 0
  Total Mcast Packets Switched/Routed  : 220598
  Total ip packets with TOS changed    : 0
```

```
  Total ip packets with COS changed     : 0
  Total non ip packets COS changed      : 0
  Total packets dropped by ACL          : 0
  Total packets dropped by Policing     : 705757744

Statistics for Earl in Module 9

L2 Forwarding Engine
  Total packets Switched                : 16683@ 1 pps

L3 Forwarding Engine
  Total Packets Bridged                 : 0
  Total Packets FIB Switched            : 0
  Total Packets ACL Routed              : 0
  Total Packets Netflow Switched        : 0
  Total Mcast Packets Switched/Routed   : 0
  Total ip packets with TOS changed     : 0
  Total ip packets with COS changed     : 0
  Total non ip packets COS changed      : 0
  Total packets dropped by ACL          : 0
  Total packets dropped by Policing     : 277949053
Router#
```

This example shows how to display the MLS statistics for a specific module:

```
Router# show mls statistics module 1

Statistics for Earl in Module 1

L2 Forwarding Engine
  Total packets Switched                : 2748166@ 22332 pps
>>
L3 Forwarding Engine
  Total Packets Bridged                 : 92750@ 34 pps
  Total Packets FIB Switched            : 7
  Total Packets ACL Routed              : 0
  Total Packets Netflow Switched        : 0
  Total Mcast Packets Switched/Routed   : 3079200
  Total ip packets with TOS changed     : 0
  Total ip packets with COS changed     : 0
  Total non ip packets COS changed      : 0
  Total packets dropped by ACL          : 0
  Total packets dropped by Policing     : 0
  Total Unicast RPF failed packets      : 0

Errors
  MAC/IP length inconsistencies         : 0
  Short IP packets received             : 0
  IP header checksum errors             : 0
  MAC/IPX length inconsistencies        : 0
  Short IPX packets received            : 0
Router#
```

show mls table-contention

To display TCL information, use the **show mls table-contention** command.

show mls table-contention {**detailed** | **summary** | **aggregate**}

Syntax Description

detailed	Displays the detailed TCL information.
summary	Displays the TCL level.
aggregate	Displays the aggregate count of all missed flows in the Supervisor Engine 720 and page hits/misses in Supervisor Engine 2.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

You can enter the **aggregate** keyword to display the statistics for the NetFlow-creation failures and NetFlow-hash aliases in the Supervisor Engine 720.

You can enter the **aggregate** keyword to display the page hits and misses in the Supervisor Engine 2.

The last reading of the corresponding registers are displayed in the **summary** and **detailed** keywords for the Supervisor Engine 720.

Examples

This example shows how to display a detailed list of TCL information:

```
Router# show mls table-contention detailed
Detailed Table Contention Level Information
==========================================
Layer 3
-------
L3 Contention Level:     0
Page Hits Requiring 1 Lookup    =        31
Page Hits Requiring 2 Lookups   =        0
Page Hits Requiring 3 Lookups   =        0
Page Hits Requiring 4 Lookups   =        0
Page Hits Requiring 5 Lookups   =        0
Page Hits Requiring 6 Lookups   =        0
Page Hits Requiring 7 Lookups   =        0
Page Hits Requiring 8 Lookups   =        0
Page Misses                     =        0
Router#
```

This example shows how to display a summary of TCL information:

```
Router# show mls table-contention summary
```

```
Summary of Table Contention Levels (on a scale of 0 (lowest) to 3 (highest))
=============================================================================
L3 Contention Level: 0
```

This example shows how to display an aggregate count of all missed flows in the Supervisor Engine 720 and page hits/misses in Supervisor Engine 2:

```
Router# show mls table-contention aggregate
Earl in Module 1
Detailed Table Contention Level Information
==========================================
Layer 3
-------
L3 Contention Level:     0
Page Hits Requiring 1 Lookup    =        24000
Page Hits Requiring 2 Lookups   =        480
Page Hits Requiring 3 Lookups   =        0
Page Hits Requiring 4 Lookups   =        0
Page Hits Requiring 5 Lookups   =        0
Page Hits Requiring 6 Lookups   =        0
Page Hits Requiring 7 Lookups   =        0
Page Hits Requiring 8 Lookups   =        0
Page Misses                     =        0
```

show mmls igmp explicit-tracking

To display information about the host-tracking database, use the **show mmls igmp explicit-tracking** command.

show mmls igmp explicit-tracking [*vlan-id*]

Syntax Description

vlan-id	(Optional) VLAN ID; valid values are 1 to 4094.

Command Default

This command has no default settings.

Command Modes

Switch processor—Privileged EXEC (Switch-sp#)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display information about the host-tracking database for a specific VLAN:

```
Switch-sp# show mmls igmp explicit-tracking 27

Source/Group                    Interface    Reporter        Filter_mode
------------------------------------------------------------------------
10.1.1.1/224.1.1.1              Vl27:3/25    16.27.2.3       INCLUDE
10.2.2.2/224.1.1.1              Vl27:3/25    16.27.2.3       INCLUDE
Router#
```

show mmls msc

To display information about MMLS, use the **show mmls msc** command.

show mmls msc [**cache** | **entry** | **icroif-cache** | **rpdf-cache** | **statistics** | **vpn**]

Syntax Description

cache	(Optional) Displays information about the multicast shortcuts for the process cache.
entry	(Optional) Displays information about the dump-hardware entries in Layer 3.
icroif-cache	(Optional) Displays information about the dump-ICROIF cache.
rpdf-cache	(Optional) Displays information about the dump-Bidir RPDF cache.
statistics	(Optional) Displays statistics about the multicast-shortcuts process.
vpn	(Optional) Displays information about VPN.

Command Default

This command has no default settings.

Command Modes

Switch processor—Privileged EXEC (Switch-sp#)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display information about MMLS:

```
Switch-sp# show mmls msc

     General Info
     ------------------------------------------------------+------+
     Number shortcuts in software database                 1890
     Number of MFD in software database                    1890
     Router MAC                                            0001.64f8.1b00
     Internal Vlan                                         4093
     Aggregation Vlan                                      0
     Aggregation Indexes                                   0
     Current Size of inputQ                                0
     Maximum Size of inputQ                                2
     flow statistics timeout [sec]                         25
     non-rpf MFDs purge timeout [sec]                      20
     non-rpf MFDs aging timeout [sec]                      2.0
Switch-sp#
```

This example shows how to display information about the MMLS shortcut-process cache:

```
Switch-sp# show mmls msc cache

     -------------macg cache buckets for vpn 0-----------------
     Bucket 90 #g: 1
     Group mac address: 0100.5e01.0105
       $$$ (S,G,C): (100.0.0.4, 224.1.1.5, 100)      mfd_flag: 1  type: Sparse
```

```
      $$$ (S,G,C): (0.0.0.0, 224.1.1.5, 1)      mfd_flag: 1  type: Sparse
      ### vlan:  100   sc_count:     0 rpf_count:     1
      ### vlan:    1   sc_count:     0 rpf_count:     1
    Bucket 91 #g: 1
    Group mac address: 0100.5e01.0104
      $$$ (S,G,C): (100.0.0.4, 224.1.1.4, 100)      mfd_flag: 1  type: Sparse
      $$$ (S,G,C): (0.0.0.0, 224.1.1.4, 1)      mfd_flag: 1  type: Sparse
      ### vlan:  100   sc_count:     0 rpf_count:     1
      ### vlan:    1   sc_count:     0 rpf_count:     1
    Bucket 92 #g: 1
    Group mac address: 0100.5e01.0103
      $$$ (S,G,C): (100.0.0.4, 224.1.1.3, 100)      mfd_flag: 1  type: Sparse
      $$$ (S,G,C): (0.0.0.0, 224.1.1.3, 1)      mfd_flag: 1  type: Sparse
      ### vlan:  100   sc_count:     0 rpf_count:     1
      ### vlan:    1   sc_count:     0 rpf_count:     1
    Bucket 93 #g: 1
    Group mac address: 0100.5e01.0102
      $$$ (S,G,C): (100.0.0.4, 224.1.1.2, 100)      mfd_flag: 1  type: Sparse
      $$$ (S,G,C): (0.0.0.0, 224.1.1.2, 1)      mfd_flag: 1  type: Sparse
      ### vlan:  100   sc_count:     0 rpf_count:     1
      ### vlan:    1   sc_count:     0 rpf_count:     1
    Bucket 94 #g: 1
    Group mac address: 0100.5e01.0101
      $$$ (S,G,C): (100.0.0.4, 224.1.1.1, 100)      mfd_flag: 1  type: Sparse
      $$$ (S,G,C): (0.0.0.0, 224.1.1.1, 1)      mfd_flag: 1  type: Sparse
      ### vlan:  100   sc_count:     0 rpf_count:     1
      ### vlan:    1   sc_count:     0 rpf_count:     1
Switch-sp#
```

This example shows how to display dump ICROIF-cache information:

```
Switch-sp# show mmls msc icroif-cache

    msc_local_icroif_index:  0x493
    msc_global_icroif_index: 0x494

    ICROIF CACHE:
    -------------
    Module mask: 0x8       Icroif_index: 0x495
Switch-sp#
```

This example shows how to display a dump list of DF interfaces for the PIM-RPs:

```
Switch-sp# show mmls msc rpdf-cache

--------------- RP-CACHE [VPN-0] --------------

Bucket# :0

        RP-addr: 1.0.0.1, Rpf: 0 Vpn: 0
        DF-index: 0
        DF-list:  201  202  203  204  205  206  207  208  209  210
                  211  212
        Group-list:
                (224.1.0.0/24, H)
        G/m-count: 1, G/32-count: 1

Bucket# :2

        RP-addr: 3.0.0.1, Rpf: 0 Vpn: 0
        DF-index: 2
        DF-list:  201  202  203  204  205  206  207  208  209  210
                  211  212
```

```
        Group-list:
                (224.1.2.0/24, H)
        G/m-count: 1, G/32-count: 0

Bucket# :3

        RP-addr: 2.0.0.1, Rpf: 0 Vpn: 0
        DF-index: 1
        DF-list:  201  202  203  204  205  206  207  208  209  210
                  211  212
        Group-list:
                (224.1.1.0/24, H)
        G/m-count: 1, G/32-count: 1

Bucket# :5

        RP-addr: 4.0.0.1, Rpf: 0 Vpn: 0
        DF-index: 3
        DF-list:  201  202  203  204  205  206  207  208  209  210
                  211  212
        Group-list:
                (224.1.3.0/24, H)
        G/m-count: 1, G/32-count: 0
Switch-sp#
```

This example shows how to display the statistics for the multicast-shortcut process:

```
Switch-sp# show mmls msc statistics

     Communication Statistics
     ------------------------------------------------+------+
     Number MSM PDU Received                          1
     Number MSM PDU Sent                              1
     Unsolicited Feature Notification Sent            1
     Feature Notification Received                    2
     Feature Notification Sent                        2
     Stop retry  Sent                                 0
     Stop download Sent                               0

     Error Statistics
     ------------------------------------------------+------+
     L2 entry not found                               0
     LTL full error                                   0
     MET full error                                   0

     Debug Statistics
     ------------------------------------------------+------+
     HW Met failure                                   0
     HW Dist failure                                  0
     HW L3 Install failure                            0
     HW L3 Update failure                             0

     TLV Statistics
     ------------------------------------------------+------+
     INSTALL TLV Received                             0
     SELECTIVE DELETE TLV Received                    0
     GROUP DELETE TLV Received                        0
     UPDATE TLV Received                              0
     INPUT VLAN DELETE TLV Received                   0
     OUTPUT VLAN DELETE TLV Received                  0
     GLOBAL DELETE TLV Received                       0
     MFD INSTALL TLV Received                         0
     MFD DELETE TLV Received                          0
     MFD GLOBAL DELETE Received                       0
```

```
NRPF MFD INSTALL TLV Received                    0
NRPF MFD DELETE TLV Received                     0
SUBNET INSTALL TLV Received                      15
SUBNET DELETE TLV Received                       0
MVPN INSTALL TLV Received                        0
MVPN SELECTIVE DELETE TLV Received               0
MVPN UPDATE TLV Received                         0
MVPN GROUP DELETE TLV Received                   0
MVPN MFD INSTALL TLV Received                    0
MVPN MFD DELETE TLV Received                     0
MVPN BIDIR RPDF UPDATE TLV Received              0
MVPN BIDIR RP UPDATE TLV Received                0
MVPN BIDIR CLEAR ALL GRP TLV Received            0
MVPN BIDIR CLEAR RP GRP TLV Received             0
MVPN BIDIR CLEAR ALL DF TLV Received             0
MVPN BIDIR CLEAR RP DF TLV Received              0
MVPN BIDIR CLEAR ALL RP TLV Received             0
MVPN BIDIR NONDF INSTALL TLV Received            0

INSTALL TLV Ack Sent                             0
SELECTIVE DELETE TLV Ack Sent                    0
GROUP DELETE TLV Ack Sent                        0
UPDATE TLV Ack Sent                              0
INPUT VLAN DELETE TLV Ack Sent                   0
OUTPUT VLAN DELETE TLV Ack Sent                  0
GLOBAL DELETE TLV Ack Sent                       0
MFD INSTALL TLV Ack Sent                         0
MFD DELETE TLV Ack Sent                          0
MFD GLOBAL DELETE Ack Sent                       0
NRPF MFD INSTALL TLV Ack Sent                    0
NRPF MFD DELETE TLV Ack Sent                     0
SUBNET INSTALL TLV Ack Sent                      15
SUBNET DELETE TLV Ack Sent                       0
MVPN INSTALL TLV Ack Sent                        0
MVPN SELECTIVE DELETE TLV Ack Sent               0
MVPN UPDATE TLV Ack Sent                         0
MVPN GROUP DELETE TLV Ack Sent                   0
MVPN MFD INSTALL TLV Ack Sent                    0
MVPN MFD DELETE TLV Ack Sent                     0
MVPN BIDIR RPDF UPDATE TLV Ack Sent              0
MVPN BIDIR RP UPDATE TLV Ack Sent                0
MVPN BIDIR CLEAR ALL GRP TLV Ack Sent            1
MVPN BIDIR CLEAR RP GRP TLV Ack Sent             0
MVPN BIDIR CLEAR ALL DF TLV Ack Sent             0
MVPN BIDIR CLEAR RP DF TLV Ack Sent              0
MVPN BIDIR CLEAR ALL RP TLV Ack Sent             0
MVPN BIDIR NONDF INSTALL TLV Ack Sent            0

TLV Error Statistics
-------------------------------------------------+-------+
Generic error                                    0
L3 entry exist error                             0
Hash collision error                             0
L3 entry not found                               0
MFD exist error                                  0
MFD not found error                              0
Invalid subnet error                             0
Bidir-RP not found error                         0
Bidir-DF partial fail error                      0
Bidir-DF Table full error                        0
```

```
      TLV Debug Statistics
      ------------------------------------------------+------+
      Non RPF L3 failure                                0
      Bidir DF install                                  0
      Bidir DF failure                                  0
      Bidir NDF install                                 0
      Bidir NDF failure                                 0
      Bidir DF err-tlv sent                             0
      Bidir GRP err-tlv sent                            0
Switch-sp#
```

show mobility

To display information about the Layer 3 mobility and the wireless network, use the **show mobility** command.

show mobility {{**ap** [*ipaddr*]} | {**mn** [**ip** *ipaddr*]} | {**mac** *mac-addr*} | {**network** *network-id*} | **status**}

Syntax Description

ap	Displays information about the access point.
ipaddr	(Optional) IP address.
mn	Displays information about the mobile node.
ip *ipaddr*	(Optional) Displays information about the IP database thread.
mac *mac-addr*	(Optional) Displays information about the MAC database thread.
network *network-id*	Displays information for a specific wireless network ID.
status	Displays status information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

This command is supported on Catalyst 6500 series switches that are configured with a WLSM only.

Examples

This example shows how to display information about the access point:

```
Router# show mobility ap
AP IP Address   AP Mac Address Wireless Network-ID
--------------- -------------- -------------------
148.1.1.2 000d.29a2.a852 101 102 109 103
Router#
```

This example shows how to display information about the access points for a specific network ID:

```
Router# show mobility ap 148.1.1.2 detail
IP Address : 148.1.1.2
MAC Address : 000d.29a2.a852
Participating Wireless Tunnels: 101, 102, 109, 103

Registered Mobile Nodes on AP {148.1.1.2, 000d.29a2.a852} :
MN Mac Address MN IP Address AP IP Address Wireless Network-ID
-------------- --------------- --------------- -------------------
000a.8afa.85c9 10.1.3.11 148.1.1.2 103
```

```
000d.bdb7.83f7 10.1.2.11 148.1.1.2 102
000d.bdb7.83fb 10.1.1.11 148.1.1.2 101
Router#

Router# show mobility network-id 101
Wireless Network ID : 101
Wireless Tunnel Source IP Address : 1.1.1.1
Wireless Network Properties : Trusted
Wireless Network State : Up

Registered Access Point on Wireless Network 101:
AP IP Address AP Mac Address Wireless Network-ID
--------------- -------------- -------------------
148.1.1.2 000d.29a2.a852 101 102 109 103

Registered Mobile Nodes on Wireless Network 101:
MN Mac Address MN IP Address AP IP Address Wireless Network-ID
-------------- --------------- --------------- -------------------
000d.bdb7.83fb 10.1.1.11 148.1.1.2 101
Router#

Router# show mobility status
WLAN Module is located in Slot: 4 (HSRP State: Active) LCP
Communication status      : up
MAC address used for Proxy ARP: 0030.a349.d800
Number of Wireless Tunnels    : 1
Number of Access Points       : 2
Number of Mobile Nodes        : 0
Wireless Tunnel Bindings:
Src IP Address   Wireless Network-ID  Flags
---------------  -------------------  -------
1.1.1.1          101                  B
Flags: T=Trusted, B=IP Broadcast enabled, A=TCP Adjust-mss enabled
Router#
```

Related Commands

Command	Description
mobility	Configures the wireless mGRE tunnels.

show module

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

show module [*mod-num* | **all** | **power** | **provision** | **version**]

Syntax Description

mod-num	(Optional) Number of the module.
all	(Optional) Displays the information for all modules.
power	(Optional) Displays administration and operating status.
provision	(Optional) Displays the status about the module provisioning.
version	(Optional) Displays the version information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	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.

Entering the **show module** command with no arguments is the same as entering the **show module all** command.

Examples

This example shows how to display information for all modules on a Catalyst 6500 series switch that is configured with a Supervisor Engine 720:

```
Router# show module
Mod Ports Card Type                                Model              Serial No.
--- ----- -------------------------------------- ------------------ -----------
  5     2 Supervisor Engine 720 (Active)         WS-SUP720-BASE     SAD0644030K
  8    48 aCEF720 48 port 10/100/1000 Ethernet   WS-X6748-GE-TX     SAD07010045
  9    32 dCEF720 32 port Gigabit Ethernet       WS-X6832-SFP       SAD07010045

Mod MAC addresses                       Hw     Fw           Sw           Status
--- ---------------------------------- ------ ------------ ------------ -------
  5 00e0.aabb.cc00 to 00e0.aabb.cc3f   1.0    12.2(2003012 12.2(2003012 Ok
  8 0005.9a3b.d8c4 to 0005.9a3b.d8c7   0.705  7.1(0.12-Eng 12.2(2003012 Ok
  9 00e0.b0ff.f0f4 to 00e0.b0ff.f0f5   0.207  12.2(2002082 12.2(2003012 Ok
```

```
Mod Sub-Module                  Model           Serial           Hw     Status
--- --------------------------- --------------- ---------------- ------- -------
  5 Policy Feature Card 3       WS-F6K-PFC3     SAD0644031P     0.302   Ok
  5 PISA Daughtercard          WS-SUP720       SAD06460172     0.701

Mod Online Diag Status
--- -------------------
  5 Not Available
  7 Bypass
  8 Bypass
  9 Bypass
Router#
```

This example shows how to display information for a specific module:

```
Router# show module 2
Mod Ports Card Type                                Model              Serial No.
--- ----- ---------------------------------------- ------------------ -----------
  5     2 Supervisor Engine 720 (Active)           WS-SUP720-BASE     SAD0644030K

Mod MAC addresses                       Hw    Fw           Sw           Status
--- ----------------------------------- ------ ------------ ------------ -------
  5 00e0.aabb.cc00 to 00e0.aabb.cc3f   1.0    12.2(2003012 12.2(2003012 Ok

Mod Sub-Module                  Model           Serial           Hw     Status
--- --------------------------- --------------- ---------------- ------- -------
  5 Policy Feature Card 3       WS-F6K-PFC3     SAD0644031P     0.302   Ok
  5 PISA Daughtercard          WS-SUP720       SAD06460172     0.701

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

This example shows how to display version information:

```
Router# show module version
Mod Port Model              Serial #    Versions
--- ---- ------------------ ----------- -------------------------------------
  2 0    WS-X6182-2PA                   Hw : 1.0
                     Fw : 12.2(20030125:231135)
                     Sw : 12.2(20030125:231135)
  4 16   WS-X6816-GBIC      SAD04400CEE Hw : 0.205
  6 2    WS-X6K-SUP3-BASE   SAD064300GU Hw : 0.705
                     Fw : 7.1(0.12-Eng-02)TAM
                     Sw : 12.2(20030125:231135)
                     Sw1: 8.1(0.45)KIS
         WS-X6K-SUP3-PFC3   SAD064200VR Hw : 0.701
                     Fw : 12.2(20021016:001154)
                     Sw : 12.2(20030125:231135)
         WS-F6K-PFC3        SAD064300M7 Hw : 0.301
  9 48   WS-X6548-RJ-45     SAD04490BAC Hw : 0.301
                     Fw : 6.3(1)
                     Sw : 7.5(0.30)CFW11
Router#
```

This example shows how to display the administration and operating status of the modules:

```
Router# show module power
 Mod Card Type                              Admin Status  Oper Status
 --- -------------------------------------- ------------  ------------
  1  SFM-capable 48-port 10/100 Mbps RJ45   on            on
  4  SFM-capable 16 port 1000mb GBIC        on            on
  5  Supervisor Engine 720 (Active)         on            on
Router#
```

This example shows how to display module provisioning information:

```
Router# show module provision
Module Provision
  1    dynamic
  2    dynamic
  3    dynamic
  4    dynamic
  5    dynamic
  6    dynamic
  7    dynamic
  8    dynamic
  9    dynamic
 10    dynamic
 11    dynamic
 12    dynamic
 13    dynamic
Router#
```

show monitor permit-list

To display the permit-list state and interfaces configured, use the **show monitor permit-list** command.

show monitor permit-list

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the permit-list state and interfaces configured:

```
Router# show monitor permit-list
 SPAN Permit-list      :Admin Enabled
 Permit-list ports     :Gi5/1-4,Gi6/1
Router(config)#
```

Related Commands

Command	Description
monitor permit-list	Configures a destination port permit list or adds to an existing destination port permit list.

show monitor session

To display information about the ERSPAN, SPAN and RSPAN sessions, use the **show monitor session** command.

show monitor session [{**range** *session-range*} | **local** | **remote** | **all** | *session*]

show monitor session [**erspan-destination** | **erspan-source**] [**detail**]

Syntax Description

range *session-range*	(Optional) Displays a range of sessions; valid values are from 1 to 66. See the "Usage Guidelines" section for additional information.
local	(Optional) Displays only local SPAN sessions.
remote	(Optional) Displays both RSPAN source and destination sessions.
all	(Optional) Displays all sessions.
session	(Optional) Number of the session; valid values are from 1 to 66.
erspan-destination	(Optional) Displays information about the destination ERSPAN sessions only.
erspan-source	(Optional) Displays information about the source ERSPAN sessions only.
detail	(Optional) Displays detailed session information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

When entering a range of sessions, use a dash (-) to specify a range and separate multiple entries with a comma (,). Do not enter spaces before or after the comma or the dash.

You can enter multiple ranges by separating the ranges with a comma.

If you enter the **show monitor session** command without specifying a session, the information for all sessions is displayed.

Examples

This example shows how to display the saved version of the monitor configuration for a specific session:

```
Router# show monitor session 2
Session 2
------------
Type : Remote Source Session
Source Ports:
    RX Only:       Fa1/1-3
Dest RSPAN VLAN:   901
Router#
```

This example shows how to display the detailed information from a saved version of the monitor configuration for a specific session:

```
Router# show monitor session 2 detail
Session 2
------------
Type : Remote Source Session

Source Ports:
    RX Only:       Fa1/1-3
    TX Only:       None
    Both:          None
Source VLANs:
    RX Only:       None
    TX Only:       None
    Both:          None
Source RSPAN VLAN: None
Destination Ports: None
Filter VLANs:      None
Dest RSPAN VLAN:   901
Router#
```

This example shows how to display information about the destination ERSPAN sessions only:

```
Router# show monitor session erspan-destination
Session 2
---------
Type           : ERSPAN Destination Session
Status         : Admin Disabled
Router#
```

This example shows how to display detailed information about the destination ERSPAN sessions only:

```
Router# show monitor session erspan-destination detail
Session 2
---------
Type                   : ERSPAN Destination Session
Status                 : Admin Disabled
Description            : -
Source Ports           :
    RX Only            : None
    TX Only            : None
    Both               : None
Source VLANs           :
    RX Only            : None
    TX Only            : None
    Both               : None
Source RSPAN VLAN      : None
Destination Ports      : None
Filter VLANs           : None
Destination RSPAN VLAN : None
Source IP Address      : None
Source IP VRF          : None
Source ERSPAN ID       : None
Destination IP Address : None
Destination IP VRF     : None
Destination ERSPAN ID  : None
Origin IP Address      : None
IP QOS PREC            : 0
IP TTL                 : 255
Router#
```

This example shows how to display information about the source ERSPAN sessions only:

```
Router# show monitor session erspan-source
Session 1
---------
Type                   : ERSPAN Source Session
Status                 : Admin Disabled
Session 3
---------
Type                   : ERSPAN Source Session
Status                 : Admin Disabled
Router#
```

This example shows how to display detailed information about the source ERSPAN sessions only:

```
Router# show monitor session erspan-source detail
Session 1
---------
Type                   : ERSPAN Source Session
Status                 : Admin Disabled
Description            : -
Source Ports           :
    RX Only            : None
    TX Only            : None
    Both               : None
Source VLANs           :
    RX Only            : None
    TX Only            : None
    Both               : None
Source RSPAN VLAN      : None
Destination Ports      : None
Filter VLANs           : None
Destination RSPAN VLAN : None
Source IP Address      : None
Source IP VRF          : None
Source ERSPAN ID       : None
Destination IP Address : None
Destination IP VRF     : None
Destination ERSPAN ID  : None
Origin IP Address      : None
IP QOS PREC            : 0
IP TTL                 : 255

Session 3
---------
Type                   : ERSPAN Source Session
Status                 : Admin Disabled
Description            : -
Source Ports           :
    RX Only            : None
    TX Only            : None
    Both               : None
Source VLANs           :
    RX Only            : None
    TX Only            : None
    Both               : None
Source RSPAN VLAN      : None
Destination Ports      : None
Filter VLANs           : None
Destination RSPAN VLAN : None
Source IP Address      : None
Source IP VRF          : None
Source ERSPAN ID       : None
Destination IP Address : None
Destination IP VRF     : None
Destination ERSPAN ID  : None
```

```
Origin IP Address       : None
IP QOS PREC             : 0
IP TTL                  : 255
Router#
```

Related Commands

Command	Description
monitor session	Starts a new ERSPAN, SPAN, or RSPAN session, adds or deletes interfaces or VLANs to or from an existing session, filters ERSPAN, SPAN, or RSPAN traffic to specific VLANs, or deletes a session.
monitor session type	Creates an ERSPAN source session number or enters the ERSPAN session configuration mode for the session.
remote-span	Configures a VLAN as an RSPAN VLAN.

show mpls l2transport vc

To display the state of virtual circuits on a router, use the **show mpls l2transport vc** command.

show mpls l2transport vc [**detail**] [[*vc-id*] | [*vc-id-min*] *vc-id-max*] | [**summary**]

Syntax Description

detail	(Optional) Displays the detailed information about the virtual circuits on a PE router.
vc-id	(Optional) Virtual-circuit ID.
vc-id-min	(Optional) Range of virtual-circuit IDs to be displayed; valid values are from 0 to 429467295.
vc-id-max	(Optional) Range of virtual-circuit IDs; valid values are from 0 to 429467295.
summary	(Optional) Displays a summary of the active virtual circuits on a PE router's MPLS interfaces.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the status of the virtual circuits on the switch:

```
Router# show mpls l2transport vc
Transport Client     VC       Local       Remote      Tunnel
VC ID     Intf       State    VC Label    VC Label    Label
4         Vl4        UP       23          21          77
101       Vl101      UP       24          22          77
Router#
```

This example shows the output of the **summary** keyword:

```
Router# show mpls l2transport vc summary
MPLS interface VC summary:
  interface: Gi8/1, programmed imposition vcs: 1
  interface: Gi8/3, programmed imposition vcs: 1

VC summary (active/non-active) by destination:
  destination: 13.0.0.1, Number of locally configured vc(s): 2
Router#
```

This example shows the detailed information about the currently routed virtual circuits on the switch interfaces:

```
Router# show mpls l2transport vc detail
VC ID: 111, Local Group ID: 5, Remote Group ID: 2 (VC is up)
Client Intf: Gi1/0.1 is up, Destination: 2.2.2.2, Peer LDP Ident: 2.2.2.2:0
Local VC Label: 17, Remote VC Label: 17, Tunnel Label: 16
```

```
Outgoing Interface: Gi0/0, Next Hop: 12.1.1.3
Local MTU: 1500, Remote MTU: 1500
Remote interface description: GigabitEthernet0/0.1
Imposition: LC Programmed
Current Imposition/Last Disposition Slot: 1/255
Packet Totals(in/out): 0/0
Byte totals(in/out): 0/0

VC ID: 123, Local Group ID: 6, Remote Group ID: 3 (VC is up)
Client Intf: Gi1/0.2 is up, Destination: 2.2.2.2, Peer LDP Ident: 2.2.2.2:0
Local VC Label: 18, Remote VC Label: 19, Tunnel Label: 16
Outgoing Interface: Gi0/0, Next Hop: 12.1.1.3
Local MTU: 1500, Remote MTU: 1500
Remote interface description: GigabitEthernet0/0.2
Imposition: LC Programmed
Current Imposition/Last Disposition Slot: 1/255
Packet Totals(in/out): 0/0
Byte totals(in/out): 0/0
Router#
```

This example shows information about the detailed virtual circuit for a specified virtual circuit:

```
Router# show mpls l2transport vc 111 detail

VC ID: 111, Local Group ID: 5, Remote Group ID: 2 (VC is up)
Client Intf: Gi1/0.1 is up, Destination: 2.2.2.2, Peer LDP Ident: 2.2.2.2:0
Local VC Label: 17, Remote VC Label: 17, Tunnel Label: 16
Outgoing Interface: Gi0/0, Next Hop: 12.1.1.3
Local MTU: 1500, Remote MTU: 1500
Remote interface description: GigabitEthernet0/0.1
Imposition: LC Programmed
Current Imposition/Last Disposition Slot: 1/255
Packet Totals(in/out): 0/0
Byte totals(in/out): 0/0
Router#
```

Table 2-83 describes the fields that are shown in the example.

Table 2-83 show mpls l2transport vc Command Field Descriptions

Field	Description
Transport VC ID	Virtual-circuit identifier that is assigned to one of the interfaces on the switch.
Client Intf	Ingress or egress interface through which the Layer 2-VLAN packet travels.
VC State	Status of the virtual circuit. The status can be one of the following: • UP—The virtual circuit is in a state where it can carry traffic between the two virtual-circuit end points. A virtual circuit is up when both imposition and disposition interfaces are programmed. The disposition interfaces are programmed if the virtual circuit has been configured and the client interface is up. The imposition interface is programmed if the disposition interface is programmed and you have a remote virtual-circuit label and an IGP label. The IGP label can be implicit null in a back-to-back configuration. (An IGP label means that there is a LSP to the peer.) • DOWN—The VC is not ready to carry traffic between the two virtual-circuit end points.

Table 2-83 show mpls l2transport vc Command Field Descriptions (continued)

Field	Description
Local VC Label	Virtual-circuit label that a router signals to its peer router, which is used by the peer router during imposition. The local virtual-circuit label is a disposition label and determines the egress interface of an arriving packet from the MPLS backbone.
Remote VC Label	Disposition virtual-circuit label of the remote peer router.
Tunnel Label	IGP label that is used to route the packet over the MPLS backbone to the destination router with the egress interface.
VC ID	Virtual-circuit identifier that is assigned to one of the interfaces on the router.
Local Group ID	ID that is used to group virtual circuits locally. Ethernet over MPLS groups virtual circuits by the hardware port, which is unique for each port on a router.
Remote Group ID	ID that is used by the peer to group several virtual circuits.
Client	Ingress or egress interface through which the Layer 2-VLAN packet travels.
Destination	Destination that is specified for this virtual circuit. You specify the destination IP address as part of the **mpls l2transport route vc** command.
Peer LDP ID	Targeted peer's LDP IP address.
Outgoing Interface	Egress interface of the virtual circuit.
Next Hop	IP address of the next hop.
Local MTU	Maximum transmission unit that is specified for the client interface.
Remote MTU	Maximum transmission unit that is specified for the remote router's client interface.

Table 2-83 show mpls l2transport vc Command Field Descriptions (continued)

Field	Description
Imposition	Status of the module.
LC programmed	LC not programmed.
Current Imposition/ Last Disposition Slot	Current imposition is the outgoing interface that is used for imposition. Last disposition slot is the interface where packets for this virtual circuit arrive.
Packet Totals (in/out)	Total number of packets that are forwarded in each direction.
Byte Totals (in/out)	Total number of bytes that are forwarded in each direction.

Related Commands

Command	Description
mpls l2transport route	Enables routing of Layer 2 packets over MPLS.

show mpls platform

To display platform-specific information, use the **show mpls platform** command.

show mpls platform {**common** | **eompls** | **gbte-tunnels** | **reserved-vlans vlan** *vlan-id* | {**statistics** [**reset**]} | **vpn-vlan-mapping**}

Syntax Description

common	Displays the counters for shared code between the LAN and WAN interfaces.
eompls	Displays information about the EoMPLS-enabled interface.
gbte-tunnels	Displays information about the MMLS GBTE tunnels.
reserved-vlans vlan *vlan-id*	Displays RP-reserved VLAN **show** commands; valid values are from 0 to 4095.
statistics	Displays information about the RP-control plane statistics.
reset	(Optional) Resets the statistics counters.
vpn-vlan-mapping	Displays information about the VPN-to-VLAN mapping table.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the counters for shared code between the LAN and WAN interfaces:

```
Router# show mpls platform common
Common MPLS counters for LAN and WAN
-------------------------------------

 No. of MPLS configured LAN interfaces           = 12
 No. of cross-connect configured VLAN interfaces = 0
Router#
```

This example shows how to display the EoMPLS-enabled interface information:

```
Router# show mpls platform eompls
Interface        VLAN
GigabitEthernet  101
FastEthernet6/1  2022
Router#
```

This example shows how to display the GBTE-tunnels information:

```
Router# show mpls platform gbte-tunnels
To            From          InLbl   I/I/F kbps     Kbits    H/W Info
Router#
```

This example shows how to display the RP-reserved VLAN **show** commands:

```
Router# show mpls platform reserved-vlans vlan 1005
Router#
```

Note This example shows the output if there are no configured reserved VLANs.

This example shows how to display the information about the RP-control plane statistics:

```
Router# show mpls platform statistics
              RP MPLS Control Plane Statistics:
      ================================================
Reserved VLAN creates                     0000000001
Reserved VLAN frees                       0000000000
Reserved VLAN creation failures           0000000000
Aggregate Label adds                      0000000001
Aggregate Label frees                     0000000000
Aggregate Labels in Superman              0000000001
Feature Rsvd VLAN Reqs                    0000000000
Feature Gen Rsvd VLAN Reqs                0000000000
Feature Rsvd VLAN Free Reqs               0000000000
EoMPLS VPN# Msgs                          0000000009
EoMPLS VPN# Msg Failures                  0000000000
EoMPLS VPN# Msg Rsp Failures              0000000000
EoMPLS VPN# Set Reqs                      0000000010
EoMPLS VPN# Reset Reqs                    0000000008
FIDB mallocs                              0000000000
FIDB malloc failures                      0000000000
FIDB frees                                0000000000
EoMPLS Req mallocs                        0000000018
EoMPLS Req malloc failures                0000000000
EoMPLS Req frees                          0000000018
EoMPLS VPN# allocs                        0000000010
EoMPLS VPN# frees                         0000000008
EoMPLS VPN# alloc failures                0000000000
GB TE tunnel additions                    0000000000
GB TE tunnel label resolves               0000000000
GB TE tunnel deletions                    0000000000
GB TE tunnel changes                      0000000000
GB TE tunnel heads skips                  0000000000
gb_flow allocs                            0000000000
gb_flow frees                             0000000000
rsvp req creats                           0000000000
rsvp req frees                            0000000000
rsvp req malloc failures                  0000000000
gb_flow malloc failures                   0000000000
psb search failures                       0000000000
GB TE tunnel deleton w/o gb_flow          0000000000
errors finding slot number                0000000000
Router#
```

This example shows how to reset the RP-control plane statistics counters:

```
Router# show mpls platform statistics reset
Resetting Const RP MPLS control plane software statistics ...
GB TE tunnel additions                    0000000000
GB TE tunnel label resolves               0000000000
GB TE tunnel deletions                    0000000000
GB TE tunnel changes                      0000000000
GB TE tunnel heads skips                  0000000000
gb_flow allocs                            0000000000
```

```
gb_flow frees                           0000000000
rsvp req creats                         0000000000
rsvp req frees                          0000000000
rsvp req malloc failures                0000000000
gb_flow malloc failures                 0000000000
psb search failures                     0000000000
GB TE tunnel deleton w/o gb_flow        0000000000
errors finding slot number              0000000000
Router#
```

This example shows how to display information about the VPN-to-VLAN mapping table:

```
Router# show mpls platform vpn-vlan-mapping
VPN#  Rsvd Vlan  IDB Created  Feature  Has agg label  In superman    EoM data
0     1025       Yes          No       No             No             No
1     0          No           No       Yes            Yes            No
Router#
```

show mpls ttfib

To display information about the MPLS TTFIB table, use the **show mpls ttfib** command.

show mpls ttfib [{**detail** [**hardware**]} | {**vrf** *instance* [**detail**]}

Syntax Description

detail	(Optional) Displays detailed information.
hardware	(Optional) Displays detailed hardware information.
vrf *instance*	(Optional) Displays entries for a specified VPN Routing/Forwarding instance.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display information about the MPLS TTFIB table:

```
Router# show mpls ttfib
Local  Outgoing    Packets Tag          LTL   Dest.   Destination    Outgoing
Tag    Tag or VC   Switched             Index Vlanid  Mac Address    Interface
4116   21          0                    0xE0  1020    0000.0400.0000 PO4/1*
       34          0                    0x132 1019    00d0.040d.380a GE5/3
       45          0                    0xE3  4031    0000.0430.0000 PO4/4
4117   16          0                    0x132 1019    00d0.040d.380a GE5/3*
       17          0                    0xE0  1020    0000.0400.0000 PO4/1
       18          0                    0xE3  4031    0000.0430.0000 PO4/4
4118   21          0                    0xE0  1020    0000.0400.0000 PO4/1*
       56          0                    0xE3  4031    0000.0430.0000 PO4/4
4119   35          0                    0xE3  4031    0000.0430.0000 PO4/4*
       47          0                    0xE0  1020    0000.0400.0000 PO4/1
```

show pagp

To display port-channel information, use the **show pagp** command.

show pagp [*group-number*] {**counters** | **internal** | **neighbor** | **pgroup**}

Syntax Description

group-number	(Optional) Channel-group number; valid values are a maximum of 64 values from 1 to 282.
counters	Displays the traffic information.
internal	Displays the internal information.
neighbor	Displays the neighbor information.
pgroup	Displays the active port channels.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

You can enter any **show pagp** command to display the active port-channel information. To display the nonactive information, enter the **show pagp** command with a group.

The **port-channel** *number* values from 257 to 282 are supported on the CSM and the FWSM only.

Examples

This example shows how to display information about the PAgP counters:

```
Router# show pagp counters
          Information        Flush
Port      Sent   Recv     Sent   Recv
---------------------------------------
Channel group: 1
  Fa5/4    2660   2452     0      0
  Fa5/5    2676   2453     0      0
Channel group: 2
  Fa5/6    289    261      0      0
  Fa5/7    290    261      0      0
Channel group: 1023
  Fa5/9    0      0        0      0
Channel group: 1024
  Fa5/8    0      0        0      0
Router#
```

This example shows how to display internal PAgP information:

```
Router# show pagp 1 internal
Flags:  S - Device is sending Slow hello.  C - Device is in Consistent state.
        A - Device is in Auto mode.
Timers: H - Hello timer is running.        Q - Quit timer is running.
        S - Switching timer is running.    I - Interface timer is running.

Channel group 1
                              Hello    Partner  PAgP     Learning
Port      Flags State   Timers  Interval Count   Priority  Method
Fa5/4     SC    U6/S7           30s      1        128       Any
Fa5/5     SC    U6/S7           30s      1        128       Any
Router#
```

This example shows how to display PAgP-neighbor information for all neighbors:

```
Router# show pagp neighbor
Flags:  S - Device is sending Slow hello.  C - Device is in Consistent state.
        A - Device is in Auto mode.        P - Device learns on physical port.

Channel group 1 neighbors
          Partner               Partner          Partner          Partner Group
Port      Name                  Device ID        Port       Age   Flags   Cap.
Fa5/4     JAB031301             0050.0f10.230c   2/45         2s  SAC     2D
Fa5/5     JAB031301             0050.0f10.230c   2/46        27s  SAC     2D

Channel group 2 neighbors
          Partner               Partner          Partner          Partner Group
Port      Name                  Device ID        Port       Age   Flags   Cap.
Fa5/6     JAB031301             0050.0f10.230c   2/47        10s  SAC     2F
Fa5/7     JAB031301             0050.0f10.230c   2/48        11s  SAC     2F

Channel group 1023 neighbors
          Partner               Partner          Partner          Partner Group
Port      Name                  Device ID        Port       Age   Flags   Cap.

Channel group 1024 neighbors
          Partner               Partner          Partner          Partner Group
Port      Name                  Device ID        Port       Age   Flags   Cap.
Router#
```

Related Commands

Command	Description
pagp learn-method	Learns the input interface of the incoming packets.
pagp port-priority	Selects a port in hot standby mode.

show platform

To display platform information, use the **show platform** command.

show platform {**buffers** | **eeprom** | **fault** | {**hardware capacity**} | {**hardware pfc mode**} | **internal-vlan** | **netint** | {**software ipv6-multicast connected**} | {**tech-support ipmulticast** *group-ip-addr src-ip-addr*} | **tlb**}

Syntax Description

buffers	Displays buffer-allocation information.
eeprom	Displays CPU EEPROM information.
fault	Displays the fault date.
hardware capacity	Displays the capacities and utilizations for hardware resources; see the **show platform hardware capacity** command.
hardware pfc mode	Displays the type of installed PFC.
internal-vlan	Displays the internal VLAN.
netint	Displays the platform network-interrupt information.
software ipv6-multicast connected	Displays all the IPv6 subnet ACL entries on the route processor; see the **show platform software ipv6-multicast** command.
tech-support ipmulticast	Displays IP multicast-related information for TAC.
group-ip-addr	Group IP address.
src-ip-addr	Source IP address.
tlb	Displays information about the TLB register.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display buffer-allocation information:

```
Router# show platform buffers
Reg. set    Min    Max
  TX              640
 ABQ        640  16384
   0          0     40
   1       6715   8192
   2          0      0
   3          0      0
   4          0      0
   5          0      0
   6          0      0
   7          0      0
```

```
Threshold = 8192

Vlan  Sel  Min  Max  Cnt  Rsvd
1019    1 6715 8192    0     0
Router#
```

This example shows how to display CPU EEPROM information:

```
Router# show platform eeprom
PISA CPU IDPROM:
IDPROM image:

IDPROM image block #0:
  hexadecimal contents of block:
  00: AB AB 02 9C 13 5B 02 00 00 02 60 03 03 E9 43 69    .....[....`...Ci
  10: 73 63 6F 20 53 79 73 74 65 6D 73 00 00 00 00 00    sco Systems.....
  20: 00 00 57 53 2D 58 36 4B 2D 53 55 50 33 2D 50 46    ..WS-X6K-SUP3-PF
  30: 43 33 00 00 00 00 53 41 44 30 36 34 34 30 31 57    C3....SAD064401W
  40: 4C 00 00 00 00 00 00 00 00 00 37 33 2D 37 34 30    L.........73-740
  50: 34 2D 30 37 00 00 00 00 00 00 30 35 00 00 00 00    4-07......05....
  60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
  70: 00 00 00 00 02 BD 00 00 00 00 00 09 00 05 00 01    ................
  80: 00 03 00 01 00 01 00 02 03 E9 00 00 00 00 00 00    ................
  90: 00 00 00 00 00 00 00 00 00 00 00 00                ............

  block-signature = 0xABAB, block-version = 2,
  block-length = 156, block-checksum = 4955

  *** common-block ***
  IDPROM capacity (bytes) = 512  IDPROM block-count = 2
  FRU type = (0x6003,1001)
  OEM String = 'Cisco Systems'
  Product Number = 'WS-X6K-SUP3-PFC3'
  Serial Number = 'SAD064401WL'
  Manufacturing Assembly Number = '73-7404-07'
  Manufacturing Assembly Revision = '05'
  Hardware Revision = 0.701
  Manufacturing bits = 0x0  Engineering bits = 0x0
  SNMP OID = 9.5.1.3.1.1.2.1001
  Power Consumption = 0 centiamperes    RMA failure code = 0-0-0-0
  CLEI =
  *** end of common block ***

IDPROM image block #1:
  hexadecimal contents of block:
  00: 60 03 02 67 0C 24 00 00 00 00 00 00 00 00 00 00    `..g.$..........
  10: 00 00 00 00 00 00 00 51 00 05 9A 3A 7E 9C 00 00    .......Q...:~...
  20: 02 02 00 01 00 01 00 00 00 00 00 00 00 00 00 00    ................
  30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
  40: 14 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
  50: 00 00 81 81 81 81 80 80 80 80 80 80 80 80 80 80    ................
  60: 80 80 06 72 00 46 37                               ...r.F7

  block-signature = 0x6003, block-version = 2,
  block-length = 103, block-checksum = 3108

  *** linecard specific block ***
  feature-bits =   00000000 00000000
  hardware-changes-bits =   00000000 00000000
  card index = 81
  mac base = 0005.9A3A.7E9C
  mac_len = 0
  num_processors = 2
  epld_num = 2
```

```
  epld_versions = 0001 0001 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
0000
  port numbers:
    pair #0: type=14, count=01
    pair #1: type=00, count=00
    pair #2: type=00, count=00
    pair #3: type=00, count=00
    pair #4: type=00, count=00
    pair #5: type=00, count=00
    pair #6: type=00, count=00
    pair #7: type=00, count=00
  sram_size = 0
  sensor_thresholds =
    sensor #0: critical = -127 oC (sensor present but ignored), warning = -127 oC (sensor
present but ignored)
    sensor #1: critical = -127 oC (sensor present but ignored), warning = -127 oC (sensor
present but ignored)
    sensor #2: critical = -128 oC (sensor not present), warning = -128 oC (sensor not
present)
    sensor #3: critical = -128 oC (sensor not present), warning = -128 oC (sensor not
present)
    sensor #4: critical = -128 oC (sensor not present), warning = -128 oC (sensor not
present)
    sensor #5: critical = -128 oC (sensor not present), warning = -128 oC (sensor not
present)
    sensor #6: critical = -128 oC (sensor not present), warning = -128 oC (sensor not
present)
    sensor #7: critical = -128 oC (sensor not present), warning = -128 oC (sensor not
present)
  max_connector_power = 1650
  cooling_requirement = 70
  ambient_temp = 55
  *** end of linecard specific block ***
Router#
```

This example shows how to display fault-date information:

```
Router# show platform fault
Fault History Buffer:
s72033_rp Software (s72033_rp-JSV-M), Experimental Version 12.2(20030331:071521)
[kkuttuva-CSCea55513-const2 120]
Compiled Mon 31-Mar-03 21:58 by kkuttuva
Signal = 10, Code = 0x1C, Uptime 00:01:14
$0 : 00000000, AT : 00000000, v0 : 00000000, v1 : 00000000
a0 : 00000000, a1 : 10050000, a2 : 00000000, a3 : 43F4B614
t0 : 50A19548, t1 : 10048000, t2 : 10040000, t3 : 10050000
t4 : 43F515A8, t5 : 43F515A4, t6 : 43F515A0, t7 : 43F5159C
s0 : 50A19548, s1 : 00000000, s2 : 50A19548, s3 : 10030100
s4 : 10030000, s5 : 41700000, s6 : 43F4B614, s7 : 41DB0000
t8 : 43F51614, t9 : 00000000, k0 : 5032D19C, k1 : 40231598
gp : 41F96960, sp : 50A19508, s8 : 422183A0, ra : 4027FB50
EPC : 4027FB84, SREG : 3401F103, Cause : 8000001C
Router#
```

This example shows how to display the PFC-operating mode:

```
Router# show platform hardware pfc mode
PFC operating mode : PFC3A
Router#
```

This example shows how to display platform net-interrupt information:

```
Router# show platform netint
Network IO Interrupt Throttling:
 throttle count=0, timer count=0
```

```
 active=0, configured=1
 netint usec=3999, netint mask usec=800
inband_throttle_mask_hi = 0x0
inband_throttle_mask_lo = 0x800000
Router#
```

This example shows how to display TLB-register information:

```
Router# show platform tlb

Mistral revision 5
TLB entries : 42
Virt Address range      Phy Address range      Attributes
0x10000000:0x1001FFFF   0x010000000:0x01001FFFF   CacheMode=2, RW, Valid
0x10020000:0x1003FFFF   0x010020000:0x01003FFFF   CacheMode=2, RW, Valid
0x10040000:0x1005FFFF   0x010040000:0x01005FFFF   CacheMode=2, RW, Valid
0x10060000:0x1007FFFF   0x010060000:0x01007FFFF   CacheMode=2, RW, Valid
0x10080000:0x10087FFF   0x010080000:0x010087FFF   CacheMode=2, RW, Valid
0x10088000:0x1008FFFF   0x010088000:0x01008FFFF   CacheMode=2, RW, Valid
0x18000000:0x1801FFFF   0x010000000:0x01001FFFF   CacheMode=0, RW, Valid
0x19000000:0x1901FFFF   0x010000000:0x01001FFFF   CacheMode=7, RW, Valid
0x1E000000:0x1E1FFFFF   0x01E000000:0x01E1FFFFF   CacheMode=2, RW, Valid
0x1E880000:0x1E899FFF   0x01E880000:0x01E899FFF   CacheMode=2, RW, Valid
0x1FC00000:0x1FC7FFFF   0x01FC00000:0x01FC7FFFF   CacheMode=2, RO, Valid
0x30000000:0x3001FFFF   0x070000000:0x07001FFFF   CacheMode=2, RW, Valid
0x40000000:0x407FFFFF   0x000000000:0x0007FFFFF   CacheMode=3, RO, Valid
.
.
.
0x58000000:0x59FFFFFF   0x088000000:0x089FFFFFF   CacheMode=3, RW, Valid
0x5A000000:0x5BFFFFFF   0x08A000000:0x08BFFFFFF   CacheMode=3, RW, Valid
0x5C000000:0x5DFFFFFF   0x08C000000:0x08DFFFFFF   CacheMode=3, RW, Valid
0x5E000000:0x5FFFFFFF   0x08E000000:0x08FFFFFFF   CacheMode=3, RW, Valid
Router#
```

show platform hardware capacity

To display the capacities and utilizations for the hardware resources, use the **show platform hardware capacity** command.

show platform hardware capacity [*resource-type*]

Syntax Description		
	resource-type	(Optional) Hardware resource type; see the "Usage Guidelines" section for the valid values.

Command Default This command has no default settings.

Command Modes EXEC (>)

Command History	Release	Modification
	12.2(18)ZY	Support for this command was introduced.

Usage Guidelines The valid values for *resource-type* are as follows:

- **acl**—Displays the capacities and utilizations for ACL/QoS TCAM resources.
- **cpu**—Displays the capacities and utilizations for CPU resources.
- **eobc**—Displays the capacities and utilizations for EOBC resources.
- **flash**—Displays the capacities and utilizations for flash/NVRAM resources.
- **forwarding**—Displays the capacities and utilizations for Layer 2 and Layer 3 forwarding resources.
- **interface**—Displays the capacities and utilizations for interface resources.
- **monitor**—Displays the capacities and utilizations for SPAN resources.
- **multicast**—Displays the capacities and utilizations for Layer 3 multicast resources.
- **netflow**—Displays the capacities and utilizations for NetFlow resources.
- **pfc**—Displays the capacities and utilizations for all the PFC resources including Layer 2 and Layer 3 forwarding, NetFlow, CPU rate limiters, and ACL/QoS TCAM resources.
- **power**—Displays the capacities and utilizations for power resources.
- **qos**—Displays the capacities and utilizations for QoS policer resources.
- **rate-limiter**—Displays the capacities and utilizations for CPU rate limiter resources.
- **system**—Displays the capacities and utilizations for system resources.
- **vlan**—Displays the capacities and utilizations for VLAN resources.

The **show platform hardware capacity cpu** command displays the following information:

- CPU utilization for the last 5 seconds (busy time and interrupt time), the percentage of the last 1-minute average busy time, and the percentage of the last 5-minute average busy time.
- Processor memory total available bytes, used bytes, and percentage used.
- I/O memory total available bytes, used bytes, and percentage used.

The **show platform hardware capacity eobc** command displays the following information:

- Transmit and receive rate
- Packets received and packets sent
- Dropped received packets and dropped transmitted packets

The **show platform hardware capacity forwarding** command displays the following information:

- The total available entries, used entries, and used percentage for the MAC tables.
- The total available entries, used entries, and used percentage for the FIB TCAM tables. The display is done per protocol base.
- The total available entries, used entries, and used percentage for the adjacency tables. The display is done for each region in which the adjacency table is divided.
- The created entries, failures, and resource usage percentage for the NetFlow TCAM and ICAM tables.
- The total available entries and mask, used entries and mask, reserved entries and mask, and entries and mask used percentage for the ACL/QoS TCAM tables. The output displays the available, used, reserved, and used percentage of the labels. The output displays the resource of other hardware resources that are related to the ACL/QoS TCAMs (such as available, used, reserved, and used percentage of the LOU, ANDOR, and ORAND).
- The available, used, reserved, and used percentage for the CPU rate limiters.

The **show platform hardware capacity interface** command displays the following information:

- Tx/Rx drops—Displays the sum of transmit and receive drop counters on each online module (aggregate for all ports) and provides the port number that has the highest drop count on the module.
- Tx/Rx per port buffer size—Summarizes the port-buffer size on a per-module basis for modules where there is a consistent buffer size across the module.

The **show platform hardware capacity monitor** command displays the following SPAN information:

- The maximum local SPAN sessions, maximum RSPAN sessions, maximum ERSPAN sessions, and maximum service module sessions.
- The local SPAN sessions used/available, RSPAN sessions used/available, ERSPAN sessions used/available, and service module sessions used/available.

The **show platform hardware capacity multicast** command displays the following information:

- Multicast Replication Mode: ingress and egress IPv4 and IPv6 modes.
- The MET table usage that indicates the total used and the percentage used for each module in the system.
- The bidirectional PIM DF table usage that indicates the total used and the percentage used.

The **show platform hardware capacity system** command displays the following information:

- PFC operating mode (PFC Version)
- Supervisor redundancy mode (RPR, SSO, none, and so forth)
- Module-specific switching information, including the following information:
  - Part number (WS-SUP720-BASE, WS-X6548-RJ-45, and so forth)
  - Series (supervisor engine)
  - CEF Mode (central CEF, dCEF)

The **show platform hardware capacity vlan** command displays the following VLAN information:

- Total VLANs
- VTP VLANs that are used
- External VLANs that are used
- Internal VLANs that are used
- Free VLANs

Examples

This example shows how to display CPU capacity and utilization information for the route processor, the switch processor, and the LAN module in the Catalyst 6500 series switch:

```
Router# show platform hardware capacity cpu
CPU Resources
  CPU utilization: Module             5 seconds       1 minute       5 minutes
                   1  RP               0% /  0%            1%              1%
                   1  SP               5% /  0%            5%              4%
                   7                  69% /  0%           69%             69%
                   8                  78% /  0%           74%             74%
  Processor memory: Module   Bytes:       Total           Used           %Used
                    1  RP             176730048       51774704             29%
                    1  SP             192825092       51978936             27%
                    7                 195111584       35769704             18%
                    8                 195111584       35798632             18%
  I/O memory: Module         Bytes:       Total           Used           %Used
              1  RP                     35651584       12226672             34%
              1  SP                     35651584        9747952             27%
              7                         35651584        9616816             27%
              8                         35651584        9616816             27%
Router#
```

This example shows how to display EOBC-related statistics for the route processor, the switch processor:

```
Router# show platform hardware capacity eobc
EOBC Resources
  Module                     Packets/sec     Total packets     Dropped packets
  1  RP      Rx:                      61            108982                   0
             Tx:                      37             77298                   0
  1  SP      Rx:                      34            101627                   0
             Tx:                      39            115417                   0
  7          Rx:                       5             10358                   0
             Tx:                       8             18543                   0
  8          Rx:                       5             12130                   0
             Tx:                      10             20317                   0
Router#
```

This example shows how to display information about the total capacity, the bytes used, and the percentage that is used for the flash/NVRAM resources present in the system:

```
Router# show platform hardware capacity flash
Flash/NVRAM Resources
  Usage: Module Device               Bytes:      Total          Used     %Used
         1  RP  bootflash:                     31981568      15688048       49%
         1  SP  disk0:                        128577536     105621504       82%
         1  SP  sup-bootflash:                 31981568      29700644       93%
         1  SP  const_nvram:                     129004           856        1%
         1  SP  nvram:                            391160         22065        6%
Router#
```

This example shows how to display the capacity and utilization of the EARLs present in the system:

```
Router# show platform hardware capacity forwarding
L2 Forwarding Resources
           MAC Table usage:   Module  Collisions  Total       Used       %Used
                              6               0  65536         11          1%

             VPN CAM usage:                        Total       Used       %Used
                                                     512          0          0%
L3 Forwarding Resources
             FIB TCAM usage:                      Total       Used       %Used
                  72 bits (IPv4, MPLS, EoM)     196608          36          1%
                144 bits (IP mcast, IPv6)        32768           7          1%

                     detail:      Protocol                    Used       %Used
                                  IPv4                          36          1%
                                  MPLS                           0          0%
                                  EoM                            0          0%

                                  IPv6                           4          1%
                                  IPv4 mcast                     3          1%
                                  IPv6 mcast                     0          0%

             Adjacency usage:                     Total       Used       %Used
                                                1048576        175          1%

     Forwarding engine load:
                     Module       pps   peak-pps                     peak-time
                     6              8       1972  02:02:17 UTC Thu Apr 21 2005

Netflow Resources
           TCAM utilization:      Module       Created      Failed       %Used
                                  6                 1           0          0%
           ICAM utilization:      Module       Created      Failed       %Used
                                  6                 0           0          0%

                 Flowmasks:   Mask#   Type        Features
                        IPv4:     0   reserved    none
                        IPv4:     1   Intf FulNAT_INGRESS NAT_EGRESS FM_GUARDIAN
                        IPv4:     2   unused      none
                        IPv4:     3   reserved    none

                        IPv6:     0   reserved    none
                        IPv6:     1   unused      none
                        IPv6:     2   unused      none
                        IPv6:     3   reserved    none

CPU Rate Limiters Resources
              Rate limiters:       Total         Used      Reserved       %Used
                     Layer 3           9            4             1         44%
                     Layer 2           4            2             2         50%
ACL/QoS TCAM Resources
  Key: ACLent - ACL TCAM entries, ACLmsk - ACL TCAM masks, AND - ANDOR,
       QoSent - QoS TCAM entries, QOSmsk - QoS TCAM masks, OR - ORAND,
```

```
      Lbl-in - ingress label, Lbl-eg - egress label, LOUsrc - LOU source,
      LOUdst - LOU destination, ADJ - ACL adjacency

  Module ACLent ACLmsk QoSent QoSmsk Lbl-in Lbl-eg LOUsrc LOUdst  AND  OR  ADJ
  6          1%     1%     1%     1%     1%     1%     0%     0%   0%  0%   1%

Router#
```

This example shows how to display the interface resources:

```
Router# show platform hardware capacity interface
Interface Resources
  Interface drops:
    Module    Total drops:    Tx            Rx      Highest drop port:  Tx  Rx
    9                          0             2                           0  48

  Interface buffer sizes:
    Module                             Bytes:     Tx buffer           Rx buffer
         1                                            12345               12345
         5                                            12345               12345
Router#
```

This example shows how to display SPAN information:

```
Router# show platform hardware capacity monitor
SPAN Resources
  Source sessions: 2 maximum, 0 used
    Type                                  Used
    Local                                    0
    RSPAN source                             0
    ERSPAN source                            0
    Service module                           0
  Destination sessions: 64 maximum, 0 used
    Type                                  Used
    RSPAN destination                        0
    ERSPAN destination (max  24)             0
Router#
```

This example shows how to display the capacity and utilization of resources for Layer 3 multicast functionality:

```
Router# show platform hardware capacity multicast
L3 Multicast Resources
  IPv4 replication mode: ingress
  IPv6 replication mode: ingress
  Bi-directional PIM Designated Forwarder Table usage: 4 total, 0 (0%) used
  Replication capability: Module                                IPv4        IPv6
                          5                                   egress      egress
                          9                                  ingress     ingress
  MET table Entries: Module                                Total    Used    %Used
                     5                                     65526       6       0%
Router#
```

This example shows how to display information about the system power capacities and utilizations:

```
Router# show platform hardware capacity power
Power Resources
  Power supply redundancy mode: administratively combined
                                                        operationally combined
  System power: 1922W, 0W (0%) inline, 1289W (67%) total allocated
  Powered devices: 0 total
Router#
```

This example shows how to display the capacity and utilization of QoS policer resources per EARL in the Catalyst 6500 series switch:

```
Router# show platform hardware capacity qos
 QoS Policer Resources
  Aggregate policers: Module                      Total         Used      %Used
                      1                            1024          102       10%
                      5                            1024            1        1%
  Microflow policer configurations: Module        Total         Used      %Used
                                    1                64           32       50%
                                    5                64            1        1%
Router#
```

This example shows how to display information about the key system resources:

```
Router# show platform hardware capacity systems
System Resources
  PFC operating mode: PFC3BXL
  Supervisor redundancy mode: administratively rpr-plus, operationally rpr-plus
  Switching Resources: Module   Part number              Series      CEF mode
                       5        WS-SUP720-BASE        supervisor           CEF
                       9        WS-X6548-RJ-45            CEF256           CEF
Router#
```

This example shows how to display VLAN information:

```
Router# show platform hardware capacity vlan
VLAN Resources
  VLANs: 4094 total, 10 VTP, 0 extended, 0 internal, 4084 free
Router#
```

show platform pisa np

To display Supervisor Engine 32 PISA-specific information, use the **show platform pisa np** command.

show platform pisa np *counter*

Syntax Description

counter	Counter information; see the "Usage Guidelines section for the list of valid values.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The valid values for the counter argument are as follows:

- **me** *num* **counters**—Displays the microengine information; valid values are from 0 to 15.
- **acl counters**—Displays the ACL counter information.
- **all counters**—Displays all Supervisor Engine 32 PISA-specific counters.
- **all pps counters**—Displays the packets per second for all Supervisor Engine 32 PISA-specific counters.
- **fpm counters**—Displays the flexible packet matching (FPM) counter information.
- **mqc counters**—Displays the modular QoS CLI information.
- **nbar counters**—Displays the network-based application recognition (NBAR) counter information.
- **rx counters**—Displays the receive engine counter information.
- **tx counters**—Displays the transmit engine counter information.

Examples

This example shows how to display the ACL counter information:

```
Router# show platform pisa np acl counters

ACL Statistics
--------------
ACL Pkts Received    : 0
ACL Pkts Forwarded   : 0
ACL Unknown Msg      : 0
Router#
```

This example shows how to display all Supervisor Engine 32 PISA-specific counters:

```
Router# show platform pisa np all counters

NP ENGINE STATISTICS:
--------------------
RX Statistics
-------------
Idle:  0
Frames Received:  162
Control Frames Received:  0
Forward RBUF:  0
Forward RBUF+DRAM:  162
Forward Buffered:  0
Post stalls:  0
Error:  0
Error(bad sop):  0
Error(missing sop):  0
Error(data buf alloc fail):  0
Error(control buf alloc fail):  0
Error(packet too big):  0
Error(packet length mismatch):  0

NBAR Statistics
---------------
NBAR Pkts Received  :  0
NBAR Pkts Classified:  0
PD   Pkts Received  :  0
NBAR Pkts Out       :  0
NBAR Debug 0        :  0
NBAR Debug 1        :  0
NBAR Debug 2        :  0
NBAR Debug 3        :  0

FPM Statistics
--------------
FPM Config Stamp     : 0
FPM Pkts Received    : 0
FPM Pkts Forwarded   : 0
FPM Pkts Dropped     : 0
FPM Unknown Msg      : 0
FPM Error            : 0
FPM Cache Misses     : 0

ACL Statistics
--------------
ACL Pkts Received    : 0
ACL Pkts Forwarded   : 0
ACL Unknown Msg      : 0

MQC Statistics
--------------
MQC Pkts Received    : 0
MQC Pkts Transmited  : 0
MQC Unknown          : 0
MQC Error            : 0
MQC Pkts marked DSCP : 0
MQC Policer Conformed: 0
MQC Policer Exceeded : 0
MQC Pkts Dropped     : 0

TX Statistics
-------------
Errors:  0
```

```
Fastpath RBUFs received:  162
Fastpath pkt received:  0
FastTX receive:  0
SlowTX receive:  162
Packets transmitted (loopback):  162
Packets transmit to hyperion:  162
Packets punt to CP:  0
Packets punt to Nitrox:  0
Packets forward to CM:  0
Packets forward to TCP:  0
Packets forward to Reassembly:  0
Packets forward to Fragmentation:  0
Packets forward to XScale:  162
Packets IPCP forward:  0
WARN: TX Packet too small:  0
DROP: Packet too big error:  0
DROP: Connection Route:  0
DROP: Connection Miss:  0
DROP: Bad connection route:  162
DROP: RX Interface miss:  0
DROP: Out of buffers:  0
DROP: Unknown Msg received:  0
DROP: Bandwidth rate policed:  0
Close request Sent:  0

Stubs Statistics for ME: 2
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 3
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 4
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 5
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
```

```
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 6
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 7
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 8
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 9
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 10
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 11
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
```

```
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 12
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 13
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 14
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0

Stubs Statistics for ME: 15
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0
```

This example shows how to display the packets per second for all Supervisor Engine 32 PISA-specific counters:

```
Router# show platform pisa np all pps

Throughput in packets-per-sec (pps) within 5 secs interval:
------------------------------------------------------------
Rx   Ingress PPS 0
Rx   Egress  PPS 0
NBAR Ingress PPS 0
NBAR Egress  PPS 0
FPM  Ingress PPS 0
FPM  Egress  PPS 0
```

```
ACL  Ingress PPS 0
ACL  Egress  PPS 0
MQC  Ingress PPS 0
MQC  Egress  PPS 0
Tx   Ingress PPS 0
Tx   Egress  PPS 0
Router#
```

This example shows how to display the FPM counter information:

```
Router# show platform pisa np fpm counters

FPM Statistics
--------------
FPM Config Stamp     : 0
FPM Pkts Received    : 0
FPM Pkts Forwarded   : 0
FPM Pkts Dropped     : 0
FPM Unknown Msg      : 0
FPM Error            : 0
FPM Cache Misses     : 0
Router#
```

This example shows how to display the ME counter information for a specific ME:

```
Router# show platform pisa np me 0 counters

Stubs Statistics for ME: 0
DRAM Pass Count:  0
DRAM Fail Count:  0
SRAM Pass Count:  0
SRAM Fail Count:  0
SCRATCH Pass Count:  0
SCRATCH Fail Count:  0
LMEM Pass Count:  0
LMEM Fail Count:  0
ME Run Count:  0
Router#
```

This example shows how to display the the modular QoS CLI information:

```
Router# show platform pisa np mqc counters

MQC Statistics
--------------
MQC Pkts Received    : 0
MQC Pkts Transmited  : 0
MQC Unknown          : 0
MQC Error            : 0
MQC Pkts marked DSCP : 0
MQC Policer Conformed: 0
MQC Policer Exceeded : 0
MQC Pkts Dropped     : 0
Router#
```

This example shows how to display the network-based application recognition counter information:

```
Router# show platform pisa np nbar counters

NBAR Statistics
---------------
NBAR Pkts Received  :  0
NBAR Pkts Classified:  0
PD   Pkts Received  :  0
NBAR Pkts Out       :  0
```

```
NBAR Debug 0        :  0
NBAR Debug 1        :  0
NBAR Debug 2        :  0
NBAR Debug 3        :  0
```

This example shows how to display the receive engine counter information:

```
Router# show platform pisa np rx counters

RX Statistics
-------------
Idle:  0
Frames Received:  159
Control Frames Received:  0
Forward RBUF:  0
Forward RBUF+DRAM:  159
Forward Buffered:  0
Post stalls:  0
Error:  0
Error(bad sop):  0
Error(missing sop):  0
Error(data buf alloc fail):  0
Error(control buf alloc fail):  0
Error(packet too big):  0
Error(packet length mismatch):  0
Router#
```

This example shows how to display the transmit engine counter information:

```
Router# show platform pisa np tx counters

TX Statistics
-------------
Errors:  0
Fastpath RBUFs received:  159
Fastpath pkt received:  0
FastTX receive:  0
SlowTX receive:  159
Packets transmitted (loopback):  159
Packets transmit to hyperion:  159
Packets punt to CP:  0
Packets punt to Nitrox:  0
Packets forward to CM:  0
Packets forward to TCP:  0
Packets forward to Reassembly:  0
Packets forward to Fragmentation:  0
Packets forward to XScale:  159
Packets IPCP forward:  0
WARN: TX Packet too small:  0
DROP: Packet too big error:  0
DROP: Connection Route:  0
DROP: Connection Miss:  0
DROP: Bad connection route:  159
DROP: RX Interface miss:  0
DROP: Out of buffers:  0
DROP: Unknown Msg received:  0
DROP: Bandwidth rate policed:  0
Close request Sent:  0
Router#
```

show platform software ipv6-multicast

To display information about the platform software IPv6 multicast, use the show platform software ipv6-multicast command.

show platform software ipv6-multicast {**acl-exception** | **acl-table** | **capability** | **connected** | **shared-adjacencies** | **statistics** | **summary**}

Syntax Description

acl-exception	Displays the IPv6-multicast entries that were switched in the software due to ACL exceptions.
acl-table	Displays the IPv6-multicast ACL request table entries.
capability	Displays the hardware capabilities.
connected	Displays the IPv6-multicast subnet/connected hardware entries.
shared-adjacencies	Displays the IPv6-multicast shared adjacencies.
statistics	Displays the internal software-based statistics.
summary	Displays the IPv6-multicast hardware-shortcut count.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display the IPv6-hardware capabilities:

```
Router# show platform software ipv6-multicast capability
 Hardware switching for ipv6 is Enabled
 (S,G) forwarding for ipv6 supported using Netflow
 (*,G) bridging for ipv6 is supported using Fib
 Directly-connected entries for IPv6 is supported using ACL-TCAM.

Current System HW Replication Mode : Egress
Audo-detection of Replication Mode : ON

Slot Replication-Capability Replication-Mode
   2 Egress                 Egress
   5 Egress                 Egress
Router#
```

This example shows how to display the IPv6-multicast subnet/connected-hardware entries:

```
Router# show platform software ipv6-multicast connected

IPv6 Multicast Subnet entries
Flags : H - Installed in ACL-TCAM
        X - Not installed in ACL-TCAM due to
            label-full exception
```

```
Interface: Vlan40 [ H ]
         S:40::1 G:FF00::
         S:0:5000::2 G:FF00::
         S:5000::2 G:FF00::
Interface: Vlan30 [ H ]
         S:30::1 G:FF00::
Interface: Vlan20 [ H ]
         S:20::1 G:FF00::
Interface: Vlan10 [ H ]
         S:10::1 G:FF00::
Router#
```

This example shows how to display the IPv6-multicast shared adjacencies:

```
Router# show platform software ipv6-multicast shared-adjacencies

---- SLOT [7] ----

Shared IPv6 Mcast Adjacencies Index  Packets       Bytes
----------------------------- ------ ------------- ------------------
Subnet bridge adjacency       0x7F802  0             0
Control bridge adjacency      0x7      0             0
StarG_M bridge adjacency      0x8      0             0
S_G bridge adjacency          0x9      0             0
Default drop adjacency        0xA      0             0
StarG (spt == INF) adjacency  0xB      0             0
StarG (spt != INF) adjacency  0xC      0             0
Router#
```

This example shows how to display the IPv6-multicast statistics information:

```
Router# show platform software ipv6-multicast statistics

IPv6 Multicast HW-switching Status                 : Enabled
IPv6 Multicast (*,G) HW-switching Status           : Disabled
IPv6 Multicast Subnet-entries Status               : Enabled
Default MFIB IPv6-table                            : 0x5108F770
(S,G,C) flowmask index                             : 3
(*,G,C) flowmask index                             : 65535

General Counters
-------------------------------------------------+------+
Mfib-hw-entries count                             0
Mfib-add count                                    4
Mfib-modify count                                 2
Mfib-delete count                                 2
Mfib-NP-entries count                             0
Mfib-D-entries count                              0
Mfib-IC-entries count                             0
Error Counters
-------------------------------------------------+------+
ACL flowmask err count                            0
ACL TCAM exptn count                              0
ACL renable count                                 0
Idb Null error                                    0
Router#
```

This example shows how to display the IPv6-multicast hardware shortcut count:

```
Router# show platform software ipv6-multicast summary
IPv6 Multicast Netflow SC summary on Slot[7]:
Shortcut Type               Shortcut count
---------------------------+--------------
(S, G)                      0
```

```
IPv6 Multicast FIB SC summary on Slot[7]:
Shortcut Type               Shortcut count
---------------------------+--------------
(*, G/128)                  0
(*, G/m)                    0

Router#
```

Related Commands

Command	Description
ipv6 mfib hardware-switching	Configures hardware switching for IPv6 multicast packets on a global basis.

show platform software pisa fm interface

To display the PISA feature manager data for an interface, use the **show platform software pisa fm interface** command.

show platform software pisa fm interface {**all** | {*interface-type interface-number*} | {**port-channel** *number*} | {**vlan** *vlan-id*}}

Syntax Description

all	Displays PISA feature manager data for all interfaces.
interface-type	Interface type; possible valid values are **fastethernet**, **gigabitethernet**, and **tengigabitethernet**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
port-channel *number*	Specifies the channel interface; valid values are a maximum of 64 values ranging from 1 to 282, with values from 257 to 282 supported on the CSM and the FWSM only.
vlan *vlan-id*	Specifies the VLAN; valid values are from 1 to 4094.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZYA1	Support for this command was introduced.

Usage Guidelines

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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.

Examples

This example shows how to display the PISA feature manager data for VLAN 10, which is not configured with the **reverse-only** keywords:

```
Router> show platform software pisa fm interface vlan 10

PISA FM Interface type/properties
=========================================
Interface Type   = L3
Trunk            = False
Ether Channel    = False

PISA FM FDB DUMP
=========================================================
```

```
Interface Vlan10

ACL name 112
ACL direction input
ACL reverse only False

Direction-less features:
------------------------
Feature-QOS      :  NONE
Feature-ACL      :  NONE
Feature-PD       :  SF-INS
Feature-URLF     :  NONE
Feature-TAGGING  :  NONE

Ingress features:
-----------------
Feature-QOS      :  NONE
Feature-ACL      :  NONE
Feature-PD       :  NONE
Feature-URLF     :  NONE
Feature-TAGGING  :  NONE

Egress features:
----------------
Feature-QOS      :  NONE
Feature-ACL      :  NONE
Feature-PD       :  NONE
Feature-URLF     :  NONE
Feature-TAGGING  :  NONE

Action flags:  INGRESS INGRESS-ACL-RDT-SEL EGRESS-ACL-CAP-SEL
============================================================
```

This example shows how to display the PISA feature manager data for Gigabit Ethernet port 4/25 when it is not configured with the **reverse-only** keywords:

```
Router> show platform software pisa fm interface gigabitethernet 4/25
pisa_fm_ec_cap_enabled 1
IDB = 0x271885C0
PISA_SB = 0x27660AC0
PISA FDB = 0x27181500

PISA FM Interface type/properties
=========================================
Interface Type   = L2
Trunk            = True
Ether Channel    = False

PISA FM FDB DUMP
============================================================
Interface GigabitEthernet4/25

ACL name 101
ACL direction input
ACL reverse only False

Direction-less features:
------------------------
Feature-QOS      :  NONE
Feature-ACL      :  NONE
Feature-PD       :  SF-INS
Feature-URLF     :  NONE
Feature-TAGGING  :  NONE
```

```
Ingress features:
-----------------
Feature-QOS       :  NONE
Feature-ACL       :  NONE
Feature-PD        :  NONE
Feature-URLF      :  NONE
Feature-TAGGING   :  NONE

Egress features:
---------------
Feature-QOS       :  NONE
Feature-ACL       :  NONE
Feature-PD        :  NONE
Feature-URLF      :  NONE
Feature-TAGGING   :  NONE

Action flags:  INGRESS-ACL-CAP-SEL EGRESS-COPY
============================================================
```

This example shows how to display the PISA feature manager data for Gigabit Ethernet port 4/25 when it is configured with the **reverse-only** keywords:

```
Router> show platform software pisa fm interface gigabitethernet 4/25
pisa_fm_ec_cap_enabled 0
IDB = 0x271885C0
PISA_SB = 0x27660AC0
PISA FDB = 0x27181500

PISA FM Interface type/properties
=========================================
Interface Type    = L2
Trunk             = True
Ether Channel     = False

PISA FM FDB DUMP
============================================================
Interface GigabitEthernet4/25

ACL name 101
ACL direction input
ACL reverse only True

Direction-less features:
-----------------------
Feature-QOS       :  NONE
Feature-ACL       :  NONE
Feature-PD        :  SF-INS
Feature-URLF      :  NONE
Feature-TAGGING   :  NONE

Ingress features:
-----------------
Feature-QOS       :  NONE
Feature-ACL       :  NONE
Feature-PD        :  NONE
Feature-URLF      :  NONE
Feature-TAGGING   :  NONE

Egress features:
---------------
Feature-QOS       :  NONE
Feature-ACL       :  NONE
Feature-PD        :  NONE
Feature-URLF      :  NONE
```

```
Feature-TAGGING  :  NONE

Action flags:  INGRESS EGRESS-COPY
============================================================
```

Note The **show platform software pisa fm interface all** command sequentially displays all of the data for all of the interfaces.

Related Commands

Command	Description
platform ip features pisa	Configures the Intelligent Traffic Redirect (ITR) feature.

show platform software pisa split-vlan

To display the split VLANs on PISA, use the **show platform software pisa split-vlan** command in privileged EXEC mode.

show platform software pisa split-vlan {**interface** *interface-type* | *range* | **summary**}

Syntax Description

interface *interface-type*	Displays only entries with the specified interface.Valid values are Fast Ethernet, Gigabit Ethernet, port channel, and VLAN.
range	Displays a range of interfaces, port channels, or VLANs. Valid interface range is 1 to 6 and VLAN range is 1 to 4094.
summary	Displays the number of existing PISA VLANs.

Defaults

This command has no default settings.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(18)ZYA1	Support for this command was introduced.

Examples

This example shows how to display PISA split VLAN information on the Fast Ethernet port 1/48:

```
Router# show platform software pisa split-vlan interface fas 1/48

Codes: P - NBAR PD, N - NBAR, F - FPM, U - URLF, 0x380 - RP, 0x340 - IXP
Interface                   Vlan      PisaVlan  InFeat    OutFeat
DestIndex State
-------------------------------------------------------------------------------
FastEthernet1/48            1019      1023      F         F
0x340     down
Router#
```

This example shows how to display a summary of the PISA split VLANs:

```
Router# show platform software pisa split-vlan summary
PISA Vlan Usage
--------- -----
1019      FastEthernet1/46.1
1023      FastEthernet1/48
Router#
```

Related Commands

Command	Description
show platform	Displays platform information.

show policy-map

To display information about the policy map, use the **show policy-map** command.

show policy-map [*policy-map-name*]

Syntax Description

policy-map-name	(Optional) Name of the policy map.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Examples

This example shows how to display information about all policy maps:

```
Router# show policy-map
   Policy Map simple
 Policy Map max-pol-ipp5
  class  ipp5

  class ipp5
    police flow 10000000 10000 conform-action set-prec-transmit 6 exceed-action
policed-dscp-transmit    trust precedence   police 2000000000 2000000 2000000 co
nform-action set-prec-transmit 6exceed-action policed-dscp-transmit
Router#
```

This example shows how to display information for a specific policy map:

```
Router# show policy-map max-pol-ipp5
 Policy Map max-pol-ipp5
  class  ipp5

  class ipp5
    police flow 10000000 10000 conform-action set-prec-transmit 6 exceed-action
policed-dscp-transmit    trust precedence   police 2000000000 2000000 2000000 co
nform-action set-prec-transmit 6exceed-action policed-dscp-transmit

Router#
```

Related Commands

Command	Description
class-map	Accesses the QoS class-map configuration mode to configure QoS class maps.
policy-map	Accesses QoS policy-map configuration mode to configure the QoS policy map.

Command	Description
show class-map	Displays class-map information.
show policy-map interface	Displays the statistics and the configurations of the input and output policies that are attached to an interface.

show policy-map control-plane

To display the configuration either of a class or of all classes for the policy map of a control plane, use the **show policy-map control-plane** command.

show policy-map control-plane [**all**] [**input** [**class** *class-name*] | **output** | [**class** *class-name*]]

Syntax Description

all	(Optional) Displays information for all control plane interfaces.
input	(Optional) Displays statistics for the attached input policy.
class *class-name*	(Optional) Displays the name of the class.
output	(Optional) Displays statistics for the attached output policy.

Command Default

This command has no default settings.

Command Modes

Privileged EXEC (#)

Command Historyv

Usage Guidelines

The **show policy-map control-plane** command displays information for aggregate control-plane services that control the number or rate of packets that are going to the process level.

Examples

This example shows that the policy map TEST is associated with the control plane. This policy map polices traffic that matches the class-map TEST, while allowing all other traffic (that matches the class-map class-default) to go through as is. Table 2-84 describes the fields shown in the display.

```
Router# show policy-map control-plane

Control Plane

Service-policy input:TEST

Class-map:TEST (match-all)
      20 packets, 11280 bytes
      5 minute offered rate 0 bps, drop rate 0 bps
      Match:access-group 101
      police:
        8000 bps, 1500 limit, 1500 extended limit
        conformed 15 packets, 6210 bytes; action:transmit
        exceeded 5 packets, 5070 bytes; action:drop
        violated 0 packets, 0 bytes; action:drop
        conformed 0 bps, exceed 0 bps, violate 0 bps

Class-map:class-default (match-any)
      105325 packets, 11415151 bytes
      5 minute offered rate 0 bps, drop rate 0 bps
      Match:any
```

Table 2-84 show policy-map control-plane Field Descriptions

Field	Description
Fields Associated with Classes or Service Policies	
Service-policy input	Name of the input service policy that is applied to the control plane. (If configured, this field will also show the output service policy.)
Class-map	Class of traffic being displayed. Traffic is displayed for each configured class. The choice for implementing class matches (for example, match-all or match-any) can also appear next to the traffic class.
offered rate	Rate, in kbps, at which packets are coming into the class.
drop rate	Rate, in kbps, at which packets are dropped from the class. The drop rate is calculated by subtracting the number of sucessfully transmitted packets from the offered rate.
Match	Match criteria for the specified class of traffic. **Note** For more information about the variety of match criteria options available, refer to the chapter "Configuring the Modular Quality of Service Command-Line Interface" in the *Cisco IOS Quality of Service Solutions Configuration Guide*.
Fields Associated with Traffic Policing	
police	**police** command has been configured to enable traffic policing.
conformed	Action to be taken on packets conforming to a specified rate; displays the number of packets and bytes on which the action was taken.
exceeded	Action to be taken on packets exceeding a specified rate; displays the number of packets and bytes on which the action was taken.
violated	Action to be taken on packets violating a specified rate; displays the number of packets and bytes on which the action was taken.

Related Commands

Command	Description
control-plane	Enters control-plane configuration mode.
service-policy (control-plane)	Attaches a policy map to a control plane for aggregate control plane services.

show policy-map interface

To display the statistics and the configurations of the input and output policies that are attached to an interface, use the **show policy-map interface** command.

show policy-map interface [{*interface interface-number*} | {**null** *interface-number*} | {**vlan** *vlan-id*}] [**input** | **output**]

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **pos**, **atm**, and **ge-wan**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
null *interface-number*	(Optional) Specifies the null interface; the valid value is **0**.
vlan *vlan-id*	(Optional) Specifies the VLAN ID; valid values are from 1 to 4094.
input	(Optional) Specifies the input policies only.
output	(Optional) Specifies the output policies only.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **output** keyword is not supported.

Catalyst 6500 series switches that are configured with a Supervisor Engine 32 PISA display byte counters.

The output does not display policed-counter information; 0 is displayed in its place (for example, 0 packets, 0 bytes). To view dropped and forwarded policed-counter information, enter the **show mls qos ip** command.

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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.

Examples

This example shows how to display the statistics and the configurations of all the input and output policies that are attached to an interface:

```
Router# show policy-map interface
 FastEthernet5/36
  service-policy input: max-pol-ipp5
    class-map: ipp5 (match-all)
      0 packets, 0 bytes
      5 minute rate 0 bps
      match: ip precedence 5
  class ipp5
    police 2000000000 2000000 conform-action set-prec-transmit 6 exceed-action p
policed-dscp-transmit
Router#
```

This example shows how to display the input-policy statistics and the configurations for a specific interface:

```
Router# show policy-map interface fastethernet 5/36 input
 FastEthernet5/36
  service-policy input: max-pol-ipp5
    class-map: ipp5 (match-all)
      0 packets, 0 bytes
      5 minute rate 0 bps
      match: ip precedence 5
  class ipp5
    police 2000000000 2000000 conform-action set-prec-transmit 6 exceed-action p
policed-dscp-transmit
Router#
```

Related Commands

Command	Description
class-map	Accesses the QoS class map configuration mode to configure QoS class maps.
policy-map	Accesses QoS policy-map configuration mode to configure the QoS policy map.
show class-map	Displays class-map information.
show mls qos	Displays MLS QoS information.

show port-security

To display information about the port-security setting, use the **show port-security** command.

show port-security [**interface** *interface interface-number*]

show port-security [**interface** *interface interface-number*] {**address** | **vlan**}

Syntax Description

interface *interface*	(Optional) Specifies the interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, and **tengigabitethernet**.
address	Displays all the secure MAC addresses that are configured on all the switch interfaces or on a specified interface with aging information for each address.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

The **vlan** keyword is supported on trunk ports only and displays per-VLAN maximums set on a trunk port.

The *interface-number* argument designates the module and port number. Valid values for *interface-number* 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.

Examples

This example shows the output from the **show port-security** command when you do not enter any options:

```
Router# show port-security
Secure Port      MaxSecureAddr  CurrentAddr  SecurityViolation  Security
Action
                     (Count)        (Count)      (Count)
------------------------------------------------------------------------------

     Fa5/1           11             11             0            Shutdown
     Fa5/5           15             5              0            Restrict
     Fa5/11          5              4              0            Protect
------------------------------------------------------------------------------

Total Addresses in System: 21
Max Addresses limit in System: 128
Router#
```

This example shows how to display port-security information for a specified interface:

```
Router# show port-security interface fastethernet 5/1
Port Security: Enabled
Port status: SecureUp
Violation mode: Shutdown
Maximum MAC Addresses: 11
Total MAC Addresses: 11
Configured MAC Addresses: 3
Aging time: 20 mins
Aging type: Inactivity
SecureStatic address aging: Enabled
Security Violation count: 0
Router#
```

This example show how to display all the secure MAC addresses that are configured on all the switch interfaces or on a specified interface with aging information for each address:

```
Router# show port-security address
Default maximum: 10
VLAN Maximum Current
1    5       3
2    4       4
3    6       4
Router#
```

Related Commands

Command	Description
clear port-security	Deletes configured secure MAC addresses and sticky MAC addresses from the MAC-address table.

show power

To display information about the power status, use the **show power** command.

show power [{**available** | **redundancy-mode** | {**status** {**all** | {**module** *num*}}} | {**power-supply** *number*} | **total** | **used** | **inline** [{*interface number*} | {**module** *num*}}]]

Syntax Description

available	(Optional) Displays the available system power (margin).
redundancy-mode	(Optional) Displays the power-supply redundancy mode.
status	(Optional) Displays the power status.
all	Displays all the FRU types.
module *num*	Displays the power status for a specific module.
power-supply *number*	Displays the power status for a specific power supply; valid values are **1** and **2**.
total	(Optional) Displays the total power that is available from the power supplies.
used	(Optional) Displays the total power that is budgeted for powered-on items.
inline	(Optional) Displays the inline power status.
interface number	(Optional) Specifies the interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **null**, **port-channel**, and **vlan**. See the "Usage Guidelines" section for additional information.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	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 *interface-number* argument designates the module and port number. Valid values for *interface-number* 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.

Valid values for *vlan-id* are from 1 to 4094.

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

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

Examples

This example shows how to display the available system power:

```
Router> show power available
system power available = 20.470A
Router>
```

This example shows how to display power-supply redundancy mode:

```
Router# show power redundancy-mode
system power redundancy mode = redundant
Router#
```

This command shows how to display the system-power status:

```
Router> show power
system power redundancy mode = combined
system power total =     3984.12 Watts (94.86 Amps @ 42V)
system power used =      1104.18 Watts (26.29 Amps @ 42V)
system power available = 2879.94 Watts (68.57 Amps @ 42V)
                         Power-Capacity PS-Fan Output Oper
PS   Type                Watts   A @42V Status Status State
---- ------------------- ------- ------ ------ ------ -----
1    WS-CAC-3000W        2830.80 67.40  OK     OK     on
2    WS-CAC-1300W        1153.32 27.46  OK     OK     on
Note: PS2 capacity is limited to 2940.00 Watts (70.00 Amps @ 42V)
      when PS1 is not present
                         Pwr-Allocated  Oper
Fan  Type                Watts   A @42V State
---- ------------------- ------- ------ -----
1    FAN-MOD-9            241.50  5.75  OK
2                         241.50  5.75  failed
                         Pwr-Requested  Pwr-Allocated  Admin Oper
Slot Card-Type           Watts   A @42V Watts   A @42V State State
---- ------------------- ------- ------ ------- ------ ----- -----
1    WS-X6K-SUP2-2GE      145.32  3.46   145.32  3.46  on    on
2                           -     -      145.32  3.46  -     -
3    WS-X6516-GBIC        118.02  2.81   118.02  2.81  on    on
5    WS-C6500-SFM         117.18  2.79   117.18  2.79  on    on
7    WS-X6516A-GBIC       214.20  5.10     -     -     on    off (insuff cooling capacity)
8    WS-X6516-GE-TX       178.50  4.25   178.50  4.25  on    on
9    WS-X6816-GBIC        733.98 17.48     -     -     on    off (connector rating
exceeded)
Router>
```

This example shows how to display the power status for all FRU types:

```
Router# show power status all
FRU-type       #    current   admin state oper
power-supply   1    27.460A   on          on
module         1    4.300A    on          on
module         2    4.300A    -           -   (reserved)
module         5    2.690A    on          on
Router#
```

This example shows how to display the power status for a specific module:

```
Router# show power status module 1
FRU-type       #    current   admin state oper
module         1    -4.300A   on          on
Router#
```

This example shows how to display the power status for a specific power supply:

```
Router# show power status power-supply 1
FRU-type       #    current   admin state oper
power-supply   1    27.460A   on          on
Router#
```

This example displays information about the high-capacity power supplies:

```
Router# show power status power-supply 2
                        Power-Capacity PS-Fan Output Oper
PS   Type               Watts   A @42V Status Status State
---- ------------------ ------- ------ ------ ------ -----
1    WS-CAC-6000W       2672.04  63.62 OK     OK     on
2    WS-CAC-9000W-E     2773.68  66.04 OK     OK     on
Router#
```

This example shows how to display the total power that is available from the power supplies:

```
Router# show power total
system power total = 27.460A
Router#
```

This example shows how to display the total power that is budgeted for powered-on items:

```
Router# show power used
system power used = -6.990A
Router#
```

This command shows how to display the inline power status on the interfaces:

```
Router# show power inline
Interface            Admin    Oper    Power ( mWatt )  Device
-------------------- ----- ---------- --------------- -----------
FastEthernet9/1      auto  on         6300            Cisco 6500 IP Phone
FastEthernet9/2      auto  on         6300            Cisco 6500 IP Phone
.
.
. <Output truncated>
```

This command shows how to display the inline power status for a specific module:

```
Router# show power inline mod 7

Interface  Admin    Oper    Power       Device        Class
                            (Watts)
---------- ----- ---------- ------- --------------  -----------
Gi7/1      auto   on            6.3  Cisco IP Phone 7960  n/a
Gi7/2      static power-deny      0  Ieee PD              3
.
.
. <Output truncated>
```

Related Commands

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

show qdm status

To display information about the status for the currently active QDM clients who are connected to the Catalyst 6500 series switch, use the **show qdm status** command.

show qdm status

Syntax Description

This command has no keywords or arguments.

Command Default

This command has no default settings.

Command Modes

EXEC (>)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

You can use this command to display the unique client ID that is assigned to each QDM client that is connected to the Catalyst 6500 series switch. The output display includes the following information:

- Number of QDM clients that are currently connected to the Catalyst 6500 series switch
- Version of QDB client
- Name and IP address of client
- Client identification
- Connection duration

Examples

This example shows how to display information on the status of the currently active QDM web-based clients:

```
Router# show qdm status
Number of QDM Clients : 2
QDM Client v2.1(0.7)-_picard_2 @ 10.34.8.92 (id:5)
     connected since 07:50:00 UTC Sat Aug 11 1917

QDM Client v2.1(0.7)-_janeway_2 @ 171.69.49.14 (id:4)
     connected since 07:49:39 UTC Sat Aug 11 1917
Router#
```

Related Commands

Command	Description
disconnect qdm	Disconnects a QDM session.

show qm-sp port-data

To display information about the QoS-manager switch processor, use the **show qm-sp port-data** command.

show qm-sp port-data {*mod port*}

Syntax Description

mod port	Module and port number; see the "Usage Guidelines" section for valid values.

Command Default

This command has no default settings.

Command Modes

Switch command—Privileged EXEC (Switch-sp#)

Command History

Release	Modification
12.2(18)ZY	Support for this command was introduced.

Usage Guidelines

This command is supported by the supervisor engine only. This command can be entered only from the Catalyst 6500 series switch console (see the **remote login** command).

The *mod port* arguments designate the module and port number. Valid values 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 module number are from 1 to 13 and valid values for the port number are from 1 to 48.

Enter the **show qm-sp port-data** command to verify the values that are programmed in the hardware.

Examples

This example shows how to display information about the QoS manager:

```
Switch-sp# show qm-sp port-data 1 2
------------------------------------------------------------------------------
* Type: Tx[1p2q2t] Rx[1p1q4t]  [0] Pinnacle
* Per-Port: [Untrusted] Default COS[0] force[0] [VLAN based]
------------------------------------------------------------------------------
* COSMAP(C[Q/T]) TX: 0[1/1] 1[1/1] 2[1/2] 3[1/2] 4[2/1] 5[3/1] 6[2/1] 7[2/2]
                 RX: 0[1/1] 1[1/1] 2[1/2] 3[1/2] 4[1/3] 5[2/1] 6[1/3] 7[1/4]
------------------------------------------------------------------------------
* WRR bandwidth:        [7168 18432]
* TX queue limit(size): [311296 65536 65536]
* WRED queue[1]:        failed (0x82)
       queue[2]:        failed (0x82)
```

```
------------------------------------------------------------------------------
* TX drop thr queue[1]: type[2 QOS_SCP_2_THR] dropThr[311104 311104]
              queue[2]: type[2 QOS_SCP_2_THR] dropThr[61504 61504]
* RX drop threshold:    type[4 QOS_SCP_4_THR] dropThr[62259 62259 62259 62259]
* RXOvr drop threshold: type[0 UNSUPPORTED] dropThr[16843009 131589 61504 61504]
* TXOvr drop threshold: type[0 UNSUPPORTED] dropThr[67174656 260 16843009 131589]
Switch-sp#
```

Related Commands

Command	Description
rcv-queue queue-limit	Sets the size ratio between the strict-priority and standard receive queues.
remote login	Accesses the Catalyst 6500 series switch console or a specific module.
wrr-queue	Allocates the bandwidth between the standard transmit queues.
wrr-queue queue-limit	Sets the transmit-queue size ratio on an interface.
wrr-queue threshold	Configures the drop-threshold percentages for the standard receive and transmit queues on 1q4t and 2q2t interfaces.