show cable-diagnostics tdr

To display the test results for the TDR cable diagnostics, use the **show cable-diagnostics tdr** command.

show cable-diagnostics tdr {**interface** {*interface interface-number*}}

Syntax Description

interface *interface*	Specifies the interface type; valid values are **fastethernet** and **gigabitethernet**.
interface-number	Module and port number.

Command Default   This command has no default settings.

Command Modes   Privileged EXEC (#)

Command History

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

Usage Guidelines   The **show cable-diagnostics tdr** command is supported on specific modules. See the *Release Notes for Cisco IOS Release 12.2 ZY Supervisor Engine 32 PISA* for the list of the modules that support TDR.

In the event of an open or shorted cable, the accuracy of length of where the cable is open or shorted is plus or minus 2 meters.

The pair length can be displayed in meters (m), centimeters (cm), or kilometers (km).

If the TDR test has not been run on the port, the following message is displayed:

```
TDR test was never run on Gi2/12
```

Examples   This example shows how to display the information about the TDR test:

```
Router> show cable-diagnostics tdr interface gigabitethernet8/1
TDR test last run on: February 25 11:18:31
Interface Speed Pair Cable length        Distance to fault    Channel Pair status
--------- ----- ---- ------------------- ------------------- ------- ------------
Gi8/1     1000  1-2  1    +/- 6  m       N/A                 Pair B  Terminated
                3-4  1    +/- 6  m       N/A                 Pair A  Terminated
                5-6  1    +/- 6  m       N/A                 Pair C  Terminated
                7-8  1    +/- 6  m       N/A                 Pair D  Terminated
Router>
```

Table 2-32 describes the fields in the **show cable-diagnostics tdr** command output.

Table 2-32   show cable-diagnostics tdr Command Output Fields

Field	Description
Interface	Interface tested.
Speed	Current line speed.
Pair	Local pair name.
Cable Length	Cable length and accuracy. The accuracy unit is displayed in meters (m), centimeters (cm), or kilometers (km).
Channel	Pair designation.
Pair status	Pair status displayed is one of the following: • Terminated—The link is up. • Shorted—A short is detected on the cable. • Open—An opening is detected on the cable. • Not Completed—The test on the port failed. • Not Supported—The test on the port is not supported. • Broken—The pair is bad—either open or shorted. • ImpedanceMis—The impedance is mismatched. • InProgress—The diagnostic test is in progress.

Related Commands	Command	Description
	clear cable-diagnostics tdr	Clears a specific interface or clears all interfaces that support TDR.
	test cable-diagnostics	Tests the condition of 10-Gigabit Ethernet links or copper cables on 48-port 10/100/1000 BASE-T modules.

show catalyst6000

To display the information about the Catalyst 6500 series switch, use the **show catalyst6000** command.

show catalyst6000 {**all** | **chassis-mac-address** | **switching-clock** | **traffic-meter**}

Syntax Description

all	Displays the MAC-address ranges and the current and peak traffic-meter reading.
chassis-mac-address	Displays the MAC-address range.
switching-clock	Displays the failure recovery mode of the switching clock.
traffic-meter	Displays the percentage of the backplane (shared bus) utilization.

Command Default **all**

Command Modes EXEC (>)

Command History

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

Usage Guidelines If you enter the **switching-clock** keywords, the Catalyst 6500 series switch displays whether switching of the redundant clock sources on the backplane is allowed if the active clock source fails.

The Catalyst 6500 series switch has either 64 or 1024 MAC addresses that are available to support the software features. You can enter the **show catalyst6000 chassis-mac-address** command to display the MAC-address range on your chassis.

Examples This example shows how to display the MAC-address ranges and the current and peak traffic-meter readings:

```
Router> show catalyst6000 all
  chassis MAC addresses: 64 addresses from 0001.6441.60c0 to 0001.6441.60ff
  traffic meter =   0%  Never cleared
         peak =   0%  reached at 08:14:38 UTC Wed Mar 19 2003
  switching-clock: clock switchover and system reset is allowed
Router>
```

This example shows how to display the MAC-address ranges:

```
Router# show catalyst6000 chassis-mac-address
  chassis MAC addresses: 1024 addresses from 00d0.004c.1800 to 00d0.004c.1c00
Router#
```

This example shows how to display the current and peak traffic-meter readings:

```
Router> show catalyst6000 traffic-meter
  traffic meter = 0%   peak = 0%  at  09:57:58 UTC Mon Nov 6 2000
Router#
```

This example shows how to display the failure recovery mode of the switching clock:

```
Router> show catalyst6000 switching-clock
  switching-clock: clock switchover and system reset is allowed
Router>
```

show cdp neighbors

To display detailed information about the neighboring devices that are discovered through CDP, use the **show cdp neighbors** command.

> **show cdp neighbors** [*type number*] [**detail**]

Syntax Description		
type	(Optional) Interface type that is connected to the neighbors about which you want information; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **port-channel,** and **vlan**.
number	(Optional) Interface number that is connected to the neighbors about which you want information.
detail	(Optional) Displays detailed information about a neighbor (or neighbors) including the network address, the enabled protocols, the hold time, and the software version.

Command Default This command has no default settings.

Command Modes Privileged EXEC (#)

Command History

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

Usage Guidelines The **port-channel** values are from 0 to 282; values from 257 to 282 are supported on the CSM and the FWSM only.

Examples This example shows how to display the information about the CDP neighbors:

```
Router# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone
Device ID       Local Intrfce   Holdtme     Capability  Platform  Port ID
lab-7206        Eth 0           157             R       7206VXR   Fas 0/0/0
lab-as5300-1    Eth 0           163             R       AS5300    Fas 0
lab-as5300-2    Eth 0           159             R       AS5300    Eth 0
lab-as5300-3    Eth 0           122             R       AS5300    Eth 0
lab-as5300-4    Eth 0           132             R       AS5300    Fas 0/0
lab-3621        Eth 0           140             R S     3631-telcoFas 0/0
008024 2758E0   Eth 0           132             T       CAT3000   1/2
```

Table 2-33 describes the fields that are shown in the example.

Table 2-33   show cdp neighbors Field Descriptions

Field	Definition
Device ID	Configured ID (name), MAC address, or serial number of the neighbor device.
Local Intrfce	(Local Interface) The protocol that is used by the connectivity media.
Holdtme	(Holdtime) Remaining amount of time, in seconds, that the current device holds the CDP advertisement from a transmitting router before discarding it.
Capability	Capability code that is discovered on the device. This device type is listed in the CDP Neighbors table. Possible values are as follows: R—Router T—Transparent bridge B—Source-routing bridge S—Switch H—Host I—IGMP device r—Repeater P—Phone
Platform	Product number of the device.
Port ID	Protocol and port number of the device.

This example shows how to display detailed information about your CDP neighbors:

```
Router# show cdp neighbors detail
------------------------
Device ID: lab-7206
Entry address(es):
  IP address: 172.19.169.83
Platform: cisco 7206VXR,  Capabilities: Router
Interface: Ethernet0,  Port ID (outgoing port): FastEthernet0/0/0
Holdtime : 123 sec

Version :
Cisco Internetwork Operating System Software
IOS (tm) 5800 Software (C5800-P4-M), Version 12.1(2)
Copyright (c) 1986-2002 by Cisco Systems, Inc.

advertisement version: 2
Duplex: half


------------------------
Device ID: lab-as5300-1
Entry address(es):
  IP address: 172.19.169.87
.
.
.
```

Table 2-34 describes the fields that are shown in the example.

Table 2-34   show cdp neighbors detail Field Descriptions

Field	Definition
Device ID	Name of the neighbor device and either the MAC address or the serial number of this device.
Entry address(es)	List of network addresses of neighbor devices.
[network protocol] address	Network address of the neighbor device. The address can be in IP, IPX, AppleTalk, DECnet, or CLNS protocol conventions.
Platform	Product name and number of the neighbor device.
Capabilities	Device type of the neighbor. This device can be a router, a bridge, a transparent bridge, a source-routing bridge, a switch, a host, an IGMP device, or a repeater.
Interface	Protocol and port number of the port on the current device.
Holdtime	Remaining amount of time, in seconds, that the current device holds the CDP advertisement from a transmitting router before discarding it.
Version:	Software version running on the neighbor device.
advertisement version:	Version of CDP that is being used for CDP advertisements.
Duplex:	Duplex state of connection between the current device and the neighbor device.

Related Commands	Command	Description
	show cdp	Displays global CDP information.
	show cdp entry	Displays information about a specific neighboring device discovered using CDP.
	show cdp interface	Displays information about the interfaces on which CDP is enabled.
	show cdp traffic	Displays information about traffic between devices gathered using CDP.

show cef interface policy-statistics

To display the per-interface traffic statistics, use the **show cef interface policy-statistics** command.

show cef interface policy-statistics

Syntax Description   This command has no keywords or arguments.

Command Default   This command has no default settings.

Command Default   User EXEC (>)

Command History

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

Examples   This example shows how to display the per-interface traffic statistics:

```
Router# show cef interface policy-statistics
POS7/0 is up (if_number 7)
Bucket PacketsBytes
1   0   0
2   0   0
3   0   0
4   0   0
5   100 10000
6   0   0
7   0   0
8   0   0
Router#
```

show class-map

To display class-map information, use the **show class-map** command.

show class-map [*class-name*]

Syntax Description

class-name	(Optional) Name of the class map.

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 class-map information for all class maps:

```
Router# show class-map
 Class Map match-any class-default (id 0)
   Match any
 Class Map match-any class-simple (id 2)
   Match any
 Class Map match-all ipp5 (id 1)
   Match ip precedence 5

 Class Map match-all agg-2 (id 3)

Router#
```

This example shows how to display class-map information for a specific class map:

```
Router# show class-map ipp5
 Class Map match-all ipp5 (id 1)
   Match ip precedence 5

Router#
```

Related Commands

Command	Description
class-map	Accesses the QoS class map configuration mode to configure QoS class maps.
show policy-map	Displays information about the policy map.
show policy-map interface	Displays the statistics and the configurations of the input and output policies that are attached to an interface.

show counters interface

To display the information about the interface counter, use the **show counters interface** command.

show counters interface {*type mod*/*port*} [**delta**]

Syntax Description

type	Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **port-channel**, **pos**, **atm**, **null**, **tunnel**, and **ge-wan**.
mod/*port*	Module and port number.
delta	(Optional) Displays the interface counters values since the last **clear counters** 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 **show counters interface** command is not supported on SVIs.

The **show counters interface delta** command displays a detailed list of the last-saved counter values.

Examples   This example shows how to display the information about the interface counter:

```
Router# show counters interface fastethernet 5/2
64 bit counters:
 0.                 rxHCTotalPkts = 1
 1.                 txHCTotalPkts = 1
 2.               rxHCUnicastPkts = 0
 3.               txHCUnicastPkts = 0
 4.             rxHCMulticastPkts = 0
 5.             txHCMulticastPkts = 0
 6.             rxHCBroadcastPkts = 1
 7.             txHCBroadcastPkts = 1
 8.                    rxHCOctets = 78
 9.                    txHCOctets = 78
10.            rxTxHCPkts64Octets = 0
11.         rxTxHCPkts65to127Octets = 2
12.        rxTxHCPkts128to255Octets = 0
13.        rxTxHCPkts256to511Octets = 0
14.      rxTxHCpkts512to1023Octets = 0
15.     rxTxHCpkts1024to1518Octets = 0
16.               txHCTrunkFrames = 0
17.               rxHCTrunkFrames = 0
18.                 rxHCDropEvents = 0
```

```
32 bit counters:
 0.              rxCRCAlignErrors = 0
 1.              rxUndersizedPkts = 0
 2.               rxOversizedPkts = 0
 3.               rxFragmentPkts = 0
 4.                     rxJabbers = 0
 5.                   txCollisions = 0
 6.                     ifInErrors = 0
 7.                    ifOutErrors = 0
 8.                    ifInDiscards = 0
 9.              ifInUnknownProtos = 0
10.                  ifOutDiscards = 0
11.         txDelayExceededDiscards = 0
12.                          txCRC = 0
13.                     linkChange = 1
14.              wrongEncapFrames = 0
All Port Counters
 1.                      InPackets = 1
 2.                       InOctets = 78
 3.                     InUcastPkts = 0
 4.                     InMcastPkts = 0
 5.                     InBcastPkts = 1
 6.                     OutPackets = 1
 7.                       OutOctets = 78
 8.                    OutUcastPkts = 0
 9.                    OutMcastPkts = 0
10.                    OutBcastPkts = 1
11.                       AlignErr = 0
12.                         FCSErr = 0
13.                         XmitErr = 0
14.                         RcvErr = 0
15.                       UnderSize = 0
16.                       SingleCol = 0
17.                        MultiCol = 0
18.                         LateCol = 0
19.                     ExcessiveCol = 0
20.                     CarrierSense = 0
21.                          Runts = 0
22.                         Giants = 0
23.                      InDiscards = 0
24.                     OutDiscards = 0
25.                        InErrors = 0
26.                       OutErrors = 0
27.                    TrunkFramesTx = 0
28.                    TrunkFramesRx = 0
29.                      WrongEncap = 0
30.      Broadcast_suppression_discards = 0
31.      Multicast_suppression_discards = 0
32.       Unicast_suppression_discards = 0
33.              rxTxHCPkts64Octets = 0
34.          rxTxHCPkts65to127Octets = 2
35.         rxTxHCPkts128to255Octets = 0
36.         rxTxHCPkts256to511Octets = 0
37.        rxTxHCpkts512to1023Octets = 0
38.       rxTxHCpkts1024to1518Octets = 0
39.                      DropEvents = 0
40.                  CRCAlignErrors = 0
41.                   UndersizedPkts = 0
42.                    OversizedPkts = 0
43.                    FragmentPkts = 0
44.                         Jabbers = 0
45.                       Collisions = 0
46.          DelayExceededDiscards = 0
```

```
47.                    bpduOutlost = 0
48.                    qos0Outlost = 0
49.                    qos1Outlost = 0
50.                    qos2Outlost = 0
51.                    qos3Outlost = 0
52.                bpduCbicOutlost = 0
53.                qos0CbicOutlost = 0
54.                qos1CbicOutlost = 0
55.                qos2CbicOutlost = 0
56.                qos3CbicOutlost = 0
57.                     bpduInlost = 0
58.                     qos0Inlost = 0
59.                     qos1Inlost = 0
60.                     qos2Inlost = 0
61.                     qos3Inlost = 0
62.                     qos4Inlost = 0
63.                     qos5Inlost = 0
64.                     qos6Inlost = 0
65.                     qos7Inlost = 0
66.                     pqueInlost = 0
67.                       Overruns = 0
68.                       maxIndex = 0

Router#
```

This example shows how to display the values for the interface counters since the last **clear counters** command:

```
Router# show counters interface gigabitethernet5/2 delta
Time since last clear
--------------------
1d08h
64 bit counters:
0. rxHCTotalPkts = 508473
1. txHCTotalPkts = 2366
2. rxHCUnicastPkts = 411611
3. txHCUnicastPkts = 193
4. rxHCMulticastPkts = 81868
5. txHCMulticastPkts = 2155
6. rxHCBroadcastPkts = 14994
7. txHCBroadcastPkts = 18
8. rxHCOctets = 36961992
.
.
.
Router#
```

Related Commands

Command	Description
clear counters	Clears the interface counters.

show diagnostic

To view the test results of the online diagnostics and list the supported test suites, use the **show diagnostic** command.

> **show diagnostic bootup level**
>
> **show diagnostic content** [**module** *num*]
>
> **show diagnostic events** [**module** *num*] [**event-type** *event-type*]
>
> **show diagnostic** {**ondemand settings**}
>
> **show diagnostic** {**result** [**module** *num*] [**detail**]}
>
> **show diagnostic schedule** [**module** *num*]

Syntax Description

bootup level	Displays the coverage level for the configured boot-up diagnostics.
content	Displays test information including test ID, test attributes, and supported coverage test levels for each test and for all modules.
module *num*	(Optional) Specifies the module number.
events	Displays the event log for the diagnostic events.
event-type *event-type*	(Optional) Specifies the event type; valid values are **error**, **info**, and **warning**.
ondemand settings	Displays the settings for the ondemand diagnostics.
result	Displays the test results.
detail	(Optional) Displays the test statistics of each test.
schedule	Displays the current scheduled diagnostic tasks.

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 do not enter a module *num*, information for all modules is displayed.

In the command output, the possible testing results are as follows:

- Passed (.)
- Failed (F)
- Unknown (U)

Examples   This example shows how to display the test suite and the monitoring interval and test attributes:

```
Router# show diagnostic content module 1
Diagnostic Tests List for Module 1:
Module 1:

  Diagnostics test suite attributes:
    M/C/* - Minimal level test / Complete level test / Not applicable
      B/* - Bypass bootup test / Not applicable
      P/* - Per port test / Not applicable
      D/N - Disruptive test / Non-disruptive test
      S/* - Only applicable to standby unit / Not applicable
      X/* - Not a health monitoring test / Not applicable
      F/* - Fixed monitoring interval test / Not applicable
      E/* - Always enabled monitoring test / Not applicable
      A/I - Monitoring is active / Monitoring is inactive
Testing Interval
  ID  Test Name                          Attributes (day hh:mm:ss.ms)
  === ================================== ========= =================
   1) TestDummy1 ----------------------> M**D****A  000 00:01:00.000
   2) TestDummy2 ----------------------> M**D**FEA  000 00:02:30.000
   3) TestGBICIntegrity ---------------> *BPD****I  not configured
   4) TestActiveToStandbyLoopback -----> M*PDS***I  not configured
   5) TestLoopback --------------------> M*PD****I  not configured
   6) TestNewLearn --------------------> M**N****I  not configured
   7) TestIndexLearn ------------------> M**N****I  not configured
   8) TestConditionalLearn ------------> M**N****I  not configured
   9) TestBadBpdu ---------------------> M**D****I  not configured
  10) TestCapture --------------------> M**D****I  not configured
  11) TestProtocolMatch ---------------> M**D****I  not configured
  12) TestChannel --------------------> M**D****I  not configured
  13) TestDontShortcut ---------------> M**Nrefer*I  not configured
  14) TestL3Capture2 -----------------> M**N****I  not configured
  15) TestL3VlanMet ------------------> M**N****I  not configured
  16) TestIngressSpan ----------------> M**N****I  not configured
  17) TestEgressSpan -----------------> M**N****I  not configured
  18) TestAclPermit ------------------> M**N****I  not configured
  19) TestAclDeny --------------------> M**D****I  not configured
  20) TestNetflowInlineRewrite -------> C*PD****I  not configured
Router#
```

This example shows how to display the configured boot-up diagnostic level:

```
Router# show diagnostic bootup level
Current Bootup Diagnostic Level = Complete
Router#
```

This example shows how to display the event log for the diagnostics:

```
Router# show diagnostic events

Diagnostic events (storage for 500 events, 10 events recorded)
Event Type (ET):I - Info, W - Warning, E - Error

Time Stamp        ET [Card] Event Message
----------------- -- --------------------------------------------------------
08/26 15:51:04.335 I  [1] TestIndexLearn Passed
08/26 15:51:04.335 I  [1] Diagnostics Passed
08/26 15:51:15.511 I  [8] TestLoopback Passed
08/26 15:51:15.511 I  [8] Diagnostics Passed
08/26 16:15:02.247 I  [1] TestDontLearn Passed
08/26 16:15:02.247 I  [1] Diagnostics Passed
08/26 16:15:12.683 I  [8] TestNetflowInlineRewrite Passed
08/26 16:15:12.683 I  [8] Diagnostics Passed
```

```
08/26 16:15:42.207 I  [2] TestActiveToStandbyLoopback Passed
08/26 16:15:42.207 I  [2] Diagnostics Passed
Router#
```

This example shows how to display the settings for the ondemand diagnostics:

```
Router# show diagnostic ondemand settings
Ondemand Run Iteration   = 2
Ondemand Action-on-Error = CONTINUE
Router#
```

This example shows how to display the current scheduled diagnostic tasks for the specified slot:

```
Router# show diagnostic schedule module 1
Current Time = 07:55:30 UTC Fri August 2 2002

Diagnostic for Module 1:

Schedule #1:
        To be run on January 3 2003 23:32
        Test ID(s) to be executed:1.

Schedule #2:
        To be run daily 14:45
        Test ID(s) to be executed:2.

Schedule #3:
        To be run weekly Monday 3:33
        Test ID(s) to be executed:all.
Router#
```

This example shows how to display the testing results for the specified slot:

```
Router# show diagnostic result module 3

Current bootup diagnostic level:complete

Module 3:

  Overall Diagnostic Result for Module 8 :PASS
  Diagnostic level at card bootup:complete

  Test results:(. = Pass, F = Fail, U = Untested)


  1) TestLoopback :

      Port  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
      ----------------------------------------------------------------------------
            .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .

      Port 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
      ----------------------------------------------------------------------------
            .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .

    2) TestNewLearn -------------------> .
    3) TestIndexLearn -----------------> .
    4) TestDontLearn ------------------> .
    5) TestConditionalLearn -----------> .
6) TestDontLearn ------------------> .
    7) TestConditionalLearn -----------> .
    8) TestBadBpdu --------------------> .
    9) TestTrap -----------------------> .
   10) TestMatch ---------------------> .
   11) TestCapture -------------------> .
```

■ **show diagnostic**

```
12) TestProtocolMatch --------------->  .
13) TestChannel --------------------->  .
14) TestIPFibShortcut --------------->  .
15) TestDontShortcut ---------------->  .
16) TestL3Capture2 ------------------>  .
17) TestL3VlanMet -------------------->  .
18) TestIngressSpan ----------------->  .
19) TestEgressSpan ------------------>  .
20) TestAclPermit ------------------->  .
21) TestAclDeny --------------------->  .
22) TestNetflowInlineRewrite:

    Port  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
    -----------------------------------------------------------------------------
          .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
    Port 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
    -----------------------------------------------------------------------------
          .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
Router#
```

This example shows how to display the detailed testing results for the specified slot:

```
Router# show diagnostic result module 1 detail
Current bootup diagnostic level:complete

Module 1:

  Overall Diagnostic Result for Module 1 :PASS
  Diagnostic level at card bootup:complete

  Test results:(. = Pass, F = Fail, U = Untested)
_____

  1) TestDummy ---------------------->  .
          Error code ------------------> 0 (DIAG_SUCCESS)
          Total run count -------------> 90
          Last test execution time ----> Dec 10 2002 12:34:30
          First test failure time -----> Dec 10 2002 11:57:39
          Last test failure time ------> Dec 10 2002 12:34:10
          Last test pass time ---------> Dec 10 2002 11:34:30
          Total failure count ---------> 65
          Consecutive failure count ---> 0
_____

  2) TestLoopback:

      Port  1  2
      ----------
            .  .


          Error code ------------------> 0 (DIAG_SUCCESS)
          Total run count -------------> 1
          Last test execution time ----> Dec 10 2002 12:37:18
          First test failure time -----> n/a
          Last test failure time ------> n/a
          Last test pass time ---------> Dec 10 2002 12:37:18
          Total failure count ---------> 0
          Consecutive failure count ---> 0
Router#
```

This example shows how to display the event logs for the diagnostics:

```
Router# show diagnostic events
Diagnostic events (storage for 500 events, 10 events recorded)
EventType:I - Info, W - Warning, E - Error

TimeStamp          Type [Card] EventMessage
08/26 15:51:04.335 I    [1] TestIndexLearn Passed
08/26 15:51:04.335 I    [1] Diagnostics Passed
08/26 15:51:15.511 I    [8] TestLoopback Passed
08/26 15:51:15.511 I    [8] Diagnostics Passed
08/26 16:15:02.247 I    [1] TestDontLearn Passed
08/26 16:15:02.247 I    [1] Diagnostics Passed
08/26 16:15:12.683 I    [8] TestNetflowInlineRewrite Passed
08/26 16:15:12.683 I    [8] Diagnostics Passed
08/26 16:15:42.207 I    [2] TestActiveToStandbyLoopback Passed
08/26 16:15:42.207 I    [2] Diagnostics Passed
Router#
```

Related Commands

Command	Description
diagnostic bootup level	Sets the bootup diagnostic level.
diagnostic cns	Configures the CNS diagnostics.
diagnostic event-log size	Modifies the diagnostic event-log size dynamically.
diagnostic monitor	Configures the health-monitoring diagnostic testing.
diagnostic ondemand	Configures the ondemand diagnostics.
diagnostic schedule test	Sets the scheduling of test-based diagnostic testing for a specific module or schedules a supervisor engine switchover.
diagnostic start	Runs the specified diagnostic test.
diagnostic stop	Stops the testing process.

show diagnostic cns

To display the information about the CNS subject, use the **show diagnostic cns** command.

show diagnostic cns {**publish** | **subscribe**}

Syntax Description

publish	Displays the subject with which the diagnostic results is published.
subscribe	Displays the subscribed subjects.

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.

Usage Guidelines   The CNS subsystem communicates with remote network applications through the CNS-event agent and follows the publish and subscribe model. An application sets itself up to receive events by subscribing to the approprate event subject name.

Examples   This example shows how to display the subject with which the diagnostic results is published:

```
Router# show diagnostic cns publish
Subject: cisco.cns.device.diag_results
Router#
```

This example shows how to display the subscribed subject:

```
Router# show diagnostic cns subscribe
Subject: cisco.cns.device.diag_get_results
Router#
```

Related Commands

Command	Description
diagnostic cns	Configures the CNS diagnostics.

show diagnostic sanity

To display sanity check results, use the **show diagnostic sanity** command.

show diagnostic sanity

Syntax Description   This command has no arguments or keywords.

Command Default   If you enter this command without any arguments, it displays information for all the Gigabit Ethernet WAN interfaces in the Catalyst 6500 series switch.

Command Modes   Privileged EXEC (#)

Command History

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

Usage Guidelines   The sanity check runs a set of predetermined checks on the configuration with a possible combination of certain system states to compile a list of warning conditions. The checks are designed to look for anything that seems out of place and are intended to serve as an aid to maintaining the system sanity.

The following is a list of the checks that are run and the action taken when the condition is found:

- Checks whether the default gateways are reachable. If so, the system stops pinging.
- If a port autonegotiates to half duplex, the system flags it.

Trunking Checks

- If a trunk port has the mode set to on, the system flags it.
- If a port is trunking and mode is auto, the system flags it.
- If a trunk port is not trunking and the mode is desirable, the system flags it.
- If a trunk port negotiates to half duplex, the system flags it.

Channeling Checks

- If a port has channeling mode set to on, the system flags it.
- If a port is not channeling and the mode is set to desirable, the system flags it.
- If a VLAN has a spanning-tree root of 32K (root is not set), the system flags it.

Spanning-tree VLAN Checks

- If a VLAN has a max age on the spanning-tree root that is different than the default, the system flags it.
- If a VLAN has a fwd delay on the spanning-tree root that is different than the default, the system flags it.
- If a VLAN has a fwd delay on the bridge that is different than the default, the system flags it.

- If a VLAN has a fwd delay on the bridge that is different than the default, the system flags it.

- If a VLAN has a hello time on the bridge that is different than the default, the system flags it.

Spanning-tree Port Checks

- If a port has a port cost that is different than the default, the system flags it.

- If a port has a port priority that is different than the default, the system flags it.

UDLD Checks

- If a port has UDLD disabled, the system flags it.

- If a port had UDLD shut down, the system flags it.

- If a port had a UDLD undetermined state, the system flags it.

Assorted Port Checks

- If a port had receive flow control disabled, the system flags it.

- If a trunk port had PortFast enabled, the system flags it.

- The system flags it if an inline power port has any of the following states:

  – denied

  – faulty

  – other

  – off

- If a port has a native VLAN mismatch, the system flags it.

- If a port has a duplex mismatch, the system flags it.

Bootstring and Config Register Checks

- The config register on the primary supervisor engine (and on the secondary supervisor engine if present) must be one of the following values: 0x2 , 0x102, or 0x2102.

- The system verifies the bootstring on the primary supervisor engine (and on the secondary supervisor engine if present). The system displays a message if the bootstring is empty.

- The system verifies that every file is specified in the bootstring. The system displays a message if the file is absent or shows up with a wrong checksum.

  If only *device*: is specified as a filename, then the system verifies that the first file is on the device.

Assorted Checks

- The system displays a message if IGMP snooping is disabled.

- The system displays a message if any of the values of the snmp community access strings {RO,RW,RW-ALL} is the same as the default.

- The system displays a message if any of the modules are in states other than "Ok."

- The system displays a message that lists all the tests that failed (displayed as an "F") in the **show test all** command.

- The system displays a message if *fast is not configured on the switch anywhere.

- The system displays a message if there is enough room for the crashinfo file on the bootflash:.

- The system displays a message if multicast routing is enabled globally but is not applied to all interfaces.

- The system displays a message if IGMP snooping is disabled and RGMP is enabled.

Examples

This example displays samples of the messages that could be displayed with the **show diagnostic sanity** command:

```
Router# show diagnostic sanity
Pinging default gateway 10.6.141.1 ....
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.6.141.1, timeout is 2 seconds:
..!!.
Success rate is 0 percent (0/5)

IGMP snooping disabled please enable it for optimum config.

IGMP snooping disabled but RGMP enabled on the following interfaces,
please enable IGMP for proper config :
Vlan1, Vlan2, GigabitEthernet1/1

Multicast routing is enabled globally but not enabled on the following
interfaces:
GigabitEthernet1/1, GigabitEthernet1/2

A programming algorithm mismatch was found on the device bootflash:
Formatting the device is recommended.

The bootflash: does not have enough free space to accomodate the crashinfo file.

Please check your confreg value : 0x0.

Please check your confreg value on standby: 0x0.

The boot string is empty. Please enter a valid boot string .
Could not verify boot image "disk0:" specified in the boot string on the
slave.

Invalid boot image "bootflash:asdasd" specified in the boot string on the
slave.

Please check your boot string on the slave.

UDLD has been disabled globally - port-level UDLD sanity checks are
being bypassed.
OR
[
The following ports have UDLD disabled. Please enable UDLD for optimum
config:
Fa9/45

The following ports have an unknown UDLD link state. Please enable UDLD
on both sides of the link:
Fa9/45
]

The following ports have portfast enabled:
Fa9/35, Fa9/45

The following ports have trunk mode set to on:
Fa4/1, Fa4/13

The following trunks have mode set to auto:
Fa4/2, Fa4/3

The following ports with mode set to desirable are not trunking:
Fa4/3, Fa4/4
```

```
The following trunk ports have negotiated to half-duplex:
Fa4/3, Fa4/4

The following ports are configured for channel mode on:
Fa4/1, Fa4/2, Fa4/3, Fa4/4

The following ports, not channeling are configured for channel mode
desirable:
Fa4/14

The following vlan(s) have a spanning tree root of 32768:
1

The following vlan(s) have max age on the spanning tree root different from
the default:
1-2

The following vlan(s) have forward delay on the spanning tree root different
from the default:
1-2

The following vlan(s) have hello time on the spanning tree root different
from the default:
1-2

The following vlan(s) have max age on the bridge different from the
default:
1-2

The following vlan(s) have fwd delay on the bridge different from the
default:
1-2

The following vlan(s) have hello time on the bridge different from the
default:
1-2

The following vlan(s) have a different port priority than the default
on the port FastEthernet4/1
1-2

The following ports have recieve flow control disabled:
Fa9/35, Fa9/45

The following inline power ports have power-deny/faulty status:
Gi7/1, Gi7/2

The following ports have negotiated to half-duplex:
Fa9/45

The following vlans have a duplex mismatch:
Fas 9/45

The following interafaces have a native vlan mismatch:
interface (native vlan - neighbor vlan)
 Fas 9/45 (1 - 64)

The value for Community-Access on read-only operations for SNMP is the same
as default. Please verify that this is the best value from a security point
of view.

The value for Community-Access on write-only operations for SNMP is the same
as default. Please verify that this is the best value from a security point
of view.
```

```
The value for Community-Access on read-write operations for SNMP is the same
as default. Please verify that this is the best value from a security point
of view.

Please check the status of the following modules:
8,9

Module 2 had a MINOR_ERROR.

The Module 2 failed the following tests:
TestIngressSpan

The following ports from Module2 failed test1:
1,2,4,48
```

show dot1q-tunnel

To display a list of 802.1Q tunnel-enabled ports, use the **show dot1q-tunnel** command.

show dot1q-tunnel [{**interface** *interface interface-number*}]

Syntax Description

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

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.

Usage Guidelines   If you do not enter any keywords, the 802.1Q tunnel ports for all interfaces are displayed.

The *interface-number* argument designates the module and port number for the **ethernet**, **fastethernet**, **gigabitethernet**, and **tengigabitethernet** keywords. 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 slot number are from 1 to 13 and valid values for the port number are from 1 to 48.

The *interface-number* argument designates the port-channel number for the **port-channel** keyword; valid values are from 1 to 282. The values from 257 to 282 are supported on the CSM and the FWSM only.

Examples   This example indicates that the port is up and has one 802.1Q tunnel that is configured on it:

```
Router# show dot1q-tunnel interface port-channel 10
Interface
---------
Po10
```

Related Commands

Command	Description
switchport mode	Sets the interface type.
vlan dot1q tag native	Enables 802.1Q tagging for all VLANs in a trunk.

show dot1x

To display the 802.1X information, use the **show dot1x** command.

> **show dot1x** {**interface** *interface interface-number*}

> **show dot1x** {**all** | **brief** | **summary** | {**statistics** {**interface** *interface interface-number*}}}

Syntax Description

interface *interface*	Displays the 802.1X information for the interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, and **tengigabitethernet**.
interface-number	Interface number; see the "Usage Guidelines" section for valid values.
all	Displays the 802.1X information for all interfaces.
brief	Displays information about the 802.1X status for all interfaces.
summary	Displays information about the 802.1X summary for the whole system.
statistics	Displays information about the 802.1X port; see the "Usage Guidelines" section for 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 the **show dot1x statistics** command, you must enter **interface** *interface interface-number* for the command to perform correctly.

If you disable 802.1X globally, the output of the **show dot1x brief** command displays nothing and the **show dot1x summary** command output displays 0 in all fields.

The *interface-number* argument designates the module and port number for the **ethernet**, **fastethernet**, **gigabitethernet**, and **tengigabitetherne** keywords. 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 slot 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 802.1X information for a specific interface:

```
Router# show dot1x interface fastethernet 5/1
Default Dot1x Configuration Exists for this interface FastEthernet5/1
AuthSM State      = FORCE AUTHORIZED
BendSM State      = IDLE
PortStatus        = AUTHORIZED
MaxReq            = 2
MultiHosts        = Disabled
```

```
PortControl        = Force Authorized
QuietPeriod        = 60 Seconds
Re-authentication  = Disabled
ReAuthPeriod       = 3600 Seconds
ServerTimeout      = 30 Seconds
SuppTimeout        = 30 Seconds
TxPeriod           = 30 Seconds

Router#
```

This example shows how to display the 802.1X information for all interfaces:

```
Router# show dot1x all
Dot1x Info for interface FastEthernet3/2
----------------------------------------------------
AuthSM State = FORCE UNAUTHORIZED
BendSM State = IDLE
PortStatus = UNAUTHORIZED
MaxReq = 2
MultiHosts = Disabled
Port Control = Force UnAuthorized
QuietPeriod = 60 Seconds
Re-authentication = Disabled
ReAuthPeriod = 3600 Seconds
ServerTimeout = 30 Seconds
SuppTimeout = 30 Seconds
TxPeriod = 30 Seconds
Dot1x Info for interface FastEthernet3/12
----------------------------------------------------
AuthSM State = Unknown State
BendSM State = Unknown State
PortStatus = UNKNOWN
MaxReq = 2
MultiHosts = Disabled
Port Control = Auto
QuietPeriod = 60 Seconds
Re-authentication = Disabled
ReAuthPeriod = 3600 Seconds
ServerTimeout = 30 Seconds
SuppTimeout = 30 Seconds
TxPeriod = 30 Seconds
Guest-Vlan = 91
Router#
```

This example shows how to display the 802.1X statistics for a port:

```
Router# show dot1x statistics interface fastethernet3/1
PortStatistics Parameters for Dot1x
-------------------------------------------
TxReqId = 0 TxReq = 0 TxTotal = 0
RxStart = 0 RxLogoff = 0 RxRespId = 0 RxResp = 0
RxInvalid = 0 RxLenErr = 0 RxTotal= 0
RxVersion = 0 LastRxSrcMac 0000.0000.0000
Router#
```

This example shows how to display a summary of 802.1X information for the whole system:

```
Router# show dot1x summary

Total number of dot1x enabled ports:           336
Total number of FORCE_UNAUTHORIZED dot1x ports: 0
Total number of authorized dot1x enabled ports: 254
Total number of dot1x ports in single host mode: 336
Total number of dot1x ports in multi host mode: 0
```

```
Total number of dot1x authenticated supplicants:        254
Total number of supplicants in AUTH_DISCONNECTED state:  0
Total number of supplicants in AUTH_CONNECTING state:    0
Total number of supplicants in AUTH_AUTHENTICATING state: 0
Total number of supplicants in AUTH_HELD state:          0
Router#
```

This example shows how to display the status of all 802.1X-enabled ports:

```
Router# show dot1x brief
RV - Radius returned VLAN

Port      Supplicant MAC  AuthSM State   BendSM State   Port Status   RV
----      --------------  ------------   ------------   -----------   ----
Fa4/1     0000.0000.0000  N/A            N/A            N/A           -
Fa4/2     0000.0000.0000  N/A            N/A            N/A           -
Fa4/3     0000.0000.0000  N/A            N/A            N/A           -
Fa4/4     0000.0000.0000  N/A            N/A            N/A           -
Fa4/5     0000.0000.0000  N/A            N/A            N/A           -
Fa4/6     0000.0000.0000  N/A            N/A            N/A           -
Fa4/7     0000.0000.0000  N/A            N/A            N/A           -
.
.
. Output truncated
Fa4/35    00fe.ed00.01ba  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/36    00fe.ed00.01b8  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/37    00fe.ed00.01e6  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/38    00fe.ed00.01e4  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/39    00fe.ed00.01e2  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/40    00fe.ed00.01e0  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/41    00fe.ed00.01de  AUTHENTICATED  IDLE           AUTHORIZED    101
Fa4/42    00fe.ed00.01dc  AUTHENTICATED  IDLE           AUTHORIZED    101
Router#
```

show dss log

To display the invalidation routes for the DSS range on the NetFlow table, use the **show dss log** command.

show dss log {**ip** | **ipv6**}

Syntax Description

ip	Displays the range-invalidation profile for the DSS IP.
ipv6	Displays the range-invalidation profile for the DSS IPv6.

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.

Usage Guidelines   Whenever an IPv6 entry is deleted from the routing table, a message is sent to the switch processor to remove the entries that are associated to that network. Several IPv6 prefixes are collapsed to the less specific one if too many invalidations occur in a short period of time.

Examples   This example shows how to display the range-invalidation profile for the DSS IP:

```
Router# show dss log ip
22:50:18.551  prefix 172.20.52.18 mask 172.20.52.18
22:50:20.059  prefix 127.0.0.0 mask 255.0.0.0
22:51:48.767  prefix 172.20.52.18 mask 172.20.52.18
22:51:52.651  prefix 0.0.0.0 mask 0.0.0.0
22:53:02.651  prefix 0.0.0.0 mask 0.0.0.0
22:53:19.651  prefix 0.0.0.0 mask 0.0.0.0
Router#
```

show environment alarm

To display the information about the environmental alarm, use the **show environment alarm** command.

show environment alarm [{**status** | **threshold**} [*frutype*]]

Syntax Description

status	(Optional) Displays the operational FRU status.
threshold	(Optional) Displays the preprogrammed alarm thresholds.
frutype	(Optional) Alarm type; valid values are **all**, **backplane**, **clock** *number*, **earl** *slot*, **fan-tray**, **module** *slot*, **rp** *slot*, **power-supply** *number*, **supervisor** *slot*, and **vtt** *number*. See the "Usage Guidelines" section for a list of valid values for *number* and *slot*.

Command Default   If you do not enter a *frutype*, all the information about the environmental alarm status is displayed.

Command Modes   EXEC (>)

Command History

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

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

- **clock** *number*—1 and 2.
- **earl** *slot*—See the "Usage Guidelines" section for valid values.
- **module** *slot*—See the "Usage Guidelines" section for valid values.
- **rp** *slot*—See the "Usage Guidelines" section for valid values.
- **power-supply** *number*—1 and 2.
- **supervisor** *slot*—See the "Usage Guidelines" section for valid values.
- **vtt** *number*—1 to 3.

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

Examples   This example shows how to display all the information about the status of the environmental alarm:

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

power-supply 1 fan-fail: OK
  threshold #1 for power-supply 1 fan-fail:
    (sensor value != 0) is system minor alarm
```

```
power-supply 1 power-output-fail: OK
  threshold #1 for power-supply 1 power-output-fail:
    (sensor value != 0) is system minor alarm
fantray fan operation sensor: OK
  threshold #1 for fantray fan operation sensor:
    (sensor value != 0) is system minor alarm
operating clock count: 2
  threshold #1 for operating clock count:
    (sensor value < 2) is system minor alarm
  threshold #2 for operating clock count:
    (sensor value < 1) is system major alarm
operating VTT count: 3
  threshold #1 for operating VTT count:
    (sensor value < 3) is system minor alarm
  threshold #2 for operating VTT count:
    (sensor value < 2) is system major alarm
VTT 1 OK: OK
  threshold #1 for VTT 1 OK:
    (sensor value != 0) is system minor alarm
VTT 2 OK: OK
  threshold #1 for VTT 2 OK:
    (sensor value != 0) is system minor alarm
VTT 3 OK: OK
  threshold #1 for VTT 3 OK:
    (sensor value != 0) is system minor alarm
clock 1 OK: OK
  threshold #1 for clock 1 OK:
    (sensor value != 0) is system minor alarm
clock 2 OK: OK
  threshold #1 for clock 2 OK:
    (sensor value != 0) is system minor alarm
module 1 power-output-fail: OK
  threshold #1 for module 1 power-output-fail:
    (sensor value != 0) is system major alarm
module 1 outlet temperature: 21C
  threshold #1 for module 1 outlet temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for module 1 outlet temperature:
    (sensor value > 70) is system major alarm
module 1 inlet temperature: 25C
  threshold #1 for module 1 inlet temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for module 1 inlet temperature:
    (sensor value > 70) is system major alarm
module 1 device-1 temperature: 30C
  threshold #1 for module 1 device-1 temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for module 1 device-1 temperature:
    (sensor value > 70) is system major alarm
module 1 device-2 temperature: 29C
  threshold #1 for module 1 device-2 temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for module 1 device-2 temperature:
    (sensor value > 70) is system major alarm
module 5 power-output-fail: OK
  threshold #1 for module 5 power-output-fail:
    (sensor value != 0) is system major alarm
module 5 outlet temperature: 26C
  threshold #1 for module 5 outlet temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for module 5 outlet temperature:
    (sensor value > 75) is system major alarm
module 5 inlet temperature: 23C
  threshold #1 for module 5 inlet temperature:
```

```
      (sensor value > 50) is system minor alarm
  threshold #2 for module 5 inlet temperature:
    (sensor value > 65) is system major alarm
EARL 1 outlet temperature: N/O
  threshold #1 for EARL 1 outlet temperature:
    (sensor value > 60) is system minor alarm
  threshold #2 for EARL 1 outlet temperature:
    (sensor value > 75) is system major alarm
EARL 1 inlet temperature: N/O
  threshold #1 for EARL 1 inlet temperature:
    (sensor value > 50) is system minor alarm
  threshold #2 for EARL 1 inlet temperature:
    (sensor value > 65) is system major alarm
Router>
```

Related Commands	Command	Description
	show environment status	Displays the information about the operational FRU status.
	show environment temperature	Displays the current temperature readings.

show environment cooling

To display the information about the cooling parameter, use the **show environment cooling** command.

show environment cooling

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.

Examples   This example shows how to display the information about the cooling parameter:

```
Router# show environment cooling
fan-tray 1:
  fan-tray 1 fan-fail: failed
fan-tray 2:
  fan 2 type: FAN-MOD-9
  fan-tray 2 fan-fail: OK
chassis cooling capacity: 690 cfm
ambient temperature: 55C
chassis per slot cooling capacity: 75 cfm

  module 1 cooling requirement: 70 cfm
  module 2 cooling requirement: 70 cfm
  module 5 cooling requirement: 30 cfm
  module 6 cooling requirement: 70 cfm
  module 8 cooling requirement: 70 cfm
  module 9 cooling requirement: 30 cfm
Router#
```

Related Commands

Command	Description
hw-module fan-tray version	Sets the version (high or low power) type of the fan.

show environment status

To display the information about the operational FRU status, use the **show environment status** command.

show environment status [*frutype*]

Syntax Description

frutype	(Optional) FRU type; see the "Usage Guidelines" section for a list of valid values.

Command Default   If you do not enter a *frutype*, all FRU status information is displayed.

Command Modes   EXEC (>)

Command History

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

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

- **all**—No arguments.
- **backplane**—No arguments.
- **clock** *number*—1 and 2.
- **earl** *slot*—See the "Usage Guidelines" section for valid values.
- **fan-tray**—No arguments.
- **module** *slot*—See the "Usage Guidelines" section for valid values.
- **power-supply** *number*—1 and 2.
- **rp** *slot*—See the "Usage Guidelines" section for valid values.
- **supervisor** *slot*—See the "Usage Guidelines" section for valid values.
- **vtt** *number*—1 to 3.

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

Examples   This example shows how to display the information about the environmental status:

```
Router> show environment status
backplane:
  operating clock count: 2
  operating VTT count: 3
fan-tray:
  fantray fan operation sensor: OK
```

```
                    VTT 1:
                      VTT 1 OK: OK
                    VTT 2:
                      VTT 2 OK: OK
                    VTT 3:
                      VTT 3 OK: OK
                    clock 1:
                      clock 1 OK: OK, clock 1 clock-inuse: not-in-use
                    clock 2:
                      clock 2 OK: OK, clock 2 clock-inuse: in-use
                    power-supply 1:
                      power-supply 1 fan-fail: OK
                      power-supply 1 power-output-fail: OK
                    module 1:
                      module 1 power-output-fail: OK
                      module 1 outlet temperature: 21C
                      module 1 inlet temperature: 25C
                      module 1 device-1 temperature: 30C
                      module 1 device-2 temperature: 29C
                      EARL 1 outlet temperature: N/O
                      EARL 1 inlet temperature: N/O
                    module 5:
                      module 5 power-output-fail: OK
                      module 5 outlet temperature: 26C
                      module 5 inlet temperature: 23C
                      module 5 device-1 temperature: 26C
                      module 5 device-2 temperature: 27C
                    Router>
```

This example shows how to display the information about the high-capacity power supplies:

```
Router# show environment status power-supply 2
power-supply 2:
  power-supply 2 fan-fail: OK
  power-supply 2 power-input 1: none
  power-supply 2 power-input 2: AC low
  power-supply 2 power-input 3: AC high
  power-supply 2 power-output: low (mode 1)
  power-supply 2 power-output-fail: OK
```

Table 2-35 describes the fields that are shown in the example.

Table 2-35   show environment status Command Output Fields

Field	Description
operating clock count	Physical clock count.
operating VTT count	Physical VTT count.
fan tray fan operation sensor	System fan tray failure status. The failure of the system fan tray is indicated as a minor alarm.
VTT 1, VTT2, and VTT3	Status of the chassis backplane power monitors that are located on the rear of the chassis under the rear cover. Operation of at least two VTTs is required for the system to function properly. A minor system alarm is signaled when one of the three VTTs fails. A major alarm is signaled when two or more VTTs fail and the supervisor engine is accessible through the console port.
clock # clock-inuse	Clock status. Failure of either clock is considered to be a minor alarm.

Table 2-35   show environment status Command Output Fields (continued)

Field	Description
power-supply # fan-fail	Fan failure. Fan failures on either or both (if any) power supplies are considered minor alarms.
power-input-fail	Power input failure status (none, AC high, AC low).
power-output-fail	Power output failure status (high, low).
outlet temperature	Exhaust temperature value.
inlet temperature	Intake temperature value.
device-1 and device-2 temperature	Two devices that measure the internal temperature on each indicated module. The temperature shown indicates the temperature that the device is recording. The devices are not placed at an inlet or an exit but are additional reference points.

Related Commands

Command	Description
show environment alarm	Displays the information about the environmental alarm.
show environment temperature	Displays the current temperature readings.

show environment temperature

To display the current temperature readings, use the **show environment temperature** command.

>**show environment temperature** [*frutype*]

Syntax Description		
frutype	(Optional) FRU type; see the "Usage Guidelines" section for a list of valid values.	

Command Default If you do not enter a *frutype*, the module and EARL temperature readings are displayed.

Command Modes EXEC (>)

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

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

- **earl** *slot*—See the "Usage Guidelines" section for valid values.
- **module** *slot*—See the "Usage Guidelines" section for valid values.
- **rp** *slot*—See the "Usage Guidelines" section for valid values.
- **vtt** *number*—1 to 3.
- **clock** *number*—1 and 2.

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

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

In the output display, the following applies:

- N/O means not operational—The sensor is broken, returning impossible values.
- N/A means not available—The sensor value is presently not available; try again later.
- VTT 1, 2, and 3 refer to the power monitors that are located on the chassis backplane under the rear cover.

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

```
Router> show environment temperature module 5
  module 5 outlet temperature: 34C
  module 5 inlet temperature: 27C
  module 5 device-1 temperature: 42C
```

```
  module 5 device-2 temperature: 41C
  module 5 asic-1 (SSO-1) temp: 29C
  module 5 asic-2 (SSO-2) temp: 29C
  module 5 asic-3 (SSO-3) temp: 29C
  module 5 asic-4 (SSO-4) temp: 28C
  module 5 asic-5 (SSA-1) temp: 29C
  module 5 asic-6 (HYPERION-1) temp: 29C
Router>
```

This example shows how to display the temperature readings for all modules:

```
Router> show environment temperature
  VTT 1 outlet temperature: 25C
  VTT 2 outlet temperature: 24C
  VTT 3 outlet temperature: 28C
  module 1 outlet temperature: 24C
  module 1 device-2 temperature: 29C
  RP 1 outlet temperature: 25C
  RP 1 inlet temperature: 29C
  EARL 1 outlet temperature: 25C
  EARL 1 inlet temperature: 22C
  module 5 outlet temperature: 27C
  module 5 inlet temperature: 22C
Router#
```

Table 2-36 describes the fields that are shown in the example.

Table 2-36   show environment temperature Command Output Fields

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

Related Commands	Command	Description
	show environment alarm	Displays the information about the environmental alarm.
	show environment status	Displays the information about the operational FRU status.

show eobc

To display the information about the EOBC interface, use the **show eobc** command.

>   **show eobc**

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 information about the EOBC interface:

```
Router> show eobc
EOBC0/0 is up, line protocol is up
  Hardware is DEC21143, address is 0000.2100.0000 (bia 0000.2100.0000)
  MTU 0 bytes, BW 100000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Unknown duplex, Unknown Speed, MII
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 25/2147483647, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     172196 packets input, 11912131 bytes
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast
     0 input packets with dribble condition detected
     172144 packets output, 11363476 bytes, 0 underruns
     0 output errors, 0 collisions, 1 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
     0 output buffer failures, 0 output buffers swapped out
Interface EOBC0/0
Hardware is DEC21143
 dec21140_ds=0x618FB938, registers=0x3C018000, ib=0x38A9180
 rx ring entries=128, tx ring entries=256, af setup failed=0
 rxring=0x38A9280, rxr shadow=0x618FBB20, rx_head=28, rx_tail=0
 txring=0x38A9AC0, txr shadow=0x618FBD4C, tx_head=72, tx_tail=72, tx_count=0
 PHY link up
 CSR0=0xF8024882, CSR1=0xFFFFFFFF, CSR2=0xFFFFFFFF, CSR3=0x38A9280
 CSR4=0x38A9AC0, CSR5=0xF0660000, CSR6=0x320CA002, CSR7=0xF3FFA261
```

```
       CSR8=0xE0000000, CSR9=0xFFFDC3FF, CSR10=0xFFFFFFFF, CSR11=0x0
       CSR12=0xC6, CSR13=0xFFFF0000, CSR14=0xFFFFFFFF, CSR15=0x8FF80000
      DEC21143 PCI registers:
       bus_no=0, device_no=6
       CFID=0x00191011, CFCS=0x02800006, CFRV=0x02000041, CFLT=0x0000FF00
       CBIO=0x20000801, CBMA=0x48018000, CFIT=0x28140120, CFDD=0x00000400
      MII registers:
       Register 0x00:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
       Register 0x08:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
       Register 0x10:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
       Register 0x18:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
      throttled=0, enabled=0, disabled=0
       rx_fifo_overflow=0, rx_no_enp=0, rx_discard=0
       tx_underrun_err=0, tx_jabber_timeout=0, tx_carrier_loss=0
       tx_no_carrier=0, tx_late_collision=0, tx_excess_coll=0
       tx_collision_cnt=0, tx_deferred=0, fatal_tx_err=0, tbl_overflow=0
       HW addr filter: 0x38D2EE0, ISL Disabled
       Entry= 0:  Addr=0000.0000.0000
       Entry= 1:  Addr=0000.0000.0000
       Entry= 2:  Addr=0000.0000.0000
       Entry= 3:  Addr=0000.0000.0000
       Entry= 4:  Addr=0000.0000.0000
       Entry= 5:  Addr=0000.0000.0000
       Entry= 6:  Addr=0000.0000.0000
       Entry= 7:  Addr=0000.0000.0000
       Entry= 8:  Addr=0000.0000.0000
       Entry= 9:  Addr=0000.0000.0000
       Entry=10:  Addr=0000.0000.0000
       Entry=11:  Addr=0000.0000.0000
       Entry=12:  Addr=0000.0000.0000
       Entry=13:  Addr=0000.0000.0000
       Entry=14:  Addr=0000.0000.0000
       Entry=15:  Addr=0000.2100.0000
      Router>
```

This example shows how to display the information about the EOBC interface but excludes lines that contain the word output:

```
Router> show eobc | exclude output
EOBC0/0 is up, line protocol is up
  Hardware is DEC21143, address is 0000.2100.0000 (bia 0000.2100.0000)
  MTU 0 bytes, BW 100000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Unknown duplex, Unknown Speed, MII
  ARP type: ARPA, ARP Timeout 04:00:00
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 25/2147483647, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
     175919 packets input, 12196443 bytes
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast
     0 input packets with dribble condition detected
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier
Interface EOBC0/0
Hardware is DEC21143
 dec21140_ds=0x618FB938, registers=0x3C018000, ib=0x38A9180
 rx ring entries=128, tx ring entries=256, af setup failed=0
 rxring=0x38A9280, rxr shadow=0x618FBB20, rx_head=7, rx_tail=0
 txring=0x38A9AC0, txr shadow=0x618FBD4C, tx_head=209, tx_tail=209, tx_count=0
```

```
PHY link up
CSR0=0xF8024882, CSR1=0xFFFFFFFF, CSR2=0xFFFFFFFF, CSR3=0x38A9280
CSR4=0x38A9AC0, CSR5=0xF0660000, CSR6=0x320CA002, CSR7=0xF3FFA261
CSR8=0xE0000000, CSR9=0xFFFDC3FF, CSR10=0xFFFFFFFF, CSR11=0x0
CSR12=0xC6, CSR13=0xFFFF0000, CSR14=0xFFFFFFFF, CSR15=0x8FF80000
DEC21143 PCI registers:
 bus_no=0, device_no=6
 CFID=0x00191011, CFCS=0x02800006, CFRV=0x02000041, CFLT=0x0000FF00
 CBIO=0x20000801, CBMA=0x48018000, CFIT=0x28140120, CFDD=0x00000400
MII registers:
 Register 0x00:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
 Register 0x08:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
 Register 0x10:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
 Register 0x18:   FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF  FFFF
throttled=0, enabled=0, disabled=0
rx_fifo_overflow=0, rx_no_enp=0, rx_discard=0
tx_underrun_err=0, tx_jabber_timeout=0, tx_carrier_loss=0
tx_no_carrier=0, tx_late_collision=0, tx_excess_coll=0
tx_collision_cnt=0, tx_deferred=0, fatal_tx_err=0, tbl_overflow=0
HW addr filter: 0x38D2EE0, ISL Disabled
 Entry= 0:  Addr=0000.0000.0000
 Entry= 1:  Addr=0000.0000.0000
 Entry= 2:  Addr=0000.0000.0000
 Entry= 3:  Addr=0000.0000.0000
 Entry= 4:  Addr=0000.0000.0000
 Entry= 5:  Addr=0000.0000.0000
 Entry= 6:  Addr=0000.0000.0000
 Entry= 7:  Addr=0000.0000.0000
 Entry= 8:  Addr=0000.0000.0000
 Entry= 9:  Addr=0000.0000.0000
 Entry=10:  Addr=0000.0000.0000
 Entry=11:  Addr=0000.0000.0000
 Entry=12:  Addr=0000.0000.0000
 Entry=13:  Addr=0000.0000.0000
 Entry=14:  Addr=0000.0000.0000
 Entry=15:  Addr=0000.2100.0000
Router>
```

show erm statistics

To display the FIB TCAM exception status for IPv4, IPv6, and MPLS protocols, use the **show erm statistics** command.

show erm statistics

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   The IPv4, IPv6, and MPLS exception state displays FALSE when the protocol is not under the exception or displays TRUE when the protocol is under the exception.

Examples   This example shows how to display the FIB TCAM exception status for IPv4, IPv6, and MPLS protocols:

```
Router> show erm statistics
#IPv4 excep notified    = 0
#IPv6 excep notified    = 0
#MPLS excep notified    = 0
#IPv4 reloads done      = 0
#IPv6 reloads done      = 0
#MPLS reloads done      = 0
Current IPv4 excep state = FALSE
Current IPv6 excep state = FALSE
Current MPLS excep state = FALSE
#Timer expired          = 0
#of erm msgs            = 1
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 errdisable detect

To display the error-disable detection status, use the **show errdisable detect** command.

show errdisable detect

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 error-disable detection status:

```
Router# show errdisable detect
ErrDisable Reason   Detection status
----------------    ----------------
udld                Enabled
bpduguard           Enabled
rootguard           Enabled
packet-buffer-err   Enabled
pagp-flap           Enabled
dtp-flap            Enabled
link-flap           Enabled
Router#
```

Related Commands

Command	Description
errdisable detect cause	Enables the error-disable detection.

show errdisable flap-value

To display the flap values for error-disable detection, use the **show errdisable flap-value** command.

show errdisable flap-value

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 flap values for error-disable detection:

```
Router# show errdisable flap-value
ErrDisable Reason    Flaps     Time (sec)
----------------    ------    ----------
pagp-flap              3        30
dtp-flap               3        30
link-flap              5        10
Router#Router#
```

Related Commands

Command	Description
errdisable detect cause	Enables the error-disable detection.

show errdisable recovery

To display the information about the error-disable recovery timer, use the **show errdisable recovery** command.

show errdisable recovery

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 information about the error-disable recovery timer:

```
Router# show errdisable recovery
ErrDisable Reason    Timer Status
-----------------    -------------
udld                 Enabled
bpduguard            Enabled
rootguard            Enabled
pagp-flap            Enabled
dtp-flap             Enabled
link-flap            Enabled

Timer interval:300 seconds

Interfaces that will be enabled at the next timeout:

Interface    Errdisable reason    Time left(sec)
---------    -----------------    --------------
Fa9/4        link-flap                 279
```

Related Commands

Command	Description
errdisable recovery	Configures the recovery mechanism variables.
show interfaces status	Displays the interface status or a list of interfaces in an error-disabled state on LAN ports only.

show etherchannel

To display the EtherChannel information for a channel, use the **show etherchannel** command.

show etherchannel [*channel-group*] {**port-channel** | **brief** | **detail** | **summary** | **port** | **load-balance** | **protocol**}

Syntax Description

channel-group	(Optional) Number of the channel group; valid values are a maximum of 64 values from 1 to 282.
port-channel	Displays the port-channel information.
brief	Displays a summary of EtherChannel information.
detail	Displays the detailed EtherChannel information.
summary	Displays a one-line summary per channel group.
port	Displays the EtherChannel port information.
load-balance	Displays load-balance information.
protocol	Displays the enabled protocol.

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 do not specify a *channel-group*, all channel groups are displayed.

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

In the output, the Passive port list field is displayed for Layer 3 port channels only. This field means that the physical interface, which is still not up, is configured to be in the channel group (and indirectly is the only port channel in the channel group).

In the **show etherchannel protocol** output, if the interface is configured as part of the channel in mode ON, the command displays Protocol: - (Mode ON).

In the output of the **show etherchannel summary** command, the following guidelines apply:

* In the column that displays the protocol that is used for the channel, if the channel mode is ON, a hyphen (-) is displayed.

* Multiple aggregators are supported for LACP. For example, if two different bundles are created, Po1 indicates the primary aggregator, and Po1A and Po1B indicate the secondary aggregators.

In the output of the **show etherchannel load-balance** command, the following guidelines apply:

- For EtherChannel load balancing of IPv6 traffic, if the traffic is bridged onto an EtherChannel (for example, it is a Layer 2 channel and traffic in the same VLAN is bridged across it), the traffic is always load balanced by the IPv6 addresses or either src, dest, or src-dest, depending on the configuration. For this reason, the switch ignores the MAC/IP/ports for bridged IPv6 traffic. If you configure src-dst-mac, the src-dst-ip(v6) address is used. If you configure src-mac, the src-ip(v6) address is used.

- IPv6 traffic that is routed over a Layer 2 or a Layer 3 channel is load balanced based on MAC addresses or IPv6 addresses, depending on the configuration. The MAC/IP and the src/dst/src-dst are supported, but load balancing that is based on Layer 4 ports is not supported. If you use the **port** keyword, the IPv6 addresses, src, dst, or src-dst are used.

Examples

This example shows how to display the port-channel information for a specific group:

```
Router# show etherchannel 12 port-channel
Group: 12
----------
              Port-channels in the group:
              ---------------------
Port-channel: Po1
------------

Age of the Port-channel   = 143h:01m:12s
Logical slot/port   = 14/1           Number of ports = 2
GC                  = -              HotStandBy port = null
Port state          = Port-channel Ag-Inuse
Protocol            = LACP

Ports in the Port-channel:

Index   Load   Port    EC state
------+------+------+------------
  0     55     Fa4/1    active
  1     AA     Fa4/2    active

Time since last port bundled:    16h:28m:58s    Fa4/1
Time since last port Un-bundled: 16h:29m:00s    Fa4/4
Router#
```

This example shows how to display the load-balancing information:

```
Router# show etherchannel load-balance
EtherChannel Load-Balancing Configuration:
        dst-mac
        mpls label-ip
EtherChannel Load-Balancing Addresses Used Per-Protocol:
Non-IP: Destination MAC address
  IPv4: Destination MAC address
  IPv6: Destination MAC address (routed packets)
        Destination IP address (bridged packets)
  MPLS: Label or IP
Router#
```

This example shows how to display a summary of information for a specific group:

```
Router# show etherchannel 1 brief
Group: 1
----------
Group state = L2
Ports: 4   Maxports = 8
Port-channels: 1 Max Port-channels = 1
Protocol: LACP
Router#
```

This example shows how to display the detailed information for a specific group:

```
Router# show etherchannel 12 detail
Group state = L2
Ports: 1   Maxports = 8
Port-channels: 1 Max Port-channels = 1
Protocol:   PAgP
             Ports in the group:
             -------------------
Port: Fa5/2
-----------

Port state    = Down Not-in-Bndl
Channel group = 12          Mode = Desirable-Sl    Gcchange = 0
Port-channel  = null        GC   = 0x00000000         Pseudo port-channel = Po1
2
Port index    = 0           Load = 0x00       Protocol =   PAgP

Flags:  S - Device is sending Slow LACPDUs F - Device is sending fast LACPDUs
        A - Device is in active mode        P - Device is in passive mode

Local information:
                        LACP Port    Admin    Oper    Port    Port
Port        Flags   State    Priority    Key     Key     Number  State
Fa4/1       SA      bndl     32768        100     100     0xc1    0x75

Partner's information:

        Partner                  Partner              Partner
Port    System ID               Port Number    Age    Flags
Fa4/1   8000,00b0.c23e.d861     0x81           14s     SP

        LACP Partner    Partner     Partner
        Port Priority   Oper Key    Port State
        32768           128         0x81

Age of the port in the current state: 16h:27m:42s

             Port-channels in the group:
             ---------------------
Port-channel: Po12
-----------

Age of the Port-channel  = 04d:02h:52m:26s
Logical slot/port   = 14/1          Number of ports = 0
GC                  = 0x00000000     HotStandBy port = null
Port state          = Port-channel Ag-Not-Inuse
Protocol            =   PAgP

Router#
```

This example shows how to display a one-line summary per channel group:

```
Router# show etherchannel summary
Flags:  D - down         P - in port-channel
        I - stand-alone s - suspended
        H - Hot-standby (LACP only)
        R - Layer3       S - Layer2
        U - in use       f - failed to allocate aggregator
Number of channel-groups in use: 2
Number of aggregators:          2

Group   Port-channel  Protocol    Ports
------+-------------+-----------+-------------------------------------------------
12      Po12(SD)        PAgP      Fa5/2(D)
24      Po24(RD)        -
Router#
```

This example shows how to display the information about the EtherChannel port for a specific group:

```
Router# show etherchannel 1 port
              Channel-group listing:
              ----------------------
Group: 1
----------
              Ports in the group:
              -------------------
Port: Fa5/4
------------
Port state     = EC-Enbld Down Not-in-Bndl Usr-Config
Channel group = 1           Mode = Desirable     Gcchange = 0
Port-channel  = null        GC   = 0x00000000    Psudo-agport = Po1
Port index    = 0           Load = 0x00          Protocol =   LACP

Flags:  S - Device is sending Slow LACPDUs F - Device is sending fast LACPDUs
        A - Device is in active mode       P - Device is in passive mode

Local information:
                           LACP Port    Admin    Oper    Port    Port
Port        Flags   State  Priority     Key      Key     Number  State
Fa5/4       SA      bndl   32768        100      100     0xc1    0x75

Partner's information:

        Partner                 Partner            Partner
Port    System ID               Port Number   Age  Flags
Fa5/4   8000,00b0.c23e.d861     0x81          14s  SP

        LACP Partner    Partner    Partner
        Port Priority   Oper Key   Port State
        32768           128        0x81

Age of the port in the current state: 04d:02h:57m:38s
Router#
```

This example shows how to display the protocol that was enabled:

```
Router# show etherchannel protocol
                Channel-group listing:
                ----------------------
Group: 12
----------
Protocol:  PAgP

Group: 24
----------
Protocol:   -  (Mode ON)
Router#
```

Related Commands	Command	Description
	channel-group	Assigns and configures an EtherChannel interface to an EtherChannel group.
	channel-protocol	Sets the protocol that is used on an interface to manage channeling.
	interface port-channel	Creates a port-channel virtual interface and enters interface configuration mode.

show fm features

To display the information about the feature manager, use the **show fm features** command.

show fm features

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 information about the feature manager:

```
Router> show fm features
Designated PISA:1 Non-designated PISA:1

Redundancy Status:designated
Interface:FastEthernet2/10 IP is enabled
  hw[EGRESS] = 1, hw[INGRESS] = 1
  hw_force_default[EGRESS] = 0, hw_force_default[INGRESS] = 0
  mcast = 0
  priority = 2
  reflexive = 0
  inbound label:1
        protocol:ip
          feature #:1
          feature id:FM_IP_ACCESS
          ACL:106
  outbound label:2
        protocol:ip
          feature #:1
          feature id:FM_IP_ACCESS
          ACL:106
Interface:FastEthernet2/26 IP is enabled
  hw[EGRESS] = 1, hw[INGRESS] = 0
  hw_force_default[EGRESS] = 0, hw_force_default[INGRESS] = 1
  mcast = 0
  priority = 2
  reflexive = 0
  inbound label:24
        protocol:ip
          feature #:1
          feature id:FM_IP_ACCESS
          ACL:113
  outbound label:3
        protocol:ip
          feature #:1                                            feature
```

```
id:FM_IP_WCCP
        Service ID:0
        Service Type:0
Interface:Vlan55 IP is enabled
  hw[EGRESS] = 1, hw[INGRESS] = 1
  hw_force_default[EGRESS] = 0, hw_force_default[INGRESS] = 0
  mcast = 0
  priority = 2
  reflexive = 0
  inbound label:4
        protocol:ip
          feature #:1
          feature id:FM_IP_ACCESS
          ACL:111
Interface:Vlan101 IP is enabled
  hw[EGRESS] = 1, hw[INGRESS] = 1
  hw_force_default[EGRESS] = 0, hw_force_default[INGRESS] = 0
  mcast = 0
  priority = 2
  reflexive = 0
  inbound label:5
        protocol:ip
          feature #:1
          feature id:FM_IP_ACCESS
          ACL:101
  outbound label:6
        protocol:ip
          feature #:1
          feature id:FM_IP_ACCESS
          ACL:101
Router>
```

This example shows how to display the lines of feature manager information starting with the line that begins with Redundancy:

```
Router> show fm features | begin Redundancy
Redundancy Status: designated
Router>
```

Catalyst Supervisor Engine 32 PISA Cisco IOS Software Command Reference

show fm inband-counters

To display the number of inband packets that are sent by the PISA for SLB and WCCP, use the **show fm inband-counters** command.

show fm inband-counters

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   The output display for the **show fm inband-counters** command includes the number of SLB inband packets that are sent by the PISA and the number of WCCP inband packets that are sent by the PISA.

If CBAC is configured, the command output displays the number of packets that are sent for CBAC by the PISA.

Examples   This example shows how to display the number of SLB and WCCP inband packets that are sent by the PISA:

```
Router# show fm inband-counters
     Inband Packets Sent
 Slot  WCCP        SLB
 1     0           0
 2     0           0
 3     0           0
 4     0           0
 5     0           0
 6     0           0
 7     0           0
 8     0           0
 9     0           0
 10    0           0
 11    0           0
 12    0           0
 13    0           0
Router#
```

show fm insp

To display the list and status of the ACLs and ports on which CBAC is configured, use the **show fm insp** command.

show fm insp [**detail**]

Syntax Description		
detail	(Optional) Displays all of the flow 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   If you can configure a VACL on the port before you configure CBAC, the status displayed is INACTIVE; otherwise, it is ACTIVE. If PFC resources are exhausted, the command displays BRIDGE and is followed by the number of failed currently active NetFlow requests that have been sent to the PISA for processing.

The **show fm insp** command output includes this information:

- interface:—Interface on which the IP inspect feature is enabled
- (direction)—Direction in which the IP inspect feature is enabled (IN or OUT)
- acl name:—Name that is used to identify packets that are being inspected
- status:—(ACTIVE or INACTIVE) displays if HW-assist is provided for this interface+direction (ACTIVE=hardware assisted or INACTIVE)

The optional **detail** keyword displays the ACEs that are part of the ACL that is used for IP inspect on the given interface direction.

Examples   This example shows how to display the list and status of CBAC-configured ACLs and ports:

```
Router> show fm insp
        interface:Vlan305(in) status :ACTIVE
        acl name:deny
          interfaces:
            Vlan305(out):status ACTIVE
```

show fm interface

To display the detailed information about the feature manager on a per-interface basis, use the **show fm interface** command.

> **show fm interface** {{*interface interface-number*} | {**null** *interface-number*} | {**port-channel** *number*} | {**vlan** *vlan-id*}}

Syntax Description

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.
null *interface-number*	Specifies the null interface; the valid value is **0**.
port-channel *number*	Specifies the channel interface; valid values are a maximum of 64 values ranging from 1 to 282.
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)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.

Examples   This example shows how to display the detailed information about the feature manager on a specified interface:

```
Router# show fm interface fastethernet 2/26
Interface:FastEthernet2/26 IP is enabled
  hw[EGRESS] = 1, hw[INGRESS] = 0
  hw_force_default[EGRESS] = 0, hw_force_default[INGRESS] = 1
  mcast = 0
  priority = 2
  reflexive = 0
  inbound label:24
```

```
            protocol:ip
              feature #:1
              feature id:FM_IP_ACCESS
              ACL:113
                      vmr IP value #1:0, 0, 0, 0, 0, 0, 0, 6 - 1
                      vmr IP mask #1:0, 0, FFFF, FFFF, 0, 0, 0, FF
                      vmr IP value #2:642D4122, 0, 0, 0, 1, 0, 0, 6 - 1
                      vmr IP mask #2:FFFFFFFF, 0, 0, 0, 1, 0, 0, FF
                      vmr IP value #3:0, 64020302, 0, 0, 6, 0, 0, 6 - 1
                      vmr IP mask #3:0, FFFFFFFF, 0, 0, 6, 0, 0, FF
                      vmr IP value #4:0, 64020302, 0, 0, A, 0, 0, 6 - 1
                      vmr IP mask #4:0, FFFFFFFF, 0, 0, A, 0, 0, FF
                      vmr IP value #5:0, 64020302, 0, 0, 12, 0, 0, 6 - 1
                      vmr IP mask #5:0, FFFFFFFF, 0, 0, 12, 0, 0, FF
                      vmr IP value #6:0, 0, 0, 0, 0, 0, 0, 0 - 2
                      vmr IP mask #6:0, 0, 0, 0, 0, 0, 0, 0
  outbound label:3
        protocol:ip
            feature #:1
            feature id:FM_IP_WCCP
            Service ID:0
            Service Type:0
Router#
```

This example shows how to display the detailed information about the feature manager on a specific VLAN:

```
Router# show fm interface vlan 21
Interface: Vlan21 IP is disabled
hw_state[INGRESS] = not reduced, hw_state[EGRESS] = not reduced
mcast = 0
priority = 0
flags = 0x0
inbound label: 8
Feature IP_VACL:
----------------------------------------------------------------------------
FM_FEATURE_IP_VACL_INGRESS i/f: Vl21 map name: test
============================================================================
--------------------------------------------------------------
IP Seq. No: 10 Seq. Result : VACL_ACTION_FORWARD_CAPTURE
--------------------------------------------------------------
DPort - Destination Port SPort - Source Port Pro - Protocol
X - XTAG TOS - TOS Value Res - VMR Result
RFM - R-Recirc. Flag MRTNP - M-Multicast Flag R - Reflexive flag
- F-Fragment flag - T-Tcp Control N - Non-cachable
- M-More Fragments - P-Mask Priority(H-High, L-Low)
Adj. - Adj. Index T - M(Mask)/V(Value) FM - Flow Mask
NULL - Null FM SAO - Source Only FM DAO - Dest. Only FM
SADA - Sour.& Dest. Only VSADA - Vlan SADA Only FF - Full Flow
VFF - Vlan Full Flow F-VFF - Either FF or VFF A-VSD - Atleast VSADA
A-FF - Atleast FF A-VFF - Atleast VFF A-SON - Atleast SAO
A-DON - Atleast DAO A-SD - Atleast SADA SHORT - Shortest
A-SFF - Any short than FF A-EFF - Any except FF A-EVFF- Any except VFF
A-LVFF- Any less than VFF ERR - Flowmask Error
+----+-+--------------+--------------+-----+-----+---+---+-+---+-----+----+------+
|Indx|T| Dest Ip Addr | Source Ip Addr|DPort|SPort|Pro|RFM|X|ToS|MRTNP|Adj.| FM |
+----+-+--------------+--------------+-----+-----+---+---+-+---+-----+----+------+
1 V 22.2.2.2 21.1.1.1 0 0 0 --- 0 0 ----L ---- SHORT
M 255.255.255.255 255.255.255.255 0 0 0 000 0 0
TM_PERMIT_RESULT
2 V 32.2.2.2 31.1.1.1 0 0 0 --- 0 0 ----L ---- SHORT
M 255.255.255.255 255.255.255.255 0 0 0 000 0 0
TM_PERMIT_RESULT
3 V 0.0.0.0 0.0.0.0 0 0 0 --- 0 0 ----L ---- SHORT
```

```
M 0.0.0.0 0.0.0.0 0 0 0 000 0 0
TM_L3_DENY_RESULT


------------------------------------------------------------
IP Seq. No: 65536 Seq. Result : VACL_ACTION_DROP
------------------------------------------------------------
+----+-+--------------+--------------+-----+-----+---+---+-+---+-----+----+------+
|Indx|T| Dest Ip Addr | Source Ip Addr|DPort|SPort|Pro|RFM|X|ToS|MRTNP|Adj.| FM |
+----+-+--------------+--------------+-----+-----+---+---+-+---+-----+----+------+
1 V 0.0.0.0 0.0.0.0 0 0 0 --- 0 0 ----L ---- SHORT
M 0.0.0.0 0.0.0.0 0 0 0 000 0 0
TM_PERMIT_RESULT
Router#
```

show fm ipv6 traffic-filter

To display the IPv6 information, use the **show fm ipv6 traffic-filter** command.

show fm ipv6 traffic-filter {**all** | {**interface** *interface interface-number*}}

Syntax Description

all	Displays IPv6 traffic filter information for all interfaces.
interface *interface*	Displays IPv6 traffic filter information for the specifed interface; 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.

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.

Examples

This example shows how to display the IPv6 information for a specific interface:

```
Router# show fm ipv6 traffic-filter interface vlan 50
-------------------------------------------------------------------------
FM_FEATURE_IPV6_ACG_INGRESS Name:testipv6 i/f: Vlan50
=========================================================================
DPort - Destination Port SPort - Source Port Pro - Protocol
X - XTAG TOS - TOS Value Res - VMR Result
RFM - R-Recirc. Flag MRTNP - M-Multicast Flag R - Reflexive flag
- F-Fragment flag - T-Tcp Control N - Non-cachable
- M-More Fragments - P-Mask Priority(H-High, L-Low)
Adj. - Adj. Index T - M(Mask)/V(Value) FM - Flow Mask
NULL - Null FM SAO - Source Only FM DAO - Dest. Only FM
SADA - Sour.& Dest. Only VSADA - Vlan SADA Only FF - Full Flow
VFF - Vlan Full Flow F-VFF - Either FF or VFF A-VSD - Atleast VSADA
A-FF - Atleast FF A-VFF - Atleast VFF A-SON - Atleast SAO
A-DON - Atleast DAO A-SD - Atleast SADA SHORT - Shortest
A-SFF - Any short than FF A-EFF - Any except FF A-EVFF- Any except VFF
A-LVFF- Any less than VFF ERR - Flowmask Error
```

```
+----+-+------------------------------------+--------------------------------------+
---+---+-+-----+----+------+
|Indx|T| Dest IPv6 Addr | Source IPv6
Addr |Pro|RFM|X|MRTNP|Adj.| FM |
+----+-+------------------------------------+--------------------------------------+
---+--+-+-----+----+------+
1 V 0:200E::
200D::1 0 -F- - ----L ---- Shorte
M 0:FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 0 1
TM_SOFT_BRIDGE_RESULT
2 V 0:200E::
200D::1 17 --- - ----L ---- Shorte
M 0:FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 255 0
TM_PERMIT_RESULT
3 V 200E::
200D::1 0 -F- - ----L ---- Shorte
M FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 0 1
TM_SOFT_BRIDGE_RESULT
4 V 200E::
200D::1 17 --- - ----L ---- Shorte
M FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 255 0
TM_PERMIT_RESULT
5 V
:: :: 0 -F- - ----L ---- Shorte
M
:: :: 0 1
TM_SOFT_BRIDGE_RESULT
6 V
:: :: 0 -F- - ----L ---- Shorte
M
:: :: 0 1
TM_SOFT_BRIDGE_RESULT
7 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
8 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
9 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
10 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
11 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
12 V
:: :: 58 --- - ----L ---- Shorte
M
```

```
:: :: 255 0
TM_PERMIT_RESULT
13 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
14 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
15 V
:: :: 0 --- - ----L ---- Shorte
M
:: :: 0 0
TM_L3_DENY_RESULT
Router#
```

This example shows how to display the IPv6 information for all interfaces:

```
Router# show fm ipv6 traffic-filter all
--------------------------------------------------------------------------------
FM_FEATURE_IPV6_ACG_INGRESS Name:testipv6 i/f: Vlan50
================================================================================
DPort - Destination Port SPort - Source Port Pro - Protocol
X - XTAG TOS - TOS Value Res - VMR Result
RFM - R-Recirc. Flag MRTNP - M-Multicast Flag R - Reflexive flag
- F-Fragment flag - T-Tcp Control N - Non-cachable
- M-More Fragments - P-Mask Priority(H-High, L-Low)
Adj. - Adj. Index T - M(Mask)/V(Value) FM - Flow Mask
NULL - Null FM SAO - Source Only FM DAO - Dest. Only FM
SADA - Sour.& Dest. Only VSADA - Vlan SADA Only FF - Full Flow
VFF - Vlan Full Flow F-VFF - Either FF or VFF A-VSD - Atleast VSADA
A-FF - Atleast FF A-VFF - Atleast VFF A-SON - Atleast SAO
A-DON - Atleast DAO A-SD - Atleast SADA SHORT - Shortest
A-SFF - Any short than FF A-EFF - Any except FF A-EVFF- Any except VFF
A-LVFF- Any less than VFF ERR - Flowmask Error
+----+-+------------------------------------+------------------------------------+
---+---+-+-----+----+------+
|Indx|T| Dest IPv6 Addr | Source IPv6
Addr |Pro|RFM|X|MRTNP|Adj.| FM |
+----+-+------------------------------------+------------------------------------+
---+---+-+-----+----+------+
1 V 0:200E::
200D::1 0 -F- - ----L ---- Shorte
M 0:FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 0 1
TM_SOFT_BRIDGE_RESULT
2 V 0:200E::
200D::1 17 --- - ----L ---- Shorte
M 0:FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 255 0
TM_PERMIT_RESULT
3 V 200E::
200D::1 0 -F- - ----L ---- Shorte
M FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 0 1
TM_SOFT_BRIDGE_RESULT
4 V 200E::
200D::1 17 --- - ----L ---- Shorte
M FFFF:FFFF:FFFF:FFFF::
FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF 255 0
TM_PERMIT_RESULT
```

```
5 V
:: :: 0 -F- - ----L ---- Shorte
M
:: :: 0 1
TM_SOFT_BRIDGE_RESULT
6 V
:: :: 0 -F- - ----L ---- Shorte
M
:: :: 0 1
TM_SOFT_BRIDGE_RESULT
7 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
8 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
9 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
TM_PERMIT_RESULT
10 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
13 V
:: :: 58 --- - ----L ---- Shorte
M
:: :: 255 0
.
. Output is truncated
.
Interface(s) using this IPv6 Ingress Traffic Filter:
Vl150,
```

show fm nat netflow data

To display the information about the NAT-related NetFlow data, use the **show fm nat netflow data** command.

show fm nat netflow data

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 information about the NAT-related NetFlow data:

```
Router> show fm nat netflow data
FM Pattern with stat push disabled: 1
Default/TCP/UDP Timeouts:
Def s/w timeout: 86400 h/w timeout: 300 Pattern(ingress): 4
Pattern(egress): 4 Push interval: 1333
TCP s/w timeout: 86400 h/w timeout: 300 Pattern(ingress): 4
Pattern(egress): 4 Push interval: 1333
UDP s/w timeout: 300 h/w timeout: 300 Pattern(ingress): 3
Pattern(egress): 3 Push interval: 100
Port Timeouts:
Idle timeout :3600 secs
Fin/Rst timeout :10 secs
Fin/Rst Inband packets sent per timeout :10000
Netflow mode to Zero-out Layer4 information for fragment packet lookup :
Enabled
Router>
```

show fm reflexive

To display the information about the reflexive entry for the dynamic feature manager, use the **show fm reflexive** command.

show fm reflexive

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 information about the reflexive entry for the dynamic feature manager:

```
Router# show fm reflexive
      Reflexive hash table:
       Vlan613:refacl, OUT-REF, 64060E0A, 64060D0A, 0, 0, 7, 783, 6

Router#
```

show fm summary

To display a summary of feature manager information, use the **show fm summary** command.

show fm summary

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 a summary of feature manager information:

```
Router# show fm summary
Current global ACL merge algorithm:BDD
Interface:FastEthernet2/10
  ACL merge algorithm used:
    inbound direction:  ODM
    outbound direction:BDD
  TCAM screening for features is ACTIVE outbound
  TCAM screening for features is ACTIVE inbound
Interface:FastEthernet2/26
  ACL merge algorithm used:
    inbound direction:  ODM
    outbound direction:BDD
  TCAM screening for features is ACTIVE outbound
  TCAM screening for features is INACTIVE inbound
.
.
.
Router#
```

show fm vlan

To display the information about the per-VLAN feature manager, use the **show fm vlan** command.

show fm vlan *vlan-id*

Syntax Description

vlan-id	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.

Examples   This example shows how to display the information about the per-VLAN feature manager:

```
Router# show fm vlan 1
hw[EGRESS] = 1, hw[INGRESS] = 1
hw_force_default[EGRESS] = 0, hw_force_default[INGRESS] = 0
mcast = 0
priority = 2
reflexive = 0
vacc_map : map1
inbound label: 5
merge_err: 0
protocol: ip
feature #: 1
feature id: FM_VACL
map_name: map1
seq #: 10
(only for IP_PROT) DestAddr SrcAddr Dpt Spt L4OP TOS Est prot Rslt
vmr IP value # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 6 permit
vmr IP mask # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 FF
vmr IP value # 2: 0.0.0.0 0.0.0.0 0 0 0 0 0 11 permit
vmr IP mask # 2: 0.0.0.0 0.0.0.0 0 0 0 0 0 FF
vmr IP value # 3: 0.0.0.0 0.0.0.0 0 0 0 0 0 0 deny
vmr IP mask # 3: 0.0.0.0 0.0.0.0 0 0 0 0 0 0
seq #: 65536
(only for IP_PROT) DestAddr SrcAddr Dpt Spt L4OP TOS Est prot Rslt
vmr IP value # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 0 permit
vmr IP mask # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 0
outbound label: 6
merge_err: 0
protocol: ip
feature #: 1
feature id: FM_VACL
map_name: map1
seq #: 10
(only for IP_PROT) DestAddr SrcAddr Dpt Spt L4OP TOS Est prot Rslt
vmr IP value # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 6 permit
```

Catalyst Supervisor Engine 32 PISA Cisco IOS Software Command Reference

```
        vmr IP mask  # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 FF
        vmr IP value # 2: 0.0.0.0 0.0.0.0 0 0 0 0 0 11 permit
        vmr IP mask  # 2: 0.0.0.0 0.0.0.0 0 0 0 0 0 FF
        vmr IP value # 3: 0.0.0.0 0.0.0.0 0 0 0 0 0 0 deny
        vmr IP mask  # 3: 0.0.0.0 0.0.0.0 0 0 0 0 0 0
        seq #: 65536
        (only for IP_PROT) DestAddr SrcAddr Dpt Spt L4OP TOS Est prot Rslt
        vmr IP value # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 0 permit
        vmr IP mask  # 1: 0.0.0.0 0.0.0.0 0 0 0 0 0 0
```

show icc

To display the information about the ICC counter and status, use the **show icc** command.

> **show icc** {**counters** | **status**}

Syntax Description

counters	Specifies the counter information.
status	Specifies the 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.

Examples   This example shows how to display the information about the ICC counter:

```
Router# show icc counters
total tx RPC packets to slot 1 LCP = 0
  detail by request id: (<request-id>=<number-of-packets>)
   2 =0            7 =0            8 =0            10=0
   11=0            12=0            14=0            17=0
   18=0            19=0            20=0
total rx RPC packets from slot 1 LCP = 0
  detail by request id: (<request-id>=<number-of-packets>)
   2 =5            7 =7            8 =11           10=4
   11=1            12=2            14=1            17=67
   18=7            19=159         20=29
total tx MCAST-SP packets to slot 1 LCP = 0
  detail by request id: (<request-id>=<number-of-packets>)
   6 =0            7 =0            8 =0            9 =0
   12=0            14=0
total rx MCAST-SP packets from slot 1 LCP = 0
  detail by request id: (<request-id>=<number-of-packets>)
   6 =1            7 =1            8 =1            9 =1
   12=41           14=67
total tx L3-MGR packets to slot 1 LCP = 0
  detail by request id: (<request-id>=<number-of-packets>)
   1 =0            2 =0            3 =0
total rx L3-MGR packets from slot 1 LCP = 0
  detail by request id: (<request-id>=<number-of-packets>)
   1 =1            2 =2            3 =1
Router#
```

This example shows how to display the information about the ICC status:

```
Router# show icc status
Class Name               Msgs Pending  Max Pending  Total Sent
----- ---------------- ------------  -----------  ----------
    2 RPC                         0            3         403
    3 MSC                         0            1           1
    5 L3-MGR                      0            4        4173
   13 TCAM-API                    0           10          26
Router#
```

show idprom

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

show idprom {**all** | *frutype* | **interface** *interface slot*} [**detail**]

Syntax Description

all	Displays the information for all FRU types.
frutype	Type of FRU to display information; see the "Usage Guidelines" section for valid values.
interface *interface slot*	Specifies the interface to display information; valid values are as follows: • *interface*—GigabitEthernet • *slot*—1 to 13 See the "Usage Guidelines" section for additional information.
detail	(Optional) Displays the details of the IDPROM data (verbose).

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

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

Usage Guidelines   Valid *frutypes* are as follows:

- **backplane**—No arguments.
- **clock** *number*—1 and 2.
- **earl** *slot*—See the following paragraph for valid values.
- **module** *slot*—See the following paragraph for valid values.
- **rp** *slot*—See the following paragraph for valid values.
- **power-supply**—1 and 2.
- **supervisor** *slot*—See the following paragraph for valid values.
- **vtt** *number*—1 to 3.

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

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

The optional **interface** *interface slot* keyword and arguments are supported on GBIC security-enabled interfaces only.

Examples   This example shows how to display IDPROM information for clock 1:

```
Router> show idprom clock 1
IDPROM for clock #1
  (FRU is 'Clock FRU')
  OEM String = 'Cisco Systems'
  Product Number = 'WS-C6000-CL'
  Serial Number = 'SMT03073115'
  Manufacturing Assembly Number = '73-3047-04'
  Manufacturing Assembly Revision = 'A0'
  Hardware Revision = 1.0
  Current supplied (+) or consumed (-) = 0.000A
Router>
```

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

```
Router> show idprom power-supply 1
IDPROM for power-supply #1
  (FRU is '110/220v AC power supply, 1360 watt')
  OEM String = 'Cisco Systems, Inc.'
  Product Number = 'WS-CAC-1300W'
  Serial Number = 'ACP03020001'
  Manufacturing Assembly Number = '34-0918-01'
  Manufacturing Assembly Revision = 'A0'
  Hardware Revision = 1.0
  Current supplied (+) or consumed (-) = 27.460A
Router>
```

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

```
Router# show idprom power-supply 1 detail
IDPROM for power-supply #1
IDPROM image:

  (FRU is '110/220v AC power supply, 1360 watt')

IDPROM image block #0:
  hexadecimal contents of block:
  00: AB AB 01 90 11 BE 01 00 00 02 AB 01 00 01 43 69    ..............Ci
  10: 73 63 6F 20 53 79 73 74 65 6D 73 2C 20 49 6E 63    sco Systems, Inc
  20: 2E 00 57 53 2D 43 41 43 2D 31 33 30 30 57 00 00    ..WS-CAC-1300W..
  30: 00 00 00 00 00 00 41 43 50 30 33 30 32 30 30 30    ......ACP0302000
  40: 31 00 00 00 00 00 00 00 00 00 33 34 2D 30 39 31    1.........34-091
  50: 38 2D 30 31 00 00 00 00 00 00 41 30 00 00 00 00    8-01......A0....
  60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00    ................
  70: 00 00 00 01 00 00 00 00 00 00 00 00 09 00 0C 00 03    ................
  80: 00 01 00 06 00 01 00 00 00 00 0A BA 00 00 00 00    ................

  block-signature = 0xABAB, block-version = 1,
  block-length = 144, block-checksum = 4542

  *** common-block ***
  IDPROM capacity (bytes) = 256  IDPROM block-count = 2
  FRU type = (0xAB01,1)
  OEM String = 'Cisco Systems, Inc.'
  Product Number = 'WS-CAC-1300W'
  Serial Number = 'ACP03020001'
  Manufacturing Assembly Number = '34-0918-01'
  Manufacturing Assembly Revision = 'A0'
  Hardware Revision = 1.0
```

```
    Manufacturing bits = 0x0   Engineering bits = 0x0
    SNMP OID = 9.12.3.1.6.1.0
    Power Consumption = 2746 centiamperes     RMA failure code = 0-0-0-0
    *** end of common block ***

IDPROM image block #1:
  hexadecimal contents of block:
  00: AB 01 01 14 02 5F 00 00 00 00 00 00 00 00 0A BA      ....._..........
  10: 0A BA 00 16                                          ....

  block-signature = 0xAB01, block-version = 1,
  block-length = 20, block-checksum = 607

  *** power supply block ***
  feature-bits:  00000000 00000000
  rated current at 110v:  2746     rated current at 220v:  2746    (centiamperes)
  CISCO-STACK-MIB SNMP OID = 22  *** end of power supply block ***

End of IDPROM image
Router#
```

This example shows how to display IDPROM information for the backplane:

```
Router# show idprom backplane
IDPROM for backplane #0
  (FRU is 'Catalyst 6000 9-slot backplane')
  OEM String = 'Cisco Systems'
  Product Number = 'WS-C6009'
  Serial Number = 'SCA030900JA'
  Manufacturing Assembly Number = '73-3046-04'
  Manufacturing Assembly Revision = 'A0'
  Hardware Revision = 1.0
  Current supplied (+) or consumed (-) = 0.000A
Router#
```

This example shows how to display IDPROM information from a GBIC security-enabled interface:

```
Router# show idprom interface g5/1
GBIC Serial EEPROM Contents:
Common block:
Identifier :
Connector :
Transceiver
Speed :
Media :
Technology :
Link Length :
GE Comp Codes :
SONET Comp Codes :
Encoding : 8B10B
BR, Nominal : 12x100 MHz
Length(9u) : GBIC does not support single mode fibre,
or the length information must be determined from
the transceiver technology.
Length(50u) : GBIC does not support 50 micron multi-mode fibre,
or the length information must be determined from
the transceiver technology.
Length(62.5u) : GBIC does not support 62.5 micron multi-mode fibre,
or the length information must be determined from
the transceiver technology.
Length(Copper) : GBIC does not support copper cables,
or the length information must be determined from
the transceiver technology.
Vendor Name : IBM
```

```
Vendor OUI : 0x8 0x0 0x5A
Vendor PN : IBM42P12SNY
Vendor rev : CS10
CC_BASE : 0xC6
Extended ID Fields
Options : Loss of Signal implemented TX_FAULT signal implemented
TX_D
ISABLE is implemented and disables the serial output
BR, max : 5%
BR, min : 5%
Vendor SN : 21P70420005D6
Date code : 02071001
CC_EXT : 0xCE
Vendor Specific ID Fields:
0x00: 00 00 00 70 2E DF C4 69 50 E6 54 F9 05 D4 83 A2
0x10: 4B 0E 8B 00 00 00 00 00 00 00 00 00 7D 3F D9 1E
Router#
```

show interfaces

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

show interfaces [{*interface interface-number*} | {**null** *interface-number*} | {**vlan** *vlan-id*}]

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **pos**, and **port-channel**, **atm**, and **ge-wan**.
interface-number	(Optional) 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.

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 valid values for port-channel are from 1 to 308. The port-channel values that are from 257 to 282 are internally allocated, and are supported on the CSM and the FWSM only.

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

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

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

The output of the **show interfaces GigabitEthernet** command displays an extra 4 bytes for every packet that is sent or received. This display occurs on the LAN ports on the GE-WAN module and other Catalyst 6500 series switch Gigabit Ethernet LAN modules. The extra 4 bytes are the Ethernet frame CRC in the input and output byte statistics.

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

```
Router# show interfaces GigabitEthernet3/3
GigabitEthernet3/3 is up, line protocol is up (connected)
  Hardware is C6k 1000Mb 802.3, address is 000f.2305.49c0 (bia 000f.2305.49c0)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 802.1Q Virtual LAN, Vlan ID  1., loopback not set
  Keepalive set (10 sec)
  Full-duplex, 1000Mb/s, media type is LH
  input flow-control is off, output flow-control is on
  Clock mode is auto
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:19, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
  L2 Switched: ucast: 360 pkt, 23040 bytes - mcast: 0 pkt, 0 bytes
  L3 in Switched: ucast: 0 pkt, 0 bytes - mcast: 0 pkt, 0 bytes mcast
  L3 out Switched: ucast: 0 pkt, 0 bytes mcast: 0 pkt, 0 bytes
     437 packets input, 48503 bytes, 0 no buffer
     Received 76 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     86 packets output, 25910 bytes, 0 underruns <===========
     0 output errors, 0 collisions, 0 interface resets
     0 babbles, 0 late collision, 0 deferred
     0 lost carrier, 0 no carrier, 0 PAUSE output
     0 output buffer failures, 0 output buffers swapped out
Router#
```

This example shows how to display traffic for a FlexWAN module:

```
Router# show interfaces pos 6/1/0.1
POS6/1/0.1 is up, line protocol is up
  Hardware is Packet over Sonet
  Internet address is 1.1.2.2/24
  MTU 4470 bytes, BW 155000 Kbit, DLY 100 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation FRAME-RELAY <<<+++ no packets info after this line
Arches#sh mod 6
```

```
Mod Ports Card Type                              Model              Serial No.
--- ----- ------------------------------------- ------------------ -----------
  6   0  2 port adapter FlexWAN                  WS-X6182-2PA       SAD04340JY3

Mod MAC addresses                       Hw     Fw           Sw           Status
--- ----------------------------------- ------ ------------ ------------ -------
  6  0001.6412.a234 to 0001.6412.a273   1.3    12.2(2004022 12.2(2004022 Ok

Mod Online Diag Status
--- ------------------
  6 Pass
Router#
```

show interfaces accounting

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

> **show interfaces** [{*interface interface-number*} | {**null** *interface-number*} | {**vlan** *vlan-id*}] **accounting**

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **pos**, and **port-channel**, **atm**, and **ge-wan**.
interface-number	(Optional) 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.

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

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

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 channels from 257 to 282 are internally allocated and are supported on the CSM and the FWSM only.

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

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

```
Router# show interfaces gigabitethernet5/2 accounting
GigabitEthernet5/2
Protocol Pkts In Chars In Pkts Out Chars Out
IP      50521  50521000 0        0
DEC MOP 0       0        1        129
CDP     0       0        1        592
IPv6    11      834      96       131658
Router#
```

Table 2-37 describes the fields that are shown in the example.

Table 2-37   show interfaces accounting Command Output Fields

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

show interfaces capabilities

To display the interface capabilities for a module, an interface, or all interfaces, use the **show interfaces capabilities** command.

show interfaces [*interface interface-number*] **capabilities** [{**module** *number*}]

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **pos**, **atm**, and **port-channel**, and **ge-wan**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for 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 *interface-number* argument designates the module and port number. Valid values for *interface-number* depend on the chassis and module that are used. For example, if you have a 48-port 10/100BASE-T Ethernet module that is installed in a 13-slot chassis, valid values for the slot number are from 2 to 13 and valid values for the port number are from 1 to 48.

The **port-channel** values are from 0 to 282; values from 257 to 282 are supported on the CSM and the FWSM only.

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

```
Router# show interfaces capabilities module 6
FastEthernet6/1
Dot1x: yes
Model: WS-X6248-RJ-45
Type: 10/100BaseTX
Speed: 10,100,auto
Duplex: half,full
Trunk encap. type: 802.1Q,ISL
Trunk mode: on,off,desirable,nonegotiate
Channel: yes
Broadcast suppression: percentage(0-100)
Flowcontrol: rx-(off,on),tx-(none)
Membership: static
Fast Start: yes
QOS scheduling: rx-(1q4t), tx-(2q2t)
CoS rewrite: yes
ToS rewrite: yes
Inline power: no
SPAN: source/destination
UDLD yes
Link Debounce: yes
Link Debounce Time: no
Ports on ASIC: 1-12
Port-Security: yes
Router#
```

This example shows how to display the interface capabilities for an interface:

```
Router# show interfaces fastethernet 4/1 capabilities
FastEthernet4/1
Model: WS-X6348-RJ-45
Type: 10/100BaseTX
Speed: 10,100,auto
Duplex: half,full
Trunk encap. type: 802.1Q,ISL
Trunk mode: on,off,desirable,nonegotiate
Channel: yes
Broadcast suppression: percentage(0-100)
Flowcontrol: rx-(off,on),tx-(none)
Fast Start: yes
QOS scheduling: rx-(1q4t), tx-(2q2t)
CoS rewrite: yes
ToS rewrite: yes
Inline power: no
SPAN: source/destination
```

This example shows how to display the port-channel interface capabilities:

```
Router# show interfaces port-channel 12 capabilities
Port-channel12
  Model:                NO IDPROM
  Type:                 unknown
  Speed:                10,100,1000,auto
  Duplex:               half,full
  Trunk encap. type:    802.1Q,ISL
  Trunk mode:           on,off,desirable,nonegotiate
  Channel:              yes
```

```
     Broadcast suppression: percentage(0-100)
     Flowcontrol:          rx-(off,on),tx-(none)
     Fast Start:           yes
     QOS scheduling:       rx-(1q4t), tx-(1q4t)
     CoS rewrite:          yes
     ToS rewrite:          yes
     Inline power:         no
      SPAN:                source/destination
Router#
```

show interfaces counters

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

> **show interfaces** [*interface*] **counters** [**errors** | **etherchannel** | {**module** *number*} | {**protocol** status} | {**trunk** [**module** *number*]}]

Syntax Description

interface	(Optional) Interface type; for a list of valid values, see the "Usage Guidelines" section.
errors	(Optional) Displays the interface-error counters.
etherchannel	(Optional) Displays information about the EtherChannel interface.
module *number*	(Optional) Displays the module number; see the "Usage Guidelines" section for valid values.
protocol status	(Optional) Displays the current status of the enabled protocols.
trunk	(Optional) Displays the interface-trunk counters.

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

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

When you enter the *interface*, these formats can be used:

- *card-type* {*slot*}/{*first-port*} - {*last-port*}
- *card-type* {*slot*}/{*first-port*} - {*last-port*}

You can define a single port range per command entry. If you specify a range of ports, the range must consist of the same slot and port type.

When you define a range, you must enter a white space between the first port and the hyphen (-) as follows:

```
show interfaces gigabitethernet7/1 -7 counters
```

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

Valid values for *card-type* are as follows:

- **ethernet**
- **fastethernet**
- **gigabitethernet**
- **tengigabitethernet**
- **port-channel** *interface-number*—Valid values are from 1 to 282; values from 257 to 282 are supported on the CSM and the FWSM only.

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

- If *interface* specifies a physical port, the command displays this message, "Etherchnl not enabled on this interface."
- If *interface* is omitted, the command displays the counters for all port channels (in the system) and for their associated physical ports.
- If *interface* specifies a port channel, the command displays the counters for the port channel and all of the physical ports that are associated with it. In addition, when you enter the command specifying the primary aggregator in a LACP port channel with multiple aggregators, the output includes the statistics for all of the aggregators in the port channels and for the ports that are associated with them.

Examples   This example shows how to display the error counters for a specific module:

```
Router# show interfaces counters errors module 1
Port          Align-Err       FCS-Err     Xmit-Err     Rcv-Err UnderSize
Gi1/1                 0             0            0            0         0
Gi1/2                 0             0            0            0         0

Port          Single-Col Multi-Col  Late-Col Excess-Col Carri-Sen     Runts     Giant
s
Gi1/1                 0         0         0          0         0         0         0
Gi1/2                 0         0         0          0         0         0         0
Router#
```

This example shows how to display traffic that is seen by a specific module:

```
Router# show interfaces counters module 1

Port             InOctets   InUcastPkts   InMcastPkts   InBcastPkts
Gi1/1                   0             0             0             0
Gi1/2                   0             0             0             0

Port            OutOctets  OutUcastPkts  OutMcastPkts  OutBcastPkts
Gi1/1                   0             0             0             0
Gi1/2                   0             0             0             0
Router#
```

This example shows how to display the trunk counters for a specific module:

```
Router# show interfaces counters trunk module 1

Port        TrunkFramesTx  TrunkFramesRx  WrongEncap
Gi1/1                   0              0           0
Gi1/2                   0              0           0
Router#
```

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

```
Router# show interfaces counters etherchannel
Port          InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Po1             5518            1             29              1
Fa3/48          5518            1             29              1
Po2            11897            2             54              2
Fa3/45          5878            1             27              1
Fa3/46          6019            1             27              1
Po3                0            0              0              0
Po5             6073            1             27              1
Fa3/44          6073            1             27              1
Po5A            7811            1             53              1
Fa3/43          7811            1             53              1

Port          OutOctets   OutUcastPkts   OutMcastPkts   OutBcastPkts
Po1             4333            1             24              1
Fa3/48          4333            1             24              1
Po2             9532            2             46              2
Fa3/45          4766            1             23              1
Fa3/46          4766            1             23              1
Po3                0            0              0              0
Po5            17224            1            214              1
Fa3/44         17224            1            214              1
Po5A          174426            1           2669              1
Fa3/43        174426            1           2669              1
```

This example shows how to display the counters for a specific port channel and the counters for the associated physical ports:

```
Router# show interfaces port-channel2 counters etherchannel

Port          InOctets    InUcastPkts    InMcastPkts    InBcastPkts
Po2             6007            1             31              1
Fa3/48          6007            1             31              1

Port          OutOctets   OutUcastPkts   OutMcastPkts   OutBcastPkts
Po2             4428            1             25              1
Fa3/48          4428            1             25              1
Router#
```

This example shows how to display the discard count and the level settings for each mode:

```
Router# show interfaces counters storm-control

Port       UcastSupp %    McastSupp %    BcastSupp %  TotalSuppDiscards
Fa5/1         100.0          100.0          100.0                     0
Fa5/2         100.0          100.0          100.0                     0
Fa5/3         100.0          100.0          100.0                     0
.
.
.
Router#
```

Related Commands

Command	Description
clear counters	Clears the interface counters.

show interfaces debounce

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

> **show interfaces** [{*interface interface-number*} | {**null** *interface-number*} | {**vlan** *vlan-id*}] **debounce** [**module** *num*]

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **port-channel**, **pos**, **atm**, and **ge-wan**.
interface-number	(Optional) 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; valid values are from 1 to 4094.
module *num*	(Optional) Limits the display to interfaces on the specified 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 debounce timer is not supported on the 10-Gigabit Ethernet module (WSX-6502-10GE).

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 values are from 0 to 282; values from 257 to 282 are supported on the CSM and the FWSM only.

Examples

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

```
Router# show interfaces GigabitEthernet1/1 debounce
Port   Debounce time   Value
Gi1/1   enable          100
Router#
```

Related Commands

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

show interfaces description

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

> **show interfaces** [*interface*] **description**

Syntax Description

interface	(Optional) Interface type; for a list of valid values, see the "Usage Guidelines" section.

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 *interface* value, these formats can be used:

- *card-type* {*slot*}/{*first-port*} - {*last-port*}
- *card-type* {*slot*}/{*first-port*} - {*last-port*}

You can define a single port range per command entry. If you specify a range of ports, the range must consist of the same slot and port type. When you define a range, you must enter a space before and after the hyphen (-) as follows:

```
show interfaces gigabitethernet7/1 - 7 counters broadcast
```

Possible valid values for *card-type* are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **port-channel**, **pos**, **atm**, and **ge-wan**.

The port-channel values are from 0 to 282; values from 257 to 282 are supported on the CSM and the FWSM only.

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

```
Router# show interfaces description
 Interface Status       Protocol Description
 PO0/0     admin down    down     First POS interface
 PO0/1     admin down    down
 Gi1/0     up            up       GigE to server farm
Router#
```

Related Commands

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

show interfaces flowcontrol

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

show interfaces [*interface* [*mod*]] **flowcontrol** [**module** *number*]

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **port-channel**, **pos**, **atm**, and **ge-wan**.
mod	(Optional) Module and port number.
module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for 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 *mod* argument designates the module and port number. Valid values for *mod* depend on the chassis and module that are used. For example, if you have a 48-port 10/100BASE-T Ethernet module that is installed in a 13-slot chassis, valid values for the slot number are from 1 to 13 and valid values for the port number are from 1 to 48.

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

The port-channel values are from 0 to 282; values from 257 to 282 are supported on the CSM and the FWSM only.

Examples   This example shows how to display flow-control information for all interfaces:

```
Router# show interfaces flowcontrol

Port  Send     FlowControl Receive FlowControl RxPause TxPause
      admin    oper        admin   oper
----- -------- --------    -------- --------    ------- -------
Gi1/1 desired  off         off      off         0       0
Gi1/2 desired  off         off      off         0       0
Gi3/1 on       on          on       on          0       0
.
.
.
Gi8/2 desired  off         off      off         0       0
Gi8/3 desired  off         off      off         0       0
Gi8/4 desired  off         off      off         0       0
Router#
```

This example shows how to display flow-control information for a specific interface:

```
Router# show interfaces gigabitethernet 8/2 flowcontrol
Port  Send     FlowControl Receive FlowControl RxPause TxPause
      admin    oper        admin   oper
----- -------- --------    -------- --------    ------- -------
Gi8/2 desired  off         off      off         0       0
Router#
```

Table 2-38 describes the fields that are shown in the example.

Table 2-38   show port flowcontrol Command Output Fields

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

Table 2-38   show port flowcontrol Command Output Fields (continued)

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

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

show interfaces private-vlan mapping

To display the information about the PVLAN mapping for VLAN SVIs, use the **show interfaces private-vlan mapping** command.

> **show interfaces** [*interface interface-number*] **private-vlan mapping** [**active**]

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.	
active	(Optional) Displays the active interfaces only.	

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.

Usage Guidelines This command displays SVI information only.

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

Examples This example shows how to display the information about the PVLAN mapping:

```
Router# show interfaces private-vlan mapping
Interface Secondary VLAN Type
--------- -------------- -----------------
vlan2    301            community
vlan2    302            community
Router#
```

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

show interfaces status

To display the interface status or a list of interfaces in an error-disabled state on LAN ports only, use the **show interfaces status** command.

> **show interfaces** [*interface interface-number*] **status** [**err-disabled** | **module** *number*]

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.
err-disabled	(Optional) Displays the LAN ports in an error-disabled state.
module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for 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 *interface-number* argument designates the module and port number. Valid values for *interface-number* depend on the chassis and module that are used. For example, if you have a 48-port 10/100BASE-T Ethernet module that is installed in a 13-slot chassis, valid values for the slot number are from 1 to 13 and valid values for the port number are from 1 to 48.

This command is supported on LAN ports only.

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

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

To find the packet and byte count, you can enter the **show interfaces counters** command or the **show interfaces** *interface interface-number* **status** command. The **show interfaces counters** command is the preferred command to use. In some cases, the packet and byte count of the **show interfaces** *interface interface-number* **status** command is incorrect.

Examples   This example shows how to display the status of all LAN ports:

```
Router# show interfaces status

Port    Name              Status     Vlan      Duplex Speed Type
Gi1/1                     disabled   routed     full  1000 missing
Gi1/2                     notconnect 1          full  1000 unknown (4)
Fa5/1                     disabled   routed     auto  auto 10/100BaseTX
.
.
.
Port    Name              Status     Vlan      Duplex  Speed Type
Fa5/18                    disabled   1          auto   auto  10/100BaseTX
Fa5/19                    disabled   1          auto   auto  10/100BaseTX
Gi7/1                     disabled   1          full   1000  WDM-RXONLY
Gi7/2                     disabled   1          full   1000  No Transceiver
Router#
```

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

```
Router# show interfaces fastethernet5/2 status
FastEthernet5/2
Switching path     Pkts In    Chars In   Pkts Out  Chars Out
          Processor       17       1220        20       2020
        Route cache        0          0         0          0
   Distributed cache       17       1220 206712817 2411846570
              Total        34       2440 206712837 2411848590
Router#
```

This example shows how to display the status of LAN ports in an error-disabled state:

```
Router# show interfaces status err-disabled

Port    Name              Status     Reason
Fa9/4                     notconnect link-flap

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

5d04h:%PM-SP-4-ERR_RECOVER:Attempting to recover from link-flap err-disable state on Fa9/4
Router#
```

Related Commands

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

show interfaces summary

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

> **show interfaces** [*interface interface-number*] **summary** [**vlan**]

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.
vlan	(Optional) Displays the total number of VLAN interfaces.

Command Default   This command has no default settings.

Command Modes   EXEC (>)

Command History

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

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

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

```
Router# show interfaces summary
*: interface is up
IHQ: pkts in input hold queue IQD: pkts dropped from input queue
OHQ: pkts in output hold queue OQD: pkts dropped from output queue
RXBS: rx rate (bits/sec) RXPS: rx rate (pkts/sec)
TXBS: tx rate (bits/sec) TXPS: tx rate (pkts/sec)
TRTL: throttle count
Interface IHQ IQD OHQ OQD RXBS RXPS TXBS TXPS TRTL
-------------------------------------------------------------------
* FastEthernet0/0 0 0 0 0 0 0 0 0 0
Serial0/0 0 0 0 0 0 0 0 0 0
FastEthernet0/1 0 0 0 0 0 0 0 0 0
Serial0/1 0 0 0 0 0 0 0 0 0
Router#
```

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

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

show interfaces switchport

To display the administrative and operational status of a switching (nonrouting) port, use the **show interfaces switchport** command.

show interfaces [*interface interface-number*] **switchport** [**brief**] [**module** *number*]

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.	
brief	(Optional) Displays a brief summary of information.	
module *number*	(Optional) Limits the display to interfaces on a specified module; see the "Usage Guidelines" section for 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 *interface-number* designates 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 slot 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 switch-port information using the **include** output modifier:

```
Router# show interfaces switchport | include VLAN
Name: Fa5/6
Access Mode VLAN: 200 (VLAN0200)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: ALL
.
.
.

Router#
```

This example shows how to display the configurations of two multiple VLAN access ports:

```
Router# show interfaces switchport
Name: Fa5/1
```

```
Switchport: Enabled
Administrative Mode: access
Operational Mode: access
Dot1q Ethertype: 0x8200
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: off
Access Mode VLAN: 100
Voice VLAN: 102
Trunking Native Mode VLAN: 1 (default)
Administrative private-vlan host-association: none
Administrative private-vlan mapping: 900 ((Inactive)) 901 ((Inactive))
Operational private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL

Name: Fa5/2
Switchport: Enabled
Administrative Mode: access
Operational Mode: down
Dot1q Ethertype: 0x8200
Operational Trunking Encapsulation: native
Negotiation of Trunking: Off
Access Mode VLAN: 100
Voice VLAN: 103 ((inactive))
Trunking Native Mode VLAN: 1 (default)
.
.
.
```

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

```
Router# show interfaces switchport brief module 3
Port Status Op.Mode Op.Encap Channel-id Vlan
Fa3/1 connected access native -- 1
Fa3/7 disabled -- dot1q Po26 1
Fa3/13 connected access native -- 666
Router#
```

show interfaces switchport backup

To display Flexlink pairs, use the **show interfaces switchport backup** command.

show interfaces [*interface interface-number*] **switchport backup**

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.

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* designates 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 slot 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 all Flexlink pairs:

```
Router# show interfaces switchport backup
Switch Backup Interface Pairs:
Active Interface        Backup Interface        State
------------------------------------------------------------------
FastEthernet3/1         FastEthernet4/1         Active Up/Backup Standby
FastEthernet5/1         FastEthernet5/2         Active Down/Backup Up
FastEthernet3/2         FastEthernet5/4         Active Standby/Backup Up
Po1                     Po2                     Active Down/Backup Down
Router#
```

This example shows how to display a specific Flexlink port:

```
Router# show interfaces fastethernet 4/1 switchport backup
Switch Backup Interface Pairs:
Active Interface        Backup Interface        State
---------------------------------------------------------------------
FastEthernet3/1         FastEthernet4/1         Active Up/Backup Standby
Router#
```

Related Commands	Command	Description
	switchport backup	Configures an interface as a Flexlink backup interface.

show interfaces transceiver

To display information about the optical transceivers that have DOM enabled, use the **show interfaces transceiver** command.

> **show interfaces** [*interface interface-number*] **transceiver** [**threshold violations**] [**detail** | {**module** *number*}]

Syntax Description

interface	(Optional) Interface type; possible valid values are **gigabitethernet** and **tengigabitethernet**.
interface-number	Module and port number; see the "Usage Guidelines" section for valid values.
threshold violations	(Optional) Displays information about the interface transceiver threshold violations.
detail	(Optional) Displays detailed information about the interface transceiver.
module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for valid values.

Command Default   This command has no default settings.

Command Modes   Privileged EXEC (#)

Command History

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

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

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

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

The *interface interface-number* arguments are supported on interfaces that have a transceiver that has diagnostic monitoring enabled and the transceiver is in a module that supports the reading of diagnostic monitoring information.

Examples   This example shows how to display transceiver information:

```
Router# show interfaces transceiver
If device is externally calibrated, only calibrated values are printed.
++ : high alarm, + : high warning, -  : low warning, -- : low alarm.
NA or N/A: not applicable, Tx: transmit, Rx: receive.
mA: milliamperes, dBm: decibels (milliwatts).
```

```
                                                Optical    Optical
          Temperature  Voltage   Current   Tx Power   Rx Power
Port      (Celsius)    (Volts)   (mA)      (dBm)      (dBm)
-------   -----------  -------   --------  --------   --------
Gi1/1      40.6        5.09       0.4       -25.2      N/A
Gi2/1      35.5        5.05       0.1       -29.2      N/A
Gi2/2      49.5        3.30       0.0        7.1       -18.7
Router#
```

This example shows how to display detailed transceiver information:

```
Router# show interfaces transceiver detail
mA: milliamperes, dBm: decibels (milliwatts), NA or N/A: not applicable.
++ : high alarm, +  : high warning, -  : low warning, -- : low alarm.
A2D readouts (if they differ), are reported in parentheses.
The threshold values are calibrated.

                        High Alarm   High Warn   Low Warn   Low Alarm
          Temperature   Threshold    Threshold   Threshold  Threshold
Port      (Celsius)     (Celsius)    (Celsius)   (Celsius)  (Celsius)
-------   ------------- ----------   ---------   ---------  ---------
Gi1/1      48.1          100.0        100.0        0.0        0.0
Gi1/2      34.9          100.0        100.0        0.0        0.0
Gi2/1      43.5           70.0         60.0        5.0        0.0
Gi2/2      39.1           70.0         60.0        5.0        0.0

                        High Alarm   High Warn   Low Warn   Low Alarm
          Voltage       Threshold    Threshold   Threshold  Threshold
Port      (Volts)       (Volts)      (Volts)     (Volts)    (Volts)
-------   ------------- ----------   ---------   ---------  ---------
Gi1/1      3.30           6.50         6.50        N/A        N/A
Gi1/2      3.30           6.50         6.50        N/A        N/A
Gi2/1      5.03           5.50         5.25        4.75       4.50
Gi2/2      5.02           5.50         5.25        4.75       4.50

                        High Alarm   High Warn   Low Warn   Low Alarm
          Current       Threshold    Threshold   Threshold  Threshold
Port      (milliamperes) (mA)        (mA)        (mA)       (mA)
-------   ------------- ----------   ---------   ---------  ---------
Gi1/1      0.0           130.0        130.0        N/A        N/A
Gi1/2      1.7           130.0        130.0        N/A        N/A
Gi2/1     50.6        +   60.0         40.0        10.0       5.0
Gi2/2     25.8            60.0         40.0        10.0       5.0

          Optical       High Alarm   High Warn   Low Warn   Low Alarm
          Transmit Power Threshold   Threshold   Threshold  Threshold
Port      (dBm)         (dBm)        (dBm)       (dBm)      (dBm)
-------   ------------- ----------   ---------   ---------  ---------
Gi1/1      8.1       ++    8.1          8.1        N/A        N/A
Gi1/2     -9.8             8.1          8.1        N/A        N/A
Gi2/1    -16.7       --    3.4          3.2       -0.3       -0.5
Gi2/2      0.8             3.4          3.2       -0.3       -0.5

          Optical       High Alarm   High Warn   Low Warn   Low Alarm
          Receive Power  Threshold   Threshold   Threshold  Threshold
Port      (dBm)         (dBm)        (dBm)       (dBm)      (dBm)
-------   ------------- ----------   ---------   ---------  ---------
Gi1/1      N/A            8.1          8.1        N/A        N/A
Gi1/2    -30.9            8.1          8.1        N/A        N/A
Gi2/1      N/A            5.9         -6.7       -28.5      -28.5
Gi2/2      N/A            5.9         -6.7       -28.5      -28.5
Router#
```

This example shows how to display the threshold violations for all the transceivers on a Catalyst 6500 series switch:

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

                               Time since Last Known
               Time in slot    Threshold Violation     Type(s) of Last Known
        Port   (DDDD:HH:MM:SS) (DDDD:HH:MM:SS)          Threshold Violation(s)
        ------- --------------- ---------------------- ----------------------
        Gi1/1   0000:00:03:41   Not applicable          Not applicable
        Gi2/1   0000:00:03:40   0000:00:00:30           Tx bias high warning
                                                         50.5 mA >  40.0 mA
                                0000:00:00:30           Tx power low alarm
                                                        -17.0 dBm <  -0.5 dBm
        Gi2/2   0000:00:03:40   Not applicable          Not applicable
Router#
```

This example shows how to display the threshold violations for all transceivers on a specific module:

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

                               Time since Last Known
               Time in slot    Threshold Violation     Type(s) of Last Known
        Port   (DDDD:HH:MM:SS) (DDDD:HH:MM:SS)          Threshold Violation
        ------- -------------- ---------------------- ----------------------
        Gi2/1   0000:00:03:40   0000:00:00:30           Tx bias high warning
                                                         50.5 mA >  40.0 mA
                                0000:00:00:30           Tx power low alarm
                                                        -17.0 dBm <  -0.5 dBm
        Gi2/2   0000:00:03:40   Not applicable          Not applicable
Router#
```

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

```
Router# show interfaces Gi2/1 transceiver threshold violations
        Rx: Receive, Tx: Transmit.
        DDDD: days, HH: hours, MM: minutes, SS: seconds

                               Time since Last Known
               Time in slot    Threshold Violation     Type(s) of Last Known
        Port   (DDDD:HH:MM:SS) (DDDD:HH:MM:SS)          Threshold Violation(s)
        ------- --------------- ---------------------- ----------------------
        Gi2/1   0000:00:03:40   0000:00:00:30           Tx bias high warning
                                                         50.5 mA >  40.0 mA
                                0000:00:00:30           Tx power low alarm
                                                        -17.0 dBm <  -0.5 dBm
Router#
```

show interfaces trunk

To display the interface-trunk information, use the **show interfaces trunk** command.

show interfaces [*interface interface-number*] **trunk** [**module** *number*]

Syntax Description		
interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **pos**, **atm**, and **ge-wan**.
interface-number	(Optional) Module and port number; see the "Usage Guidelines" section for valid values.
module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for 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   If you do not specify a keyword, only information for trunking ports is displayed.

The *interface-number* designates 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 slot number are from 1 to 13 and valid values for the port number are from 1 to 48.

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

Examples   This example shows how to display the interface-trunk information for module 5:

```
Router# show interfaces trunk module 5

Port      Mode         Encapsulation  Status       Native vlan
Fa5/1     routed       negotiate      routed       1
Fa5/2     routed       negotiate      routed       1
Fa5/3     routed       negotiate      routed       1
Fa5/4     routed       negotiate      routed       1
Fa5/5     routed       negotiate      routed       1
Fa5/6     off          negotiate      not-trunking 10
Fa5/7     off          negotiate      not-trunking 10
Fa5/8     off          negotiate      not-trunking 1
Fa5/9     desirable    n-isl          trunking     1
```

```
Fa5/10    desirable    negotiate    not-trunking  1
Fa5/11    routed       negotiate    routed        1
Fa5/12    routed       negotiate    routed        1

 .
 .
 .
Fa5/48    routed       negotiate    routed        1

Port      Vlans allowed on trunk
Fa5/1     none
Fa5/2     none
Fa5/3     none
Fa5/4     none
Fa5/5     none
Fa5/6     none
Fa5/7     none
Fa5/8     200
Fa5/9     1-1005
Fa5/10    none
Fa5/11    none
Fa5/12    none

 .
 .
 .

Fa5/48    none

Port      Vlans allowed and active in management domain
Fa5/1     none
Fa5/2     none
Fa5/3     none
Fa5/4     none
Fa5/5     none
Fa5/6     none
Fa5/7     none
Fa5/8     200
Fa5/9     1-6,10,20,50,100,152,200,300,303-305,349-351,400,500,521,524,570,801-8
02,850,917,999,1002-1005
Fa5/10    none
Fa5/11    none
Fa5/12    none

 .
 .
 .

Fa5/48    none

Port      Vlans in spanning tree forwarding state and not pruned
Fa5/1     none
Fa5/2     none
Fa5/3     none
Fa5/4     none
Fa5/5     none
Fa5/6     none
Fa5/7     none
Fa5/8     200
Fa5/9     1-6,10,20,50,100,152,200,300,303-305,349-351,400,500,521,524,570,801-8
02,850,917,999,1002-1005
Fa5/10    none
Fa5/11    none
```

```
                   .
                   .
                   .

          Fa5/48    none
          Router#
```

This example shows how to display the trunking information for active trunking ports:

```
Router# show interfaces trunk

Port      Mode          Encapsulation  Status       Native vlan
Fa5/9     desirable     n-isl          trunking     1

Port      Vlans allowed on trunk
Fa5/9     1-1005

Port      Vlans allowed and active in management domain
Fa5/9     1-6,10,20,50,100,152,200,300,303-305,349-351,400,500,521,524,570,801-8
02,850,917,999,1002-1005

Port      Vlans in spanning tree forwarding state and not pruned
Fa5/9     1-6,10,20,50,100,152,200,300,303-305,349-351,400,500,521,524,570,801-8
02,850,917,999,1002-1005
Router#
```

show interfaces unidirectional

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

> **show interfaces** [*interface interface-number*] **unidirectional** [**module** *number*]

Syntax Description		
interface	(Optional) Interface type; possible valid values are **gigabitethernet** and **tengigabitethernet**.	
interface-number	(Optional) Module and port number; see the "Usage Guidelines" section for valid values.	
module *number*	(Optional) Specifies the module number; see the "Usage Guidelines" section for 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   If you do not specify a keyword, only information for trunking ports is displayed.

The *interface-number* designates 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 slot number are from 2 to 13 and valid values for the port number are from 1 to 48.

The **module** *number* keyword and argument designate the module number and limit the display to interfaces on the module. Valid values depend on the chassis that is used. For example, if you have a 13-slot chassis, valid values for the module number are from 2 to 13.

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

```
Router# show interfaces gigabitethernet5/2 unidirectional
Unidirectional configuration mode: send only
Unidirectional operational mode: receive only
CDP neighbour unidirectional configuration mode: off
Router#
```

Related Commands

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

show interfaces vlan mapping

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

show interfaces [*interface interface-number*] **vlan mapping**

Syntax Description

interface	(Optional) Interface type; possible valid values are **ethernet**, **fastethernet**, **gigabitethernet**, **tengigabitethernet**, **vlan**, **pos**, **atm**, and **ge-wan**.
interface-number	Module and port number; see the "Usage Guidelines" section for 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 *interface-number* designates the module and port number or the VLAN 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 slot number are from 1 to 13 and valid values for the port number are from 1 to 48.

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

```
Router# show interfaces gigabitethernet5/2 vlan mapping
State: enabled
Original VLAN Translated VLAN
------------- ---------------
  1649          755
Router#
```

Related Commands

Command	Description
show vlan mapping	Registers a mapping of an 802.1Q VLAN to an ISL VLAN.
switchport vlan mapping enable	Enables VLAN mapping per switch port.

show ip arp inspection

To display the status of DAI for a specific range of VLANs, use the **show ip arp inspection** command.

show ip arp inspection [{**interfaces** [*interface-name*]} | {**statistics** [**vlan** *vlan-range*]}]

Syntax Description

interfaces *interface-name*	(Optional) Displays the trust state and the rate limit of ARP packets for the provided interface.
statistics	(Optional) Displays statistics for the following types of packets that have been processed by this feature: forwarded, dropped, MAC validation failure, and IP validation failure.
vlan *vlan-range*	(Optional) Displays the statistics for the selected range of VLANs.

Command Default   This command has no default settings.

Command Modes   Privileged EXEC (#)

Command History

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

Usage Guidelines   If you do not enter the **statistics** keyword, the configuration and operating state of DAI for the selected range of VLANs is displayed.

If you do not specify the interface name, the trust state and rate limit for all applicable interfaces in the system are displayed.

Examples   This example shows how to display the statistics of packets that have been processed by DAI for VLAN 3:

```
Router# show ip arp inspection statistics vlan 3

Vlan        Forwarded        Dropped      DHCP Drops      ACL Drops
----        ---------        -------      ----------      ----------
   3           31753          102407          102407               0

Vlan    DHCP Permits     ACL Permits    Source MAC Failures
----    ------------     -----------    -------------------
   3           31753               0                      0

Vlan   Dest MAC Failures    IP Validation Failures
----   -----------------    ----------------------
   3                   0                         0
Router#
```

This example shows how to display the statistics of packets that have been processed by DAI for all active VLANs:

```
Router# show ip arp inspection statistics

Vlan      Forwarded       Dropped     DHCP Drops     ACL Drops
----      ---------       -------     ----------     ----------
   1              0             0              0              0
   2              0             0              0              0
   3          68322        220356         220356              0
   4              0             0              0              0
 100              0             0              0              0
 101              0             0              0              0
1006              0             0              0              0
1007              0             0              0              0


Vlan    DHCP Permits    ACL Permits    Source MAC Failures
----    ------------    -----------    -------------------
   1              0             0                      0
   2              0             0                      0
   3          68322             0                      0
   4              0             0                      0
 100              0             0                      0
 101              0             0                      0
1006              0             0                      0
1007              0             0                      0


Vlan    Dest MAC Failures    IP Validation Failures
----    -----------------    ----------------------
   1                    0                         0
   2                    0                         0
   3                    0                         0
   4                    0                         0
 100                    0                         0
 101                    0                         0
1006                    0                         0
1007                    0                         0
Router#
```

This example shows how to display the configuration and operating state of DAI for VLAN 1:

```
Router# show ip arp inspection vlan 1
Source Mac Validation      : Disabled
Destination Mac Validation : Disabled
IP Address Validation      : Disabled

Vlan    Configuration    Operation    ACL Match         Static ACL
----    -------------    ---------    ---------         ----------
   1    Enabled          Active

Vlan    ACL Logging    DHCP Logging
----    -----------    ------------
   1    Deny           Deny
Router#
```

This example shows how to display the trust state of interface Fa6/3:

```
Router# show ip arp inspection interfaces fastEthernet 6/3
Interface        Trust State    Rate (pps)    Burst Interval
---------------  -----------    ----------    --------------
Fa6/1            Untrusted              20                 5
Router#
```

This example shows how to display the trust state of the interfaces on the switch:

```
Router# show ip arp inspection interfaces
Interface          Trust State    Rate (pps)
---------------    -----------    ----------
Gi1/1              Untrusted              15
Gi1/2              Untrusted              15
Gi3/1              Untrusted              15
Gi3/2              Untrusted              15
Fa3/3              Trusted              None
Fa3/4              Untrusted              15
Fa3/5              Untrusted              15
Fa3/6              Untrusted              15
Fa3/7              Untrusted              15
Router#
```

Related Commands

Command	Description
arp access-list	Configures an ARP ACL for ARP inspection and QoS filtering and enters the ARP ACL configuration submode.
clear ip arp inspection log	Clears the status of the log buffer.
show ip arp inspection	Displays the status of DAI for a specific range of VLANs.

show ip arp inspection log

To show the status of the log buffer, use the **show ip arp inspection log** command.

> **show ip arp inspection log**

Syntax Description   This command has no arguments or keywords.

Command Default   This command has no default settings.

Command Modes   Privileged EXEC (#)

Command History

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

Examples   This example shows how to display the current contents of the log buffer before and after the buffers are cleared:

```
Router# show ip arp inspection log
Total Log Buffer Size : 10
Syslog rate : 0 entries per 10 seconds.

 Interface       Vlan   Sender MAC        Sender IP        Num of Pkts
 --------------  -----  ----------------  --------------   -----------
 Fa6/3           1      0002.0002.0002   1.1.1.2           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.3           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.4           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.5           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.6           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.7           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.8           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.9           1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.10          1(12:02:52 UTC Fri Apr 25 2003)
 Fa6/3           1      0002.0002.0002   1.1.1.11          1(12:02:52 UTC Fri Apr 25 2003)
    --           --         --             --              5(12:02:52 UTC Fri Apr 25 2003)
Router#
```

This example shows how to clear the buffer with the **clear ip arp inspection log** command:

```
Router# clear ip arp inspection log
Router# show ip arp inspection log
Total Log Buffer Size : 10
Syslog rate : 0 entries per 10 seconds.
No entries in log buffer.
Router#
```

Related Commands

Command	Description
clear ip arp inspection log	Clears the status of the log buffer.
show ip arp inspection log	Shows the status of the log buffer.

show ip auth-proxy watch-list

To display the information about the authentication proxy watch list, use the **show ip auth-proxy watch-list** command.

> **show ip auth-proxy watch-list**

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.

Examples   This example shows how to display the information about the authentication proxy watch list:

```
Router# show ip auth-proxy watch-list
Authentication Proxy Watch-list is enabled
Watch-list expiry timeout is 2 minutes
Total number of watch-list entries: 3

 Source IP       Type        Violation-count
 12.0.0.2        MAX_RETRY   MAX_LIMIT
 12.0.0.3        TCP_NO_DATA MAX_LIMIT
 1.2.3.4         CFGED       N/A

Total number of watch-listed users: 3
Router#
```

Related Commands

Command	Description
clear ip auth-proxy watch-list	Deletes a single watch-list entry or all watch-list entries.
ip auth-proxy max-login-attempts	Limits the number of login attempts at a firewall interface.
ip auth-proxy watch-list	Enables and configures an authentication proxy watch list.

show ipc

To display IPC information, use the **show ipc** command.

show ipc {**nodes** | **ports** [**open**] | **queue** | **status**}

Syntax Description

nodes	Displays the participating nodes.
ports	Displays the local IPC ports.
open	(Optional) Displays the open ports only.
queue	Displays the contents of the IPC-retransmission queue.
status	Displays the status of the local IPC server.

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 participating nodes:

```
Router# show ipc nodes
There are 66 nodes in this IPC realm.
   ID      Type                Name                  Last   Last
                                                     Sent   Heard
 2210000 Local      Card33                           0      0
 2000000 ICC        Card0                            0      0
 2010000 ICC        Card1                            0      0
 2020000 ICC        Card2                            0      0
 2040000 ICC        Card4                            0      0

<... output truncated ...>

 23E0000 ICC        Card62                           0      0
 23F0000 ICC        Card63                           0      0
   10000 ICC        IPC Master                       270    17070
Router#
```

This example shows how to display local IPC ports:

```
Router# show ipc ports
There are 6 ports defined.

Port ID       Type       Name
 2210000.1    unicast    Card33:Zone
 2210000.2    unicast    Card33:Echo
 2210000.3    unicast    Card33:Control
 2210000.4    unicast    Remote TTY Server Port
   10000.3    unicast    IPC Master:Control
```

```
 2210000.5     unknown    Card33:Request
     port_index = 0   seat_id = 0x10000    last sent = 0      last heard = 1158
     port_index = 1   seat_id = 0x10000    last sent = 0      last heard = 0
Router#
```

This example shows how to display open IPC ports:

```
Router# show ipc ports open
There are 4 ports defined.

Port ID         Type       Name
  10000.7     unicast    Unknown
    port_index = 0  last sent = 2      last heard = 0

  10000.8     unicast    Unknown
    port_index = 0  last sent = 0      last heard = 0

  10000.9     unicast    Unknown
    port_index = 0  last sent = 17753 last heard = 0
    port_index = 1  last sent = 0      last heard = 0
Router#
```

This example shows how to display the contents of the IPC-retransmission queue:

```
Router# show ipc queue
There are 0 IPC messages waiting for acknowledgement in the transmit queue.
There are 0 IPC messages waiting for a response.
There are 0 IPC messages waiting for additional fragments.
There are 2 messages currently in use by the system.
Router#
```

This example shows how to display the status of the local IPC server:

```
Router# show ipc status
IPC System Status:

This processor is a slave server.

1000 IPC message headers in cache
377053 messages in, 293133 out, 210699 delivered to local port,
83655 acknowledgements received, 83870 sent,
0 NACKS received, 0 sent,
0 messages dropped on input, 0 messages dropped on output
0 no local port, 0 destination unknown, 0 no transport
0 missing callback or queue, 0 duplicate ACKs, 0 retries,
0 message timeouts.
0 ipc_output failures, 0 mtu failures,
0 msg alloc failed, 0 emer msg alloc failed, 0 no origs for RPC replies
0 pak alloc failed, 0 memd alloc failed
0 no hwq, 0 failed opens, 0 hardware errors
No regular dropping of IPC output packets for test purposes
Router#
```

show ip cache flow

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

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

Syntax Description

aggregation *type*	(Optional) Displays the configuration of a particular aggregation cache; see the "Usage Guidelines" section for valid values.
module *num*	(Optional) Displays information about 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   Valid values for **aggregation** *type* are as follows:

- **as**—AS aggregation cache
- **destination-prefix**—Destination-prefix aggregation cache
- **prefix**—Source/destination-prefix aggregation cache
- **protocol-port**—Protocol and port aggregation cache
- **source-prefix**—Source-prefix aggregation cache

If you enter the **show ip cache flow aggregation** command without the **module** *num*, the software-switched aggregation cache on the route processor (RP) is displayed.

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

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

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

 IP Flow Switching Cache, 0 bytes
  0 active, 0 inactive, 0 added
  0 ager polls, 0 flow alloc failures
  Active flows timeout in 30 minutes
```

```
 Inactive flows timeout in 15 seconds
 last clearing of statistics never
Protocol Total Flows Packets Bytes Packets Active(Sec)
Idle(Sec)
-------- Flows /Sec /Flow /Pkt /Sec /Flow
/Flow

 SrcIf SrcIPaddress DstIf DstIPaddress Pr SrcP
DstP
 Pkts

 Displaying Hardware entries in Module 7
 SrcIf SrcIPaddress DstIPaddress Pr SrcP
 DstP Pkts
 Fa5/11 11.1.1.38 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.39 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.40 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.41 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.42 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.43 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.44 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.45 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.46 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.47 12.1.1.2 udp 63
 63 986796
 Fa5/11 11.1.1.48 12.1.1.2 udp 63
 63 986796
Router#
```

This example shows how to display the information about a destination-prefix aggregation cache for a specific module:

```
Router# show ip cache flow aggregation destination-prefix module 1
IPFLOW_DST_PREFIX_AGGREGATION records and statistics for module :1
IP Flow Switching Cache, 278544 bytes
  2 active, 4094 inactive, 6 added
  236 ager polls, 0 flow alloc failures
  Active flows timeout in 30 minutes
  Inactive flows timeout in 15 seconds

Dst If        Dst Prefix      Msk  AS    Flows  Pkts B/Pk  Active
Gi7/9         9.1.0.0         /16  0     3003   12M   64   1699.8
Gi7/10        11.1.0.0        /16  0     3000   9873K 64   1699.8
Router#
```

Table 2-39 describes the **show ip cache flow** command output fields.

Table 2-39   show ip cache flow Command Output Fields—Packet Size Distribution

Field	Description
IP packet size distribution	Two lines below this banner that show the percentage distribution of packets by size range. In this display, 55.4% of the packets fall in the size range of 33 to 64 bytes.

Table 2-40 describes the fields in the flow-switching cache lines of the output.

Table 2-40   show ip cache flow Command Output Fields—Flow-Switching Cache

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

Table 2-41 describes the fields in the NetFlow cctivity by protocol lines of the output.

Table 2-41   show ip cache flow Command Output Fields—NetFlow Activity by Protocol

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

Table 2-41   show ip cache flow Command Output Fields—NetFlow Activity by Protocol

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

Table 2-42 describes the fields in the current flow lines of the output.

Table 2-42   show ip cache flow Command Output Fields—Current Flow

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

Related Commands

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

show ip cache verbose flow

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

show ip cache verbose flow

Syntax Description   This command has no keywords or arguments.

Command Default   This command has no default settings.

Command Modes   Privileged EXEC (#)

Command History

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

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

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

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

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

```
Router# show ip cache verbose flow
IP packet size distribution (1094508 total packets):
   1-32   64   96  128  160  192  224  256  288  320  352  384  416  448  480
   .000 1.00 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000

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

IP Flow Switching Cache, 4456704 bytes
  2 active, 65534 inactive, 2 added
  298 ager polls, 0 flow alloc failures
  Active flows timeout in 30 minutes
  Inactive flows timeout in 15 seconds
IP Sub Flow Cache, 270600 bytes
  4 active, 16380 inactive, 4 added, 2 added to flow
  0 alloc failures, 0 force free
```

```
  1 chunk, 1 chunk added
  last clearing of statistics never
Protocol        Total    Flows   Packets Bytes  Packets Active(Sec) Idle(Sec)
--------         Flows    /Sec     /Flow /Pkt     /Sec     /Flow      /Flow

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

SrcIf          SrcIPaddress   DstIf         DstIPaddress    Pr TOS Flgs  Pkts
Port Msk AS                   Port Msk AS   NextHop            B/Pk  Active
IPM: OPkts    OBytes
Fa5/11         11.1.1.2       Fa5/12        12.1.1.2        06 5B  00     551K
0000 /16 0                    0000 /16 0    12.1.1.2           46   149.7
FO: 1
Fa5/11         11.1.1.3       Fa5/12        12.1.1.2        06 5B  00     553K
0000 /16 0                    0000 /16 0    12.1.1.2           46   150.4
FO: 1

Displaying Hardware entries in Module 7
 SrcIf         SrcIPaddress        DstIPaddress       Pr      SrcP      DstP
Pkts
 --           0.0.0.0             0.0.0.0        0       0         0         3

Router#
```

Table 2-43 describes the fields shown in the NetFlow cache lines of the display.

Table 2-43   show ip cache verbose flow Field Descriptions in the NetFlow Cache Display

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

Table 2-44 describes the fields shown in the activity by the protocol lines of the display.

Table 2-44   show ip cache verbose flow Field Descriptions in Activity By Protocol Display

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

Table 2-45 describes the fields in the NetFlow record lines of the display.

Table 2-45   show ip cache verbose flow Field Descriptions in NetFlow Record Display

Field	Description
SrcIf	Interface on which the packet was received.
Port Msk AS	Source port number (displayed in hexadecimal format), IP address mask, and autonomous system number. This field is always set to 0 in MPLS flows.
SrcIPaddress	IP address of the device that transmitted the packet.
DstIf	Interface from where the packet was transmitted.
Port Msk AS	Destination port number (displayed in hexadecimal format), IP address mask, and autonomous system. This field is always set to 0 in MPLS flows.
DstIPaddress	IP address of the destination device.
NextHop	BGP next-hop address. This field is always set to 0 in the MPLS flows.

Table 2-45   show ip cache verbose flow Field Descriptions in NetFlow Record Display (continued)

Field	Description
Pr	IP protocol port number, displayed in hexadecimal format. (Go to http://www.iana.org, *Protocol Assignment Number Services*, for the latest RFC values.)
TOS	Type of service, displayed in hexadecimal format.
B/Pk	Average number of bytes that are observed for the packets seen for this protocol.
Flgs	TCP flags, shown in hexadecimal format (result of bitwise OR of TCP flags from all packets in the flow).
Pkts	Number of packets in this flow.
Active	Time the flow has been active.
FO	Fragment offset.

Related Commands

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